26 April 2019

Mr. Bryan Kelly
GO Broome, LLC
c/o Gotham
432 Park Avenue South, 2nd Floor
New York, NY 10016

RE: Preliminary Geotechnical Investigation Report
Proposed GO Broome Development
50 and 60 Norfolk Street (Block 346, Tax Lots 37 and 75)
New York, New York
Langan Project No.: 100646803

Dear Bryan:

We have completed our preliminary geotechnical investigation for the proposed GO Broome Development project located at 50 and 60 Norfolk Street in New York, NY. The purposes of this investigation were to: 1) research and review available site and neighboring building information; 2) obtain subsurface information by drilling borings at the site; and 3) provide preliminary recommendations for foundation design and other geotechnical aspects of construction for the proposed development. This report has been prepared in accordance with our 3 March 2017 (last revised 22 February 2019) proposal and your subsequent authorization. No environmental investigation was performed as part of this work.

All elevations given in this report are referenced to the North American Vertical Datum of 1988 (NAVD88), unless otherwise noted.

PROJECT DESCRIPTION

Existing Site Conditions

The approximate 32,401 ft^2 project site is located at Block 346, Lots 37 and 75 in New York, New York. The site is currently occupied by an asphalt-paved parking lot and a community yard and outdoor garden area on Lot 75; see Figures 1 and 2. The remains of the former 1-story Beth Hamedrash Hagodol (BHH) Synagogue that was damaged in a fire in May 2017 is located on Lot 37. The site is bordered by Broome Street to the north, Suffolk Street to the east, the 5-story 384 Grand Street building and the 14-story 50 Norfolk Street Hong Ning residential building to the south, and Norfolk Street to the west. The BHH Synagogue is a NYC Landmark-designated building.

Based on the 29 December 2017, last revised 14 May 2018, Topographic, Boundary, and Utility Survey prepared by Langan:

- Site grades are generally level and range from approximate el 31 to el 34.
- Broome Street sidewalk grades adjacent to the site range from approximate el 31.5 to el 32.6, from east to west.
- Suffolk Street sidewalk grades adjacent to the site range from approximate el 31.5 to el 33.6, from north to south.
- Norfolk Street sidewalk grades adjacent to the site range from approximate el 32.6 to el 33.7, from north to south.

Proposed Development

Based on the 8 June 2018 65% Schematic Design architectural drawing set prepared by Dattner Architects, we understand that the proposed development scheme consists of constructing:

- A new 12-to-16-story mid-rise senior housing building with one cellar level in the west portion of the site adjacent to Norfolk Street. We understand that stabilized portions of the BHH Synagogue remnants are to remain in place and will be incorporated into the new development;
- A new 3-to-30-story low-to-high-rise residential building with one cellar level and retail space at the ground floor level in the north and east portions of the site adjacent to Broome Street and Suffolk Street.

We understand that the development will have a combined footprint area of approximately 25,275 ft^2. At the time of this report, preliminary structural loads provided by DeSimone Consulting Engineers for the proposed development are as follows:

- Low- to mid-rise interior columns: 1,000 kips
- Low- to mid-rise exterior columns: 700 kips
- High-rise interior columns: 2,800 kips
- High-rise exterior columns: 1,800 kips

SUBSURFACE INVESTIGATION

Review of Available Information

We reviewed historical Sanborn maps, available New York City Department of Buildings (NYC DOB) information, NYC Landmarks information, emergency stabilization drawings for

the BHH synagogue, surficial and regional geologic bedrock information, and available flood data for the site vicinity. Pertinent information from the above documents is summarized in the following paragraphs.

Historical Sanborn Maps

We reviewed available historical Sanborn Maps dated 1894, 1905, 1913, 1922, 1950, 1968, 1976 through 1980, 1983, 1985, 1987, 1988, 1990, 1992 through 1996, and 2001 through 2005; see Appendix A.

- 1894 Sanborn Map: The 1894 Sanborn Map depicts the project site as being occupied by a Synagogue building in the west portion of the site, a Baptist Church building in the southeast portion of the site, and multiple three- to five-story buildings with yards in the north and east portions of the site. The map depicts the site as bordered by Broome Street to the north, Suffolk Street to the east, multiple two- to six-story buildings to the south, and Norfolk Street to the west.
- 1905 Sanborn Map: The 1905 Sanborn Map depicts additional free-standing one-story backyard structures in the central portion of the site. The map also identifies that the majority of the on-site buildings have a basement level. In addition, the map identifies the Synagogue building as a one-story building with a basement and the Baptist Church building as a one- to three-story building with a basement, and depicts the use of furnaces and gas lights in each of the buildings. The map also shows basement levels in the buildings that border the site to the south, along Norfolk Street.
- 1913 Sanborn Map: The 1913 Sanborn Map no longer shows the free-standing one-story backyard structures in the central portion of the site.
- 1922 Sanborn Map: The 1922 Sanborn Map shows the Synagogue building as a one- to two-story building with a basement and shows a one- to two-story "N.Y. Post Office Station B" building in the place of the former Baptist Church building. The New York Post Office building is shown to have a basement.
- 1950 Sanborn Map: The 1950 Sanborn Map no longer shows one of the former five-story buildings in the northern-central portion of the site and no longer identifies the New York Post Office building as such, now identifying the building as flats with an elevator. In addition, the map no longer shows one of the former five-story buildings that bordered the site to the south, along Norfolk Street, and no longer shows one of the former four-story buildings, a portion of which was partially located within the southern portion of the site.
- 1968 and 1976 Sanborn Maps: The 1968 Sanborn Map no longer shows one of the former 5-story buildings within the northwest portion of the site. The 1976 Sanborn Map no longer shows the remaining former 5-story buildings that occupied the northwest portion of the site and shows the northern-central portion of the site as being used for

parking. The 1976 Sanborn Map also no longer shows some of the five- to six-story buildings that bordered the site to the south. The 1968 and 1976 maps indicate that many buildings on the block/adjacent blocks have been removed or have become vacant in this time period.

- 1977 Sanborn Map: The 1977 Sanborn Map no longer shows the former New York Post Office building and shows parking in place of the former 5-story building that bordered the site to the south, along Norfolk Street.
- 1978 and 1979 Sanborn Maps: The 1978 and 1979 Sanborn Maps show no significant changes to the site relative to the 1977 Sanborn Map.
- 1980 Sanborn Map: The 1980 Sanborn Map no longer shows the former three- to five-story buildings in the east portion of the site, showing the Synagogue building and the five-story building in the northeast corner of the site as the only two remaining on-site buildings.
- 1983 Sanborn Map: The 1983 Sanborn Map shows the Synagogue building as the only building on the site and shows the previous parking/vacant building area bordering the site to the south, along Norfolk Street, as being occupied by a 14-story building identified as "Hong Ming Housing for the Elderly" that was built in 1982.
- 1985, 1987, and 1988 Sanborn Maps: The 1985, 1987, and 1988 Sanborn Maps show no significant changes to the site relative to the 1983 Sanborn Map.
- 1990 Sanborn Map: The 1990 Sanborn Map shows the northwest corner of the site as an additional parking area.
- 1992 through 1996 and 2001 through 2005 Sanborn Maps: The 1992 through 1996 and 2001 through 2005 Sanborn Maps show few changes to the site relative to the 1990 Sanborn Map, with the exception of an additional area in the central area of the site shown as a parking area starting with the 2003 Sanborn Map.

New York City Department of Buildings (NYC DOB) Search

We reviewed available structural and foundation-related information obtained from the NYC DOB for the on-site structures and neighboring buildings; see Appendix B for select records and building plans.

- 50 Norfolk Street "Hong Ning" Building (Block 346, Lot 1): Based on our records search and an undated Certificate of Occupancy for property, a 14-story building was completed in 1983; the Certificate of Occupancy does not list any below-grade levels.

  According to a 16 June 1982 "Site Plan, Site Symbols, Planting Schedule, Zoning" drawing prepared for the Chinatown Planning Council, the proposed 1st floor elevation of the 14-story residential building was el 32.61; the elevation datum is not specified on

the drawing. This drawing shows the block in a configuration that is similar to the present configuration, however different block and lot designations are assigned.

According to a 13 January 2005 "Low Pressure Oil Filled Boiler" drawing prepared by New York Engineering Associates, P.C., two boilers are located in the central portion of the ground floor of the building.

According to a 25 January 2005 drawing set prepared by New York Engineering Associates, P.C., the boiler room is shown to be within a cellar level and a buried 10,000 gallon tank is identified to the east of the building; this tank is indicated to be abandoned in place. The drawing set includes details for a new fuel oil tank located at the northeast corner of the building, adjacent to the BHH Synagogue.

A 30 October 2006 "Oil Tank Foundation Plan & Details" drawing prepared by Anthony Gennaro, P.E. shows an oil tank foundation in the same location as that specified on the 25 January 2005 drawings described above. The oil tank foundation specified in the 30 October 2006 drawing is supported by 3-inch-diameter helical piles, each having a capacity of 60 kips. The 30 October 2006 drawing shows the helical piles as being installed within 12-inch sonotube forms that extended approximately 4-feet-4-inches below existing grade, and shows the foundation slab as 1-foot-6-inches thick and comprised of 5,000 psi concrete.

No other structural or foundation-related information regarding this building was available at the time of our search.

- 60 Norfolk Street, BHH Synagogue (Block 346, Lots 37 and 75) (Project Site): No structural or foundation-related information was available at the time of our search.

- 384 Grand Street building (Block 346, Lot 95): Based on our records search and a 17 June 1987 Certificate of Occupancy, the building is 5-stories with one cellar level.

  According to a 12 April 2000 "Roof Plan & Equipment Room" drawing prepared by Arcnet Architects, the cellar does not occupy the entire footprint area of the building and includes a light well that is located 11-feet below the Grand Street sidewalk grade. The depth of the cellar floor slab is not specified on the drawing.

  According to 17 August 2006 drawings prepared by Glen Coben Architecture + Design P.L.L.C., existing "waste" is shown beneath the cellar floor slab, and implementation of new grease traps are shown at cellar level. The gas and sanitary riser diagrams identify the cellar level as the lowest below grade level within the existing building.

  No other structural or foundation-related information regarding this building was available at the time of our search.

NYC Landmarks Information

Based on current mapping data made available on the NYC Landmarks Preservation Commission website, the BHH Synagogue is a NYC Landmark-designated building. No other Landmarks are located within 90 feet of the project site.

BHH Synagogue Emergency Stabilization Drawings

We reviewed the Emergency Stabilization Drawings prepared by Ancora Engineering for the BHH Synagogue, dated 05 March 2019; see Appendix C. According to the drawings, portions of the synagogue's perimeter brick walls and tower walls, stairways, concrete slab-on-grade, and below-grade footings and foundations are to be left in place, and the top of the stabilized walls are to be waterproofed. The current extents of walls and slabs to remain in place are as follows, generally including walls along the west, east, and south sides of the synagogue and slabs occupying the interior of the synagogue:

- Along the west elevation of the synagogue, along Norfolk Street, the remnants will be stabilized to configure a northwest tower wall 11-feet 6-inches tall and 13-feet 9-inches wide, followed by the main entrance stairway 7-feet 11-inches tall and 31-feet 10-inches wide, completed by a southwest tower wall 36-feet 6-inches tall and between 13-feet 9-inches and 13-feet 10-inches wide. Shoring and bracing of the southwest tower are to be filed under a separate set of drawings.

- Along the east elevation of the synagogue, parallel to Suffolk Street, the remnants will be stabilized to configure a centralized brick wall that is 6-feet tall and 57-feet 7-inches wide.

- Along the south elevation of the synagogue, parallel to Grand Street, the remnants will be stabilized to configure a southwest tower wall that is 36-feet 6-inches tall and between 13-feet 4-inches and 13-feet 5-inches wide, followed by a brick wall that is between 6-feet and 13-feet 10-inches tall and extends to near the eastern property line (width not specified). Shoring and bracing of the southwest tower are to be filed under a separate set of drawings.

- Along the north elevation of the synagogue, parallel to Broome Street, the remnants will be stabilized to configure a northwest tower wall that is 11-feet 6-inches tall (width not specified) and a section of brick wall near the eastern property line that is 6-feet tall (width not specified).

- The cellar concrete slab-on-grade will be cracked/perforated to permit drainage, and berms (1V:3H to 1V:4H) will be created from the cellar slab up to existing grade,

behind the stabilized remnants, where present. The backfill material for the berm is to consist of concrete/masonry demolition debris and/or clean soil.

- The top of the lowest level slab of the BHH synagogue appears to be located approximately 2 feet below adjacent Norfolk Street sidewalk grade.

We understand that you are currently in discussions to allow for the final stabilized height of the southwest BHH Synagogue tower to be lowered to 11-feet 6-inches tall to match the height of the northwest tower.

Surficial Geology

We reviewed the Surficial Geologic Map of New York (Lower Hudson Sheet) dated 1991 and published by the New York State Geological Survey. The surficial geologic map indicates that soils beneath the project site consist of till of variable textures. A nearby region of lacustrine sand deposits is shown to the north and west of the site; see Figure 3.

We also reviewed the Sanitary and Topographical Map of the City and Island of New York prepared for the Council of Hygiene and Public Health by Egbert L. Viele, dated 1865. This map shows that the project site is located within an area historically characterized as meadow land; see Figure 4.

Bedrock Geology

We reviewed the Bedrock and Engineering Map of New York County by Charles A. Baskerville, dated 1994. The bedrock geology map indicates that bedrock beneath the site is part of the Ravenswood Granodiorite formation and consists of medium- to dark-gray sillimanite-garnet-pink microcline-plagioclase-biotite-muscovite-quartz and/or biotite-hornblende-orthoclase layered gneiss. This map shows Cameron's fault line nearby to the west of the site, where the bedrock transitions to Manhattan Schist, which consists of gray, medium- to coarse-grained, layered sillimanite-muscovite-biotite-kyanite schist and gneiss interlayered with layered tourmaline-garnet-plagioclase-biotite-quartz schist and gneiss with black amphibolite layers 3-feet or more thick; see Figure 5.

We also reviewed the Rock Data Map of Manhattan prepared by the Office of the President Borough of Manhattan Topographical Bureau, Third Edition, dated 1944. The map indicates that the top of bedrock at the core boring located closest to the project site (about 300 feet southwest of the project site's southern border) was found to be located at el -133 MBPD (el -131.4 NAVD88), or approximately 164 feet below existing sidewalk grade in the vicinity of the project site.

Flood Data Research

According to the Federal Emergency Management Agency (FEMA) Preliminary Flood Insurance Rate Map (FIRM) Number 3604970203G, dated 5 December 2013, the project site lies outside of the 1% and 0.2% annual chance floodplains; see Figure 6.

Field Subsurface Investigation

The geotechnical field investigation for this study consisted of drilling eight borings identified as LB-2, LB-4 through LB-8, LB-11, and LB-12. The borings were performed at accessible site areas within the existing asphalt-paved parking area. Proposed borings LB-1, LB-3, LB-9, and LB-10 were not accessible at the time of our investigation work and are to be performed at a late date once access to these locations can be provided; see Figure 2.

The borings were completed under the full-time Special Inspection of a field engineer from Langan and under the direct supervision of our project Professional Engineer. Our field engineer marked out the boring locations in the field, maintained logs of the explorations, classified soil, assigned NYC Building Code material classifications, and obtained representative material samples. Boring logs are provided in Appendix D and generalized subsurface profiles A-A and B-B are provided in Figure 7. Permission to access the site was obtained from the Chinese American Planning Council (CPC) prior to performing our work.

The borings for this study were drilled by Craig Geotechnical Drilling Co. between 8 and 14 February 2019. The borings were performed within the existing asphalt-paved parking area using truck-mounted drilling equipment. The borings were advanced using mud rotary drilling techniques to depths ranging from 77 feet to 102 feet below existing grades.

A standard 2-inch-outer-diameter split spoon sampler was used to obtain samples of the underlying soil strata. The Standard Penetration Test (SPT)[1] was accomplished as part of the sampling procedure in accordance with ASTM D1586, and the SPT results were recorded by our inspecting engineer. As part of the SPT test, a safety hammer was used; in boring LB-8, an automatic hammer was used to advance the split spoon sampler between ground level and 77 feet below grade due to rainy weather conditions at the time of sampling. SPT soil samples were obtained to the termination depth of each boring. Soil drilling was advanced using a 3-7/8-inch tri-cone roller bit. All boreholes were backfilled with soil cuttings and patched with asphalt upon completion.

[1] The Standard Penetration Test (SPT) is a measure of the soil density and consistency. The SPT N-value is defined as the number of blows required to drive a 2-inch O.D. split-barrel sampler 12 inches, after an initial penetration of 6 inches using a 140 pound hammer falling freely for 30 inches.

Laboratory Testing

Selected soil samples were transmitted to a specialty testing laboratory where the following laboratory tests were performed:

- 9 Natural Water Content Analyses (ASTM D2216)
- 6 Grain Size Distribution Analyses (ASTM D422)
- 3 Atterberg Limit Analyses (ASTM (D4318)

A summary of the laboratory tests performed and their results are included below and in Appendix E.

SUBSURFACE CONDITIONS

The site subsurface conditions encountered in the borings generally consist of surface materials overlying successive layers of fill, upper sand, silt, lower sand, and clay. The following sections describe the encountered subsurface and groundwater conditions.

Surface Materials

An approximately 1- to 3-inch thick layer of asphalt paving was encountered at the surface in all borings.

Fill

A fill layer consisting of gray to brown sand with varying proportions of gravel, silt, and construction debris (red brick and asphalt) was encountered directly below the surface materials in all borings. The fill was observed to be approximately 10 feet to 16 feet thick. The fill was found to be very loose to very dense as evidenced by SPT N-values ranging from 2 blows/foot to refusal (over 100 blows/foot), with an average SPT N-value of 24 blows/foot, and is classified as NYC Building Code Class 7 material.

Upper Sand

A stratum consisting of brown sand with varying amounts of gravel and silt was encountered below the fill layer in all borings. The stratum was first encountered at depths ranging from approximately 10 feet to 16 feet below existing grades, corresponding to approximate el 15 to el 23, and was observed to be approximately 9 feet to 25 feet thick. In boring LB-8, an approximately 5-foot thick zone of brown silt was encountered below the fill layer and above the sand at approximately 16 feet below existing grade, corresponding to approximate el 16.5. The upper sand stratum was found to be loose to dense as evidenced by SPT N-values ranging from 6 blows/foot to 55 blows/foot, with an

average SPT N-value of 18 blows/foot, and is generally classified as NYC Building Code Class 6, Class 3b, and Class 3a material.

Based on laboratory test results for samples obtained from the upper sand stratum, water contents range from 23.2% to 26.3%.

Silt

A stratum consisting of brown to gray silt with varying proportions of gravel, sand and clay was encountered below the upper sand stratum in all borings. The silt was first encountered at depths ranging from approximately 25 feet to 35 feet below existing grades, corresponding to approximate el -3 to el 7.5, and was observed to be approximately 20 feet to 60 feet thick. In borings LB-2 and LB-8, an approximately 5- to 10-foot thick zone of sand with varying amounts of silt was encountered interbedded within the silt at approximately 50 feet to 80 feet below existing grades, corresponding to approximate el -47.5 to el -17. The silt stratum was found to be loose to dense as evidenced by SPT N-values ranging from 7 blows/foot to refusal (over 100 blows/foot), with an average SPT N-value of 27 blows/foot, and is generally classified as NYC Building Code Class 6, Class 5b and Class 5a material.

Based on laboratory test results for samples obtained from the silt stratum, water contents range from 28.7% to 30.8%, liquid limit (LL) ranges from 23 to 26, plastic limit (PL) ranges from 20 to 21, and plasticity index (PI) ranges from 3 to 5.

Lower Sand

A stratum consisting of brown to gray sand with varying proportions of gravel and silt was encountered below the silt stratum in all borings. The sand was first encountered at depths ranging from approximately 45 feet to 95 feet below existing grades, corresponding to approximate el -62.5 to el -12.5, and was encountered to the termination depth of all borings except LB-12, where gray clay was encountered at a depth of 95 feet below existing grade and extended to the termination depth of the boring. The lower sand stratum was found to be medium dense to dense as evidenced by SPT N-values ranging from 20 blows/foot to refusal (over 100 blows/foot), with an average SPT N-value of 67 blows/foot, and is generally classified as NYC Building Code Class 3b, Class 3a, and Class 2a material. The clay encountered in boring LB-12 was found to be hard as evidenced by SPT N-values of 62 blows/foot to refusal (over 100 blows/foot) and is classified as NYC Building Code Class 4a material.

Based on laboratory test results for samples obtained from the lower sand stratum, water content ranges from 20.6% to 22.5%.

Groundwater

Groundwater was measured when first encountered in each boring and was also measured in temporary groundwater level observation wells during the January 2019 Langan Phase II Environmental Investigation at the site. Groundwater was observed to be approximately 26.5 feet to 29 feet below existing site grades, or at approximate el 2.5 to el. 7.

PRELIMINARY FOUNDATION RECOMMENDATIONS

Based on the results of our subsurface investigation, natural sand and silt soils were encountered below the fill materials at the site. Where new building loads are relatively low, primarily within the low-to mid-rise portions of the proposed buildings, we anticipate that shallow foundations bearing on natural upper sand soils could be utilized.

In areas where new building loads are relatively high within the proposed high-rise building, or in other areas of the development where higher capacity elements are needed than can be achieved using shallow foundations, deep foundations consisting of driven piles or drilled micropiles deriving their support within the natural silt and lower sand soils can be utilized.

The following sections provide our recommendations for the foundation system, seismic design parameters, below-grade walls and floor slabs, groundwater control, soil excavation, temporary excavation support, and other geotechnical aspects of the proposed construction.

For the purposes of the preliminary recommendations provided in this report, we have assumed that the cellar level floor slab would be located 16 feet below existing grade, or at approximate el 16, and that general excavations for the proposed cellar level would need to extend deeper to reach proposed foundation subgrades.

Shallow Foundations

The NYC Building Code Class 3b sand located below the anticipated foundation level is satisfactory bearing material that can be used for foundation support. The allowable soil bearing pressure for design of shallow foundations bearing on the above referenced natural sand soils or approved, compacted fill is 3 tons per square foot (tsf).

Individual spread footings should be at least 3 feet wide and continuous wall footings should be at least 2 feet wide. Lateral loads can be resisted by shear resistance developed at the base of the footings; a static friction coefficient of 0.25 can be used to calculate sliding resistance.

If portions of the fill layer are locally encountered at a new footing elevation, then the excavation will have to be deepened to reach the natural sand soil. In this case, the footings may need to be lowered to reach suitable bearing material.

New shallow foundations constructed adjacent to existing neighboring building foundations should bear at the same elevations as adjacent footings. If new foundations are anticipated to bear at lower elevations than adjacent existing foundations, existing foundations should be underpinned to the depth of the new foundations, if the adjacent existing foundations are above a 1H:1V theoretical influence line extending upwards from the base of the proposed below-grade footings.

In accordance with the NYC Building Code, Special Inspection of the foundation subgrades should be performed to verify the soil is suitable to provide the design bearing pressure. Bearing surfaces should be level and free of debris and standing water. After the bearing surface has been approved, it should be protected until the footing is poured.

Deep Foundations

Concrete-Filled Pipe Piles

As previously discussed, in areas where higher capacity elements are needed, the proposed building can be supported on closed-end pipe piles driven into the silt and lower sand and filled with concrete. We preliminarily expect that a 14-inch or 16-inch-dia Grade 3 (Modified 50 ksi) steel closed-end pipe pile having a 0.5 inch wall thickness driven into the lower sand and filled with concrete having a 28-day compressive strength of 4,000 lbs/in^2 could be suitable pile types to achieve a 150 ton compression design capacity. If available, more economical and generally equivalent 13.375-inch-dia by 0.48-inch wall thickness, or 16-inch-dia by 0.5-inch wall thickness, new secondary oil casing pipe piles can be utilized as a substitute for the 14-inch-dia and 16-inch dia piles identified above. We preliminarily anticipate the 14-inch-dia or 16-inch-dia piles or equivalent oil casing pipe piles can sustain an uplift design capacity of 15 tons. The basic allowable lateral load capacity for the driven pile is 2 kips.

At this time, we understand that raising site grades is not anticipated to be required. If the proposed development scheme will include raising site grades, the individual pile compression capacity given above will need to be reviewed to include an allowance for downdrag.

Based on the available information and assuming that piles would be installed from approximately 15 feet below existing sidewalk grade, we anticipate pile lengths may vary from about 60 feet to 75 feet at the site. We recommend that a minimum 1-1/4-inch-thick

end plate be used in an effort to prevent damage to the pile toe during driving. The minimum pile center-to-center spacing should be 3 feet for a 14-inch-dia pile and 3.5 feet for a 16-inch dia pile. Piles battered at 6V:1H can be used to resist lateral loads, if necessary.

Index piles and pile load tests are necessary to confirm and optimize the final pile capacity, pile diameter, wall thickness, length, and final driving criteria prior to the start of construction. In accordance with the provisions of the NYC Building Code, we recommend that two full-scale compression load tests be performed on each pile type/capacity, and one uplift and lateral load test be performed on each pile type/capacity. The load testing should be done as soon as possible so that modifications, if necessary, can be made prior to production pile installation.

The index piles should be driven at locations selected by the Geotechnical Engineer and should be the same in every respect to the production piles. The index piles to be load tested should also be selected by the Geotechnical Engineer. Dynamic testing of the index piles using the Pile Driving Analyzer (PDA) should be performed to measure pile stresses during driving, to estimate pile capacities, and to finalize driving criteria. Frictional resistance provided by the fill should be discounted when determining the termination driving criteria.

We recommend that driven piles not be utilized within 25 feet of the existing BHH Synagogue remnants, the adjacent neighboring buildings or neighboring structures/utilities unless the foundation contractor can successfully demonstrate during the index pile/pile load testing program prior to construction that driven piles can be installed as a viable foundation support alternative to drilled micropiles (as discussed in the following section) without negatively impacting these structures or inducing excessive vibrations in them. In addition, obstructions including shallow foundations and slabs associated with former structures which occupied the site, are anticipated to be encountered within the fill layer. At a minimum, driven pile locations within 25 feet of the property line and the existing BHH Synagogue remnants should be pre-drilled through the fill materials in order to reduce impact to adjacent structures and utilities due to vibrations induced during pile driving.

Drilled Micropiles

In areas located within 25 feet of the existing BHH Synagogue remnants, the adjacent neighboring buildings or neighboring structures/utilities, building loads can be supported on drilled-in micropiles deriving their load-carrying capacity by means of a bond zone in NYC Building Code Class 3b and 5b, or better, sand and silt. Drilled micropiles are capable of simultaneously providing compressive, uplift, and lateral resistance.

Drilled micropiles are installed by drilling a steel casing to a depth required to generate the required load capacity. The steel reinforcement is then set and grout is placed under pressure while the casing is withdrawn. A permanent steel casing is left in place penetrating the fill and extending to a minimum depth of 2 feet below adjacent building foundations' zone of influence. An individual pile design compression capacity on the order of 100 tons for a 9-5/8-inch-diameter drilled micropile and 150 tons for a 13-3/8-inch-diameter drilled micropile is anticipated to be achievable. Drilled micropile grout and reinforcement should be designed in accordance with the provisions of the NYC Building Code. We have developed the following micropile option to assist in foundation design:

Compression Load Capacity	**100 tons**	**150 tons**
Micropile Diameter	9.625 inch	13.375 inch
Minimum Bond Zone Length (into NYC Building Code Class 3b, 5b, or better material)[1]	55 feet	60 feet
Minimum Reinforcement	1 #18 full length bar	1 #24 full length bar
Minimum Concrete Compressive Strength	5,000 lbs/in^2	5,000 lbs/in^2
Minimum Center-to-Center Micropile Spacing	4 feet	4 feet
Uplift Load Capacity[1]	30 tons	50 tons

Notes:
1. The design minimum bond zone length assumes the drilled micropile will be pressure grouted during construction.
2. Uplift capacities are based on maximum structural capacity of the reinforcement and maximum geotechnical capacity of the soil socket. The actual capacity may need to be lowered to account for structural stiffness requirements.

The drilled micropile capacities must be verified in the field by means of at least two (2) compression load tests for each pile type/capacity performed in accordance with the provisions of the NYC Building Code. Conventional top-load testing procedures could be used for the drilled test piles. In addition, strain gauges should be installed at selected depths within the drilled piles to measure the load distribution along the pile shafts during the performance of the load tests. The information gathered with the strain gauges is critical in order to analyze the load testing results in an attempt to optimize the design embedment into the bearing stratum.

The basic allowable lateral load for a drilled micropile is 2 kips. Uplift loads should not exceed the values provided in the table herein. If higher lateral and uplift resistance (if any) is needed, lateral and uplift field load tests must be performed in accordance with the provisions of the NYC Building Code to substantiate the higher required resistance.

Below Grade Walls and Floor Slabs

Below grade walls are presumed to be fixed against rotation, and should therefore be designed to resist the soil and surcharge pressures as shown on Figure 8. In addition, the below grade walls bordering Norfolk Street, Broome Street, and Suffolk Street should be checked against the potential for a temporary water level near street level should a utility break occur.

The below-grade walls along the south side of the site should be designed to withstand lateral loading from neighboring buildings, calculated as a surcharge, if the neighboring building foundations are supported above a 1H:1V theoretical influence line extending upwards from the base of the proposed below-grade wall foundations. Lateral loading from neighboring building footings need not be considered if these footings are to be underpinned to a level below the above-mentioned influence line.

In areas where deep foundation support is utilized, the lowest level floor slabs should be designed as a structural slab supported by the deep foundation elements. In areas where shallow foundation support is utilized and natural sand soils are encountered at the floor slab subgrade elevation, the floor slabs can be designed as a slab-on-grade using a modulus of subgrade reaction of 150 lbs/in^3.

Although the groundwater level is not expected to be encountered during basement level excavation, we recommend that the below grade walls, lowest level floor slabs, and pits be fully waterproofed, and water stops be placed between all below-grade joints to limit the potential for wetness due to nearby utility breaks or heavy precipitation events.

Settlements

Settlements of shallow foundations and slabs-on-grade are estimated to be one inch or less, with differential settlements between adjacent footings of ¾-inch or less. Total and differential settlements for deep foundation supported foundations are estimated to be less than ¾-inch.

The foundations will need to be sized and designed appropriately, so total and differential settlements are kept within tolerable limits. Once the column / foundation layout and column loading are finalized, we will need to perform additional geotechnical settlement analysis to assist the Structural Engineer in foundation design.

Seismic Design Parameters

Based on the results of our subsurface investigation, we recommend the building be designed using the following seismic parameters obtained from the 2014 NYC Building Code:

- Site Class = D
- Maximum Considered Earthquake Spectral Response Acceleration Parameters:
    - At 0.2 Second Period: S_S = 0.278 g
    - At 1.0 Second Period: S_1 = 0.071 g

The above ground motions should be adjusted for site class effects using coefficients F_a = 1.57 and F_v = 2.40.

The NYC Building Code requires an evaluation of the liquefaction potential of noncohesive soils or clays, silts, and clayey silts with plasticity index less than 20 that are located below the groundwater table and less than 50 feet below the ground surface. Based on an initial screening of the SPT N-value data from the borings, some points fall within the "Liquefaction Evaluation Required" on the NYC Liquefaction Assessment Diagram.

To evaluate the potential for soil liquefaction, the procedure outlined by Youd et al (2001) was used. This evaluation presents an empirical relationship between the earthquake demand, represented by the Cyclic Stress Ratio (CSR), and the soil resistance to dynamic loading, represented by the Cyclic Resistance Ratio (CRR). The CSR is correlated to the Peak Ground Acceleration (PGA) of the design earthquake event, as well as the in situ soil stresses, whereas the CRR is correlated to SPT N-values obtained in the field. Based on these analyses, liquefaction of the on-site soils is unlikely and need not be considered.

Excavation and Groundwater Control During Construction

At this time, it is our understanding that the cellar level floor slab would be located 16 feet below existing grade, or at approximate el 16, and that general excavations for the proposed cellar level would need to extend deeper to reach proposed foundation subgrades.

Excavation will occur within the fill layer and the natural soil deposits. We anticipate that building foundation remnants, such as concrete block, brick, and foundation walls, footings, and concrete slabs may be present in the fill and will need to be removed and properly disposed of. Underground storage tanks, if encountered, would also need to be properly disposed of in accordance with the governing environmental regulations.

We anticipate that the excavation for one below-grade cellar level would be made above the groundwater level and that seepage water and stormwater that accumulates in the excavation could be collected using conventional sumps and pumps. Pumping of construction dewatering effluent should be done in a manner that will not adversely affect adjacent areas and buildings or cause settlements, loss of ground, or loss of support to adjacent areas.

Subgrade Preparation

The footing and slab subgrade areas should be level and proof-rolled using an approved compactor such as a Bomag BW75 double-drum walk behind compactor, or equivalent. The footing and slab subgrades should be inspected and approved by a qualified geotechnical engineer prior to stone, steel, or concrete placement. Any soft, loose, or unsuitable soils identified by the inspecting geotechnical engineer during proof-rolling should be removed and replaced with approved compacted fill. Any foundation remnants associated with former site structures or boulders encountered within excavations should be fully removed and any void spaces that may be created should be backfilled with approved, compacted fill.

Controlled fill placed in any over-excavation should be placed in 8-inch loose lifts and compacted using a double drum walk behind compactor such as a Bomag BW75 or equivalent. All fill should be compacted to at least 95% of the material's maximum dry density as determined by the Modified Proctor Compaction Test (ASTM D 1557). The water content at the time of compaction should be within 3 percentage points of the optimum water content. All fill placement should be subject to controlled engineering inspection by the geotechnical engineer. No fill material should be placed on areas where free water is standing, on frozen subgrade areas, or on surfaces which have not been approved by the inspecting geotechnical engineer.

The Contractor should be responsible for maintaining all footing and slab subgrades in their as-approved condition until concrete is poured and the excavations are properly backfilled. Fill placement, backfilling, and compaction of footing and slab subgrades should be performed in accordance with the recommendations provided above for controlled fill. Footings and slabs should be constructed as soon as possible following subgrade approval by the geotechnical engineer. Rainwater, snow, ice or trash/debris should not be allowed to accumulate in the excavations.

Temporary Excavation Support and Underpinning

Temporary excavation support will be needed to support the adjacent street and sidewalk areas, and temporary excavation support and/or underpinning will be needed for the

BHH Synagogue remnants and the adjacent buildings located to the south of the site if the foundation subgrade elevation extends to a lower elevation than the adjacent buildings.

At this time, we preliminarily anticipate that temporary support of excavation for a one cellar level development scheme could consist of the following:

- Adjacent Streets and Sidewalks: Along the Norfolk Street, Broome Street, and Suffolk Street frontages, we anticipate that temporary support of excavation could consist of drilled-in or driven solider pile and timber lagging walls that are laterally braced with drilled-in tie-back anchors and/or interior rakers/bracing. Driven soldier piles should not be utilized within 25 feet of the BHH Synagogue remnants, adjacent neighboring buildings or neighboring structures/utilities, as pile driving operations could cause unacceptable vibration levels and could induce settlements in these structures.

- Adjacent 50 Norfolk Street and 384 Grand Street Buildings: Considering that these buildings are located to the south of the site and approximately 12 feet to 30 feet or more away from the proposed development footprint, we do not anticipate that underpinning of these buildings would be required, and that temporary support of excavation consisting of drilled-in or driven solider pile and timber lagging walls that are laterally braced with interior rakers/bracing could be utilized. Driven soldier piles should not be utilized within 25 feet of adjacent neighboring buildings. Drilled-in tie-back anchors, if utilized, would need to be designed to avoid conflicts with the neighboring building foundations.

  The need for underpinning, while not anticipated at this time, should be further assessed once the proposed building design is further developed. Concrete pier underpinning of the existing buildings located to the south of the site may be required to properly support the buildings during construction if the development scheme calls for new building foundation construction within a 1H:1V influence line projected beneath the adjacent building lowest level.

- BHH Synagogue Remnants: Temporary support of excavation and/or underpinning requirements for the synagogue remnants will be highly dependent on the depth and material of the remnant synagogue foundations, as well and the depth and plan extents of the proposed cellar level excavation. At this time, we anticipate that a proposed cellar level that is offset from the remnant synagogue foundations by approximately five feet or more could be facilitated by a temporary support of excavation system consisting of drilled-in soldier pile and lagging walls that are laterally braced with interior rakers/bracing. For a proposed cellar level located within approximately five feet of the remnant synagogue foundations, we anticipate

that underpinning of the synagogue remnants would be required to facilitate below-grade construction.

Considering that the BHH Synagogue is Landmark-designated structure, any specific requirements pertaining to support of excavation, monitoring, or settlement tolerances of the synagogue remnants should be confirmed with the Landmarks Commission prior to progressing a temporary support of excavation or underpinning design.

Based on our review of the BHH Synagogue Emergency Stabilization drawings, the top of the lowest level slab of the Synagogue appears to be located approximately 2 feet below adjacent Norfolk Street sidewalk grade; Elevations of BHH Synagogue remnants and neighboring buildings' lowest level or basement slabs should be confirmed by a Professional Land Surveyor Licensed in the State of New York to assist in identifying the extent of underpinning required, if any. Preconstruction test pits should be performed at selected locations adjacent to the BHH Synagogue remnants and foundation walls associated with the neighboring buildings to investigate foundation depths, types, and bearing materials for the purpose of evaluating underpinning requirements.

If underpinning is required, we recommend that during foundation excavation the bottom of the neighboring buildings' foundation walls should be carefully exposed to determine the material on which the walls bear for the purpose of confirming underpinning requirements. This work should be done in such a manner so as not to damage or cause loss of support to the neighboring building.

All excavation support and underpinning should be designed by a Professional Engineer licensed in the State of New York. Temporary and permanent surcharge loading due to cranes, equipment, buildings, and vehicular traffic should be considered while designing excavation support and underpinning. As required by the NYC Bldg Code, a Professional Engineer licensed in the State of New York and retained by the Owner should provide Special Inspection of this work.

Protection of Adjacent Structures

The BHH Synagogue remnants, neighboring buildings and all utilities, sidewalks, and streets surrounding the site should be protected against loss of support or any other damage during excavation and subsequent construction. Special care will be required during dewatering, soil excavation and removal, and excavation support and underpinning construction activities to ensure excessive vibrations or movements are not induced in these structures, and site activities do not result in their loss of support or instability of the neighboring structures.

A pre-construction conditions documentation should be performed to document existing conditions of the BHH Synagogue remnants that are to remain in place and structures neighboring the site. The survey should include at a minimum a photographic and video documentation of the exposed exterior and select interior facades of the neighboring structures. Documentation should be done in accordance with the requirements of the NYC Building Code. In addition, survey monitoring points and crack monitoring gauges should be established at select locations on the BHH Synagogue remnants and neighboring structures prior to the start of excavation and new foundation construction. Ambient vibrations at the site and in the neighboring structures should also be recorded as part of the pre-construction conditions documentation to establish a baseline of vibrations for comparison with vibrations recorded during construction activities.

The BHH Synagogue remnants and neighboring buildings should be continuously monitored during construction in accordance with the applicable requirements of the NYC Landmarks Commission as outlined in TPPN 10/88 and the NYC Building Code. At a minimum, monitoring should include crack monitoring gauges and survey monitoring points established over select facades to determine if the structures are adversely impacted by the on-site work. Adjacent sidewalks should be similarly monitored on a periodic basis during excavation and foundation construction activities. Vibration levels in neighboring structures should be monitored using seismograph vibration monitors placed at strategic locations in the building lowest levels or basements.

ADDITIONAL SERVICES

At this time, we recommend the following additional engineering services be performed for the proposed development:

1. For a proposed 25,275 ft^2 deep foundation supported building, the NYC Building Code requires a total of twelve drilled borings be performed at the site to satisfy the minimum investigation requirements in the Code. Considering that eight borings have been performed at the site as part of this investigation, we recommend that the remaining four borings be performed at accessible locations at the site within the existing BHH Synagogue remnants and at the existing yard area in the southeast portion of the site to satisfy the NYC Building Code requirements and to confirm the preliminary foundation recommendations provided herein. Borings performed within the extents of the BHH Synagogue remnants will need to be coordinated with the on-going synagogue stabilization efforts.

2. A pre-construction conditions documentation of the BHH Synagogue remnants and adjacent neighboring buildings should be performed prior to commencing any construction activity at the site.

3. Special inspections should be performed during foundation construction, including subgrade preparation, driven pile and drilled-in micropile installation and load testing in accordance with requirements of the NYC Building Code. Special inspection engineering services should be provided by representatives from our office. Our firm should be provided with and review any foundation Contractor submittals for conformance with the recommendations given in this report and the project Construction Documents.

To maintain the continuity of our responsibility on this project, we recommend that the above work be performed by our firm.

CLOSURE/LIMITATIONS

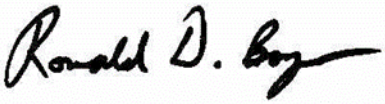
This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability, or groundwater fluctuations. Our interpretation of subsurface conditions is based on field observations from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Langan reviewed field data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions.

This report presents our preliminary recommendations regarding the geotechnical aspects of design and construction for the proposed GO Broome Development project in New York, New York. These preliminary recommendations are based on our site subsurface investigation and our current understanding of the proposed development scheme. Recommendations given are contingent upon one another and no recommendation should be followed independent of the others. This report has been prepared to assist the Site/Civil Engineer, Architect, and Structural Engineer in their design. Any changes in structures, locations, or loading information should be brought to our attention so that we may determine how such changes may affect our recommendations. Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology, D.P.C. cannot assume responsibility for the use of this report to generate foundation design other than at the specific site addressed in this report.

We thank you for allowing us to assist you on this project. If you have any questions regarding this report, please call.

Sincerely,
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

Nicholas Starzynski, P.E.
Senior Project Manager



Ronald D. Boyer, P.E.
Principal / Vice President

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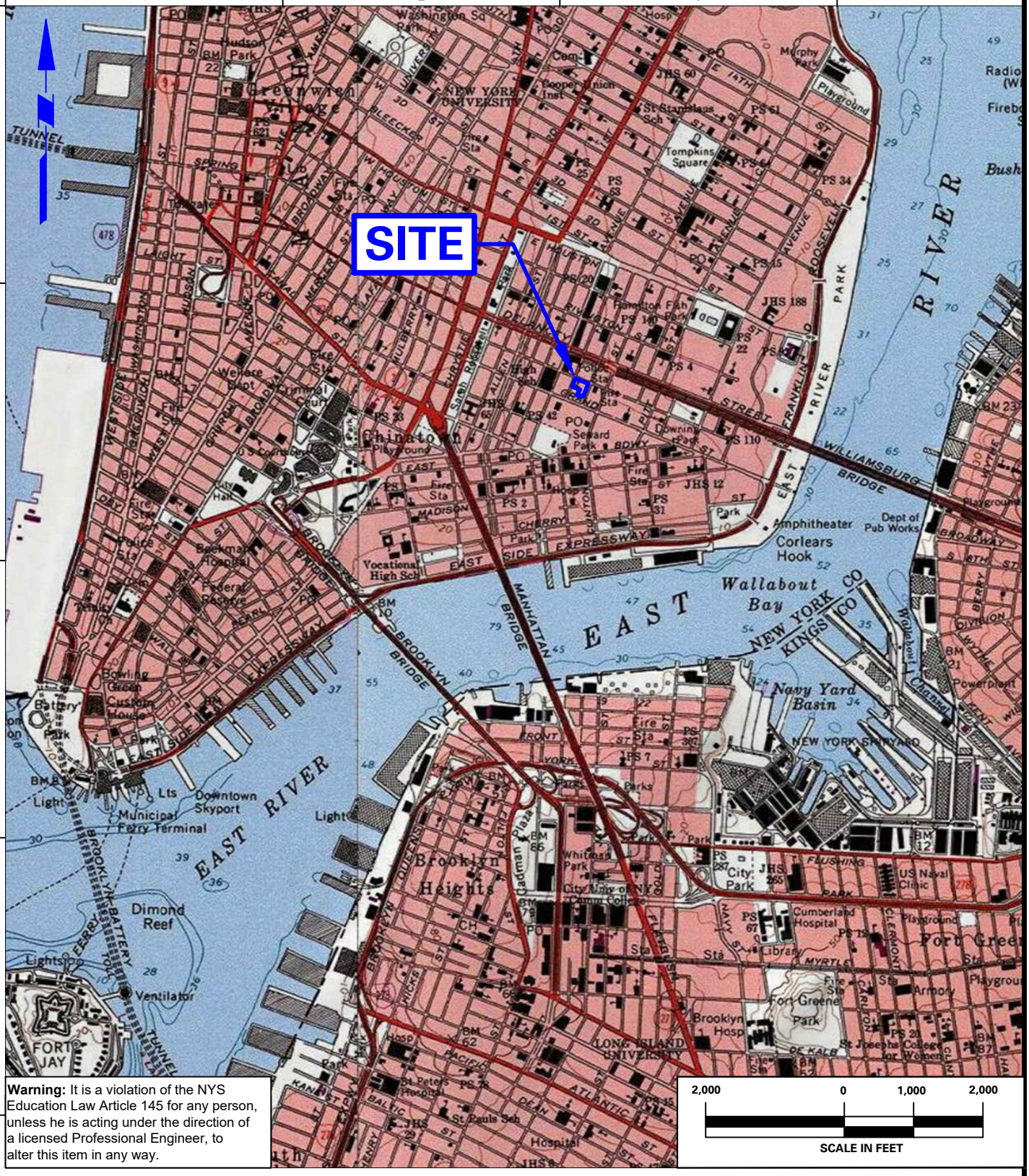
FIGURES



Warning: It is a violation of the NYS Education Law Article 145 for any person, unless he is acting under the direction of a licensed Professional Engineer, to alter this item in any way.

REFERENCE: CENTRAL PARK, N.Y.-N.J. USGS QUAD MAP, 1966 (PHOTOREVISED 1979).

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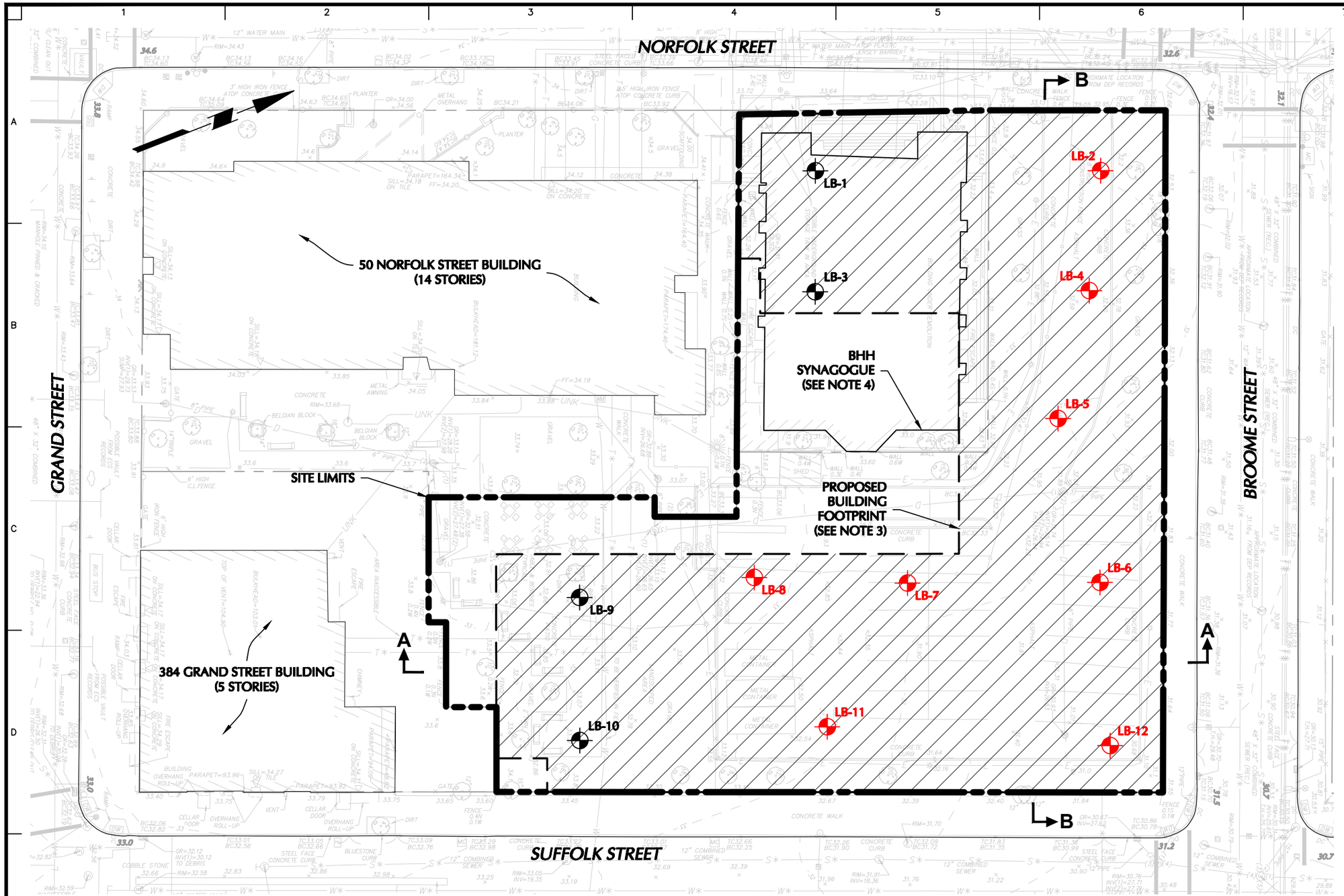
NJ Certificate of Authorization No.24GA27996400

Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	SITE LOCATION MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	1

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\FG01-100646801-BI101-0101.dwg Date: 4/26/2019 Time: 9:31 User: tfoster Style Table: Langan.stb Layout: ANSIA-BP



LEGEND:

LB-2 — GEOTECHNICAL BORING LOCATION

LB-1 — PROPOSED GEOTECHNICAL BORING LOCATION, INACCESSIBLE DURING FIELD SUBSURFACE INVESTIGATION, TO BE DRILLED AT A LATER DATE

NOTES:

1. BASE FIGURE REPRODUCED FROM A DRAWING TITLED "TOPOGRAPHIC, BOUNDARY, & UTILITY SURVEY" DATED 29 DECEMBER 2017 PREPARED BY LANGAN.
2. ALL BORING LOCATIONS ARE APPROXIMATE.
3. PROPOSED BUILDING FOOTPRINT REFERENCED FROM AN 8 JUNE 2018 GROUND FLOOR PLAN DRAWING A-102.00 PREPARED BY DATTNER ARCHITECTS.
4. THE BHH SYNAGOGUE IS TO BE STABILIZED PER THE EMERGENCY STABILIZATION DRAWINGS, REVISED 28 FEBRUARY 2019 PREPARED BY ANCORA ENGINEERING.
5. BORINGS LB-2, LB-4 THROUGH LB-8, LB-11, AND LB-12 WERE DRILLED BY CRAIG GEOTECHNICAL DRILLING INC. BETWEEN 08 FEBRUARY AND 14 FEBRUARY 2019 UNDER THE FULL-TIME SPECIAL INSPECTION OF LANGAN.
6. SEE APPENDIX D FOR BORING LOGS AND FIGURE 7 FOR SUBSURFACE PROFILES A-A AND B-B.

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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SCALE IN FEET

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Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346, LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	BORING LOCATION PLAN
Project No.	100646801
Date	04/26/2019
Drawn By	AC
Checked By	NS
Drawing No.	2

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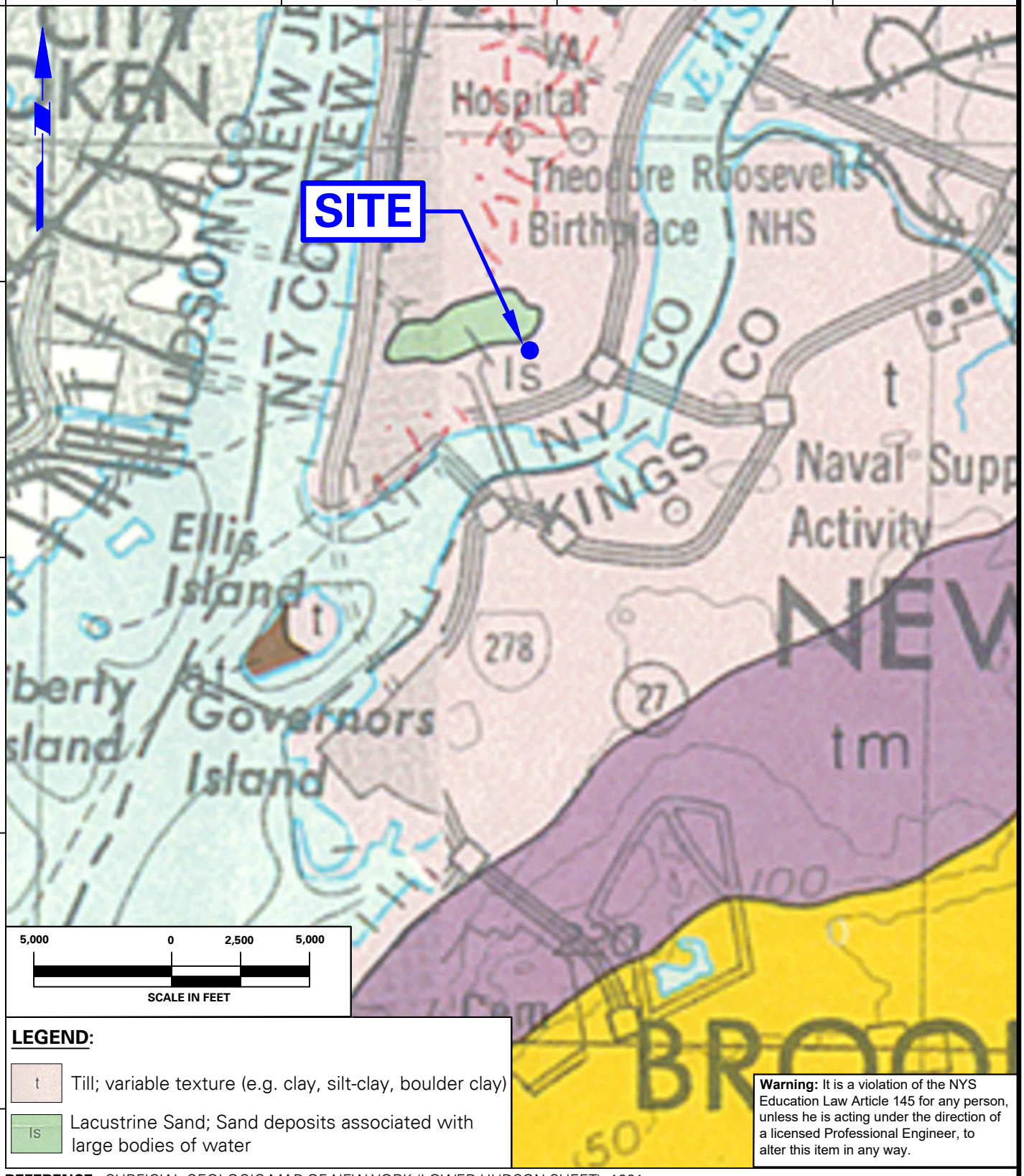

LEGEND:

- t — Till; variable texture (e.g. clay, silt-clay, boulder clay)
- ls — Lacustrine Sand; Sand deposits associated with large bodies of water

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REFERENCE: SURFICIAL GEOLOGIC MAP OF NEW YORK (LOWER HUDSON SHEET), 1991.

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Project
PROPOSED GO BROOME DEVELOPMENT
BLOCK No. 346 LOT Nos. 37 & 75
NEW YORK NEW YORK

Drawing Title
SURFICIAL GEOLOGY MAP

Project No.	Drawing No.
100646801	3
Date: 04/26/2019	
Drawn By: JM	
Checked By: NS	

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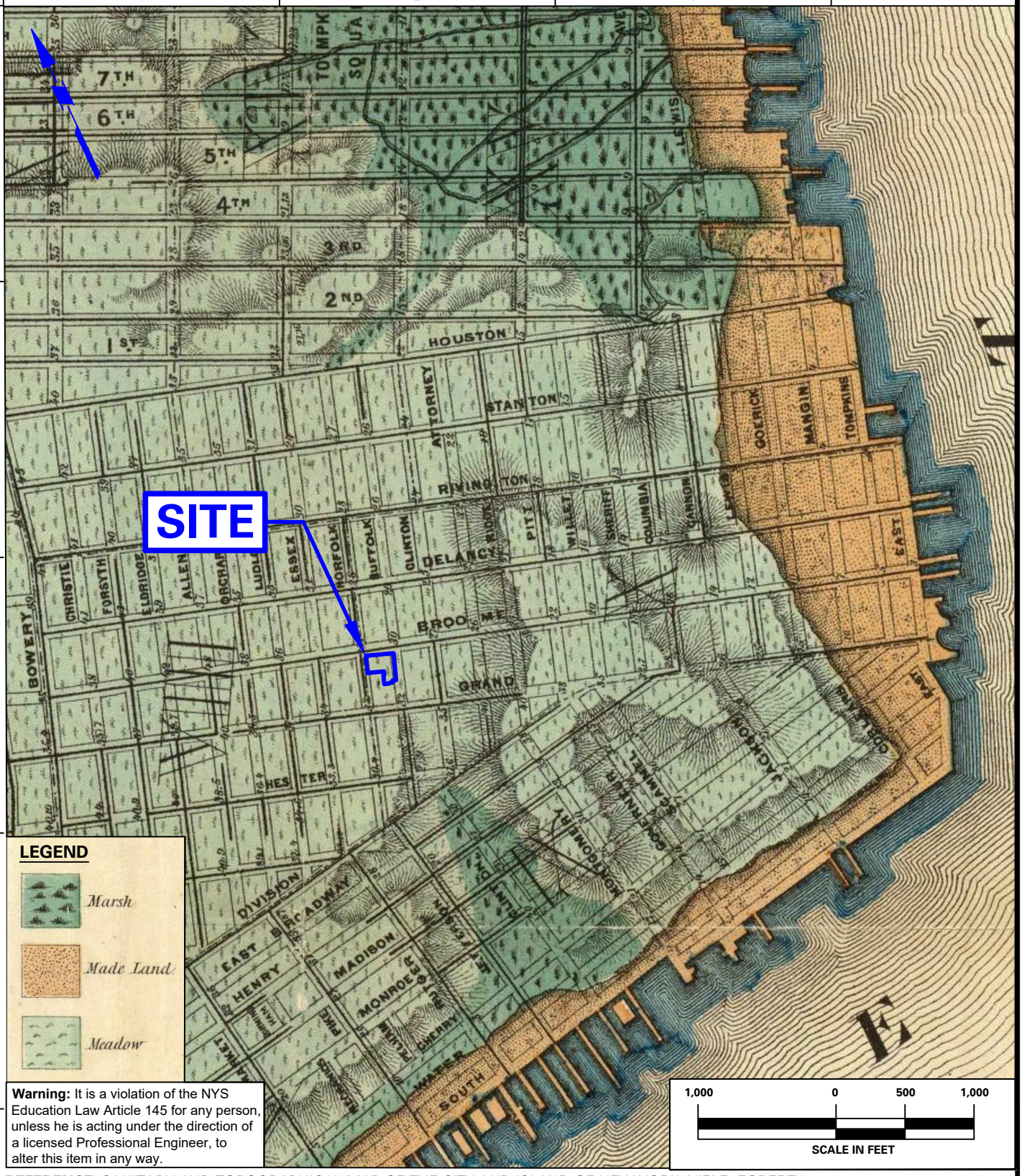

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REFERENCE: SANITARY AND TOPOGRAPHICAL MAP OF THE CITY AND ISLAND OF NEW YORK; VIELE, EGBERT L., 1865.

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Project
PROPOSED GO BROOME DEVELOPMENT
BLOCK No. 346 LOT Nos. 37 & 75
NEW YORK NEW YORK

Drawing Title
HISTORICAL SANITARY AND TOPOGRAPHIC MAP

Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS

Drawing No. **4**

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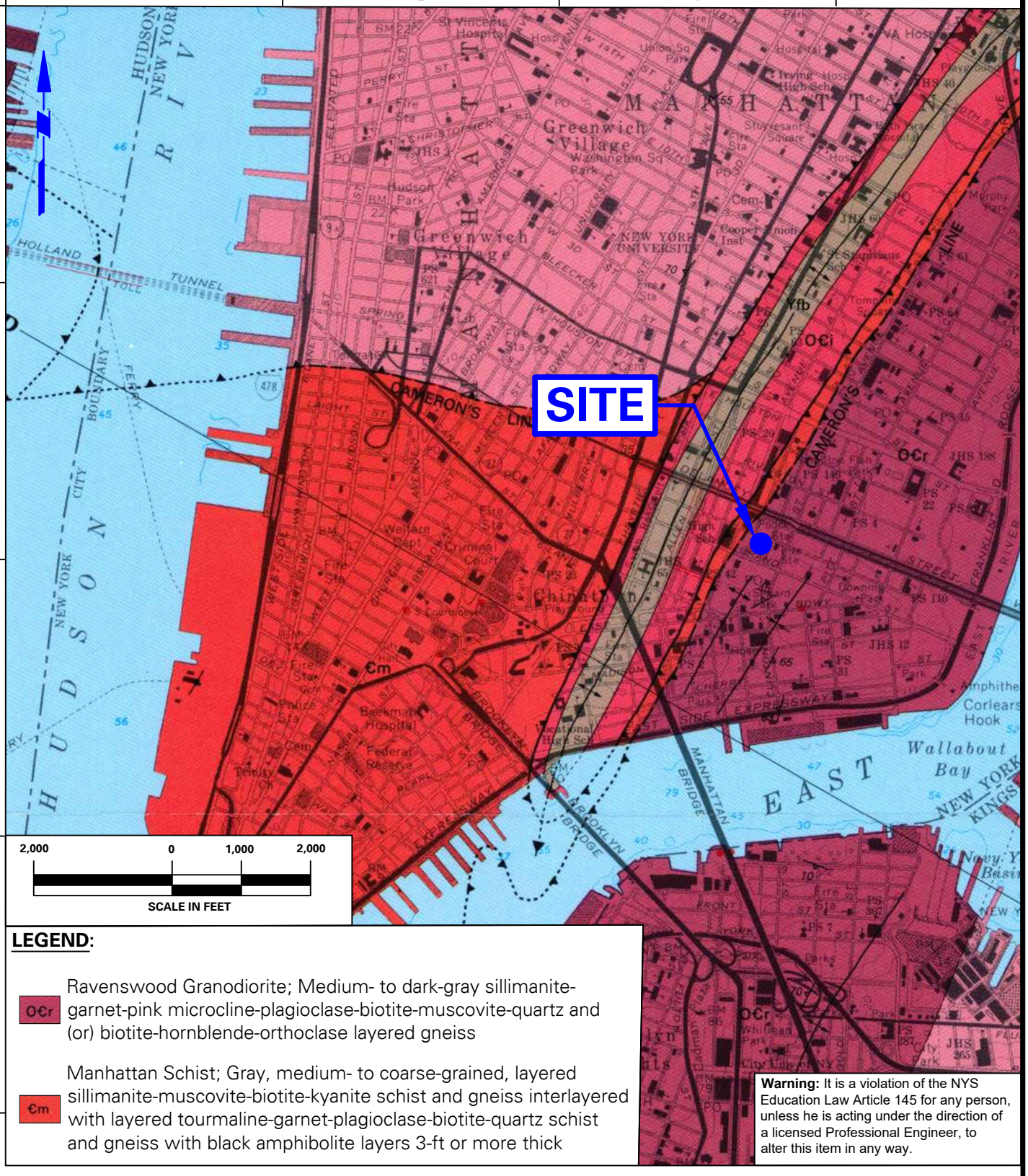

LEGEND:

OCr — Ravenswood Granodiorite; Medium- to dark-gray sillimanite-garnet-pink microcline-plagioclase-biotite-muscovite-quartz and (or) biotite-hornblende-orthoclase layered gneiss

Cm — Manhattan Schist; Gray, medium- to coarse-grained, layered sillimanite-muscovite-biotite-kyanite schist and gneiss interlayered with layered tourmaline-garnet-plagioclase-biotite-quartz schist and gneiss with black amphibolite layers 3-ft or more thick

REFERENCE: BEDROCK AND ENGINEERING MAPS OF NEW YORK COUNTY BY CHARLES A. BASKERVILLE, 1994.

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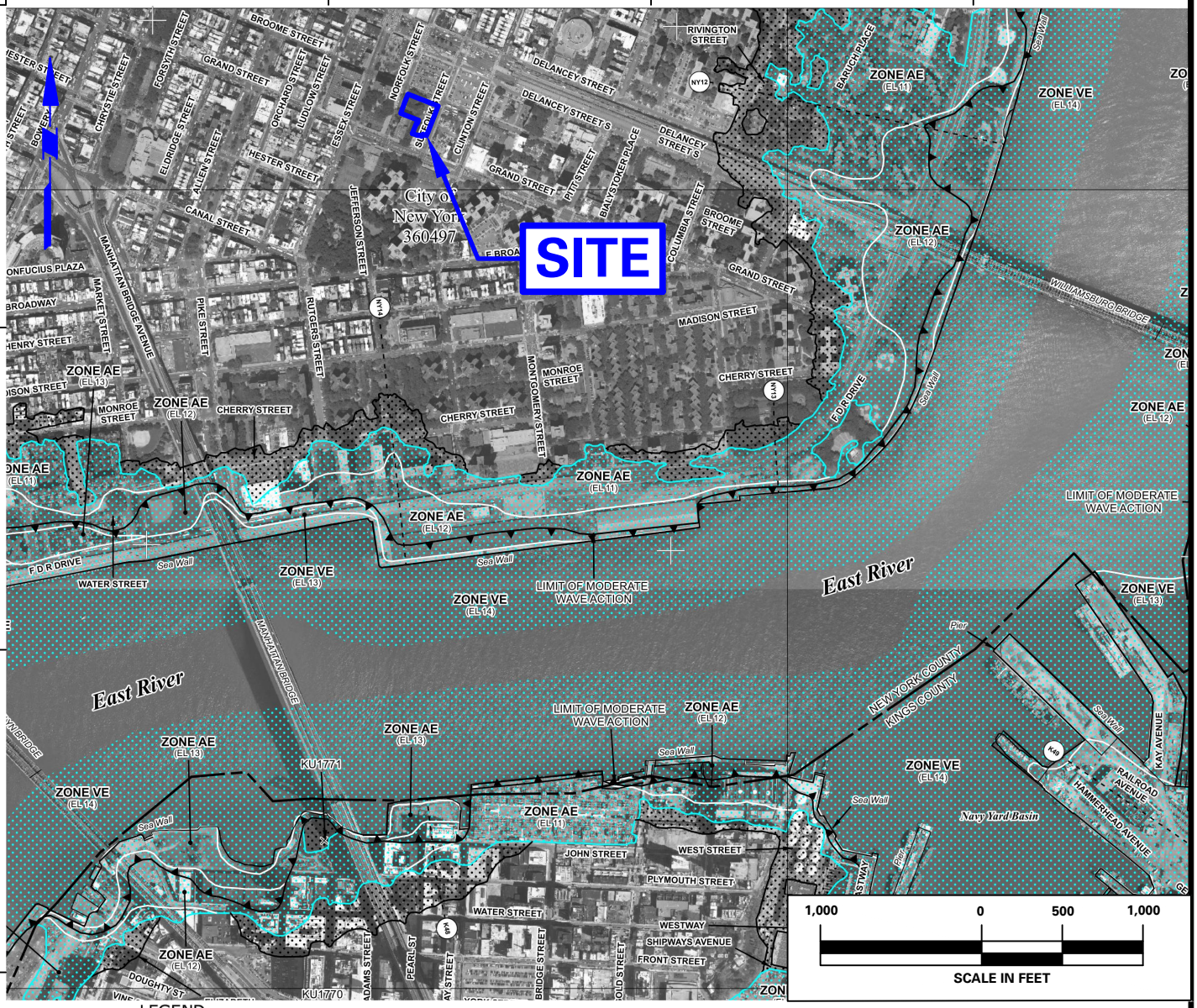
Project
PROPOSED GO BROOME DEVELOPMENT
BLOCK No. 346 LOT Nos. 37 & 75
NEW YORK NEW YORK

Drawing Title
BEDROCK GEOLOGY MAP

Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS

Drawing No. 5

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data - 100646801\SheetFiles\Geotechnical Investigation and Report\FG05-100646801-BI101-0101.dwg Date: 4/26/2019 Time: 09:44 User: tfoster Style Table: Langan.stb Layout: ANSIA-BP



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Limit of Moderate Wave Action
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- Culvert, Flume, Penstock or Aqueduct
- Road or Railroad Bridge
- Footbridge
- 87°07'45", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 2476000mN — 1000-meter Universal Transverse Mercator grid values, zone 18
- 600000 FT — 5000-foot grid values: New York State Plane coordinate system, Long Island zone (FIPSZONE 3104), Lambert Conformal Conic projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

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REFERENCE: FEMA FLOOD INSURANCE RATE MAP, PANEL NUMBER 203, MAP NUMBER 3604970203G, PRELIMINARY DECEMBER 5, 2013.

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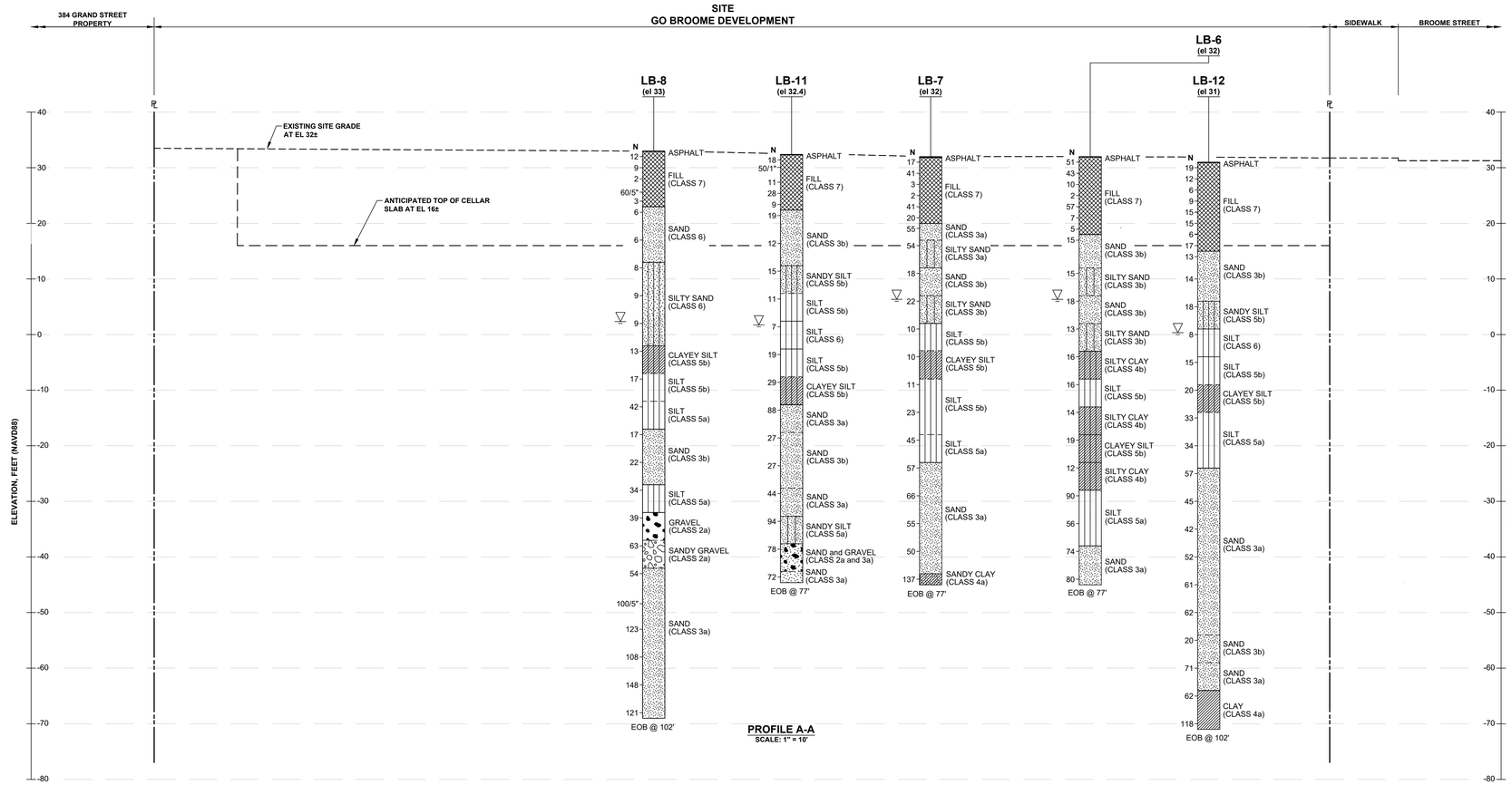
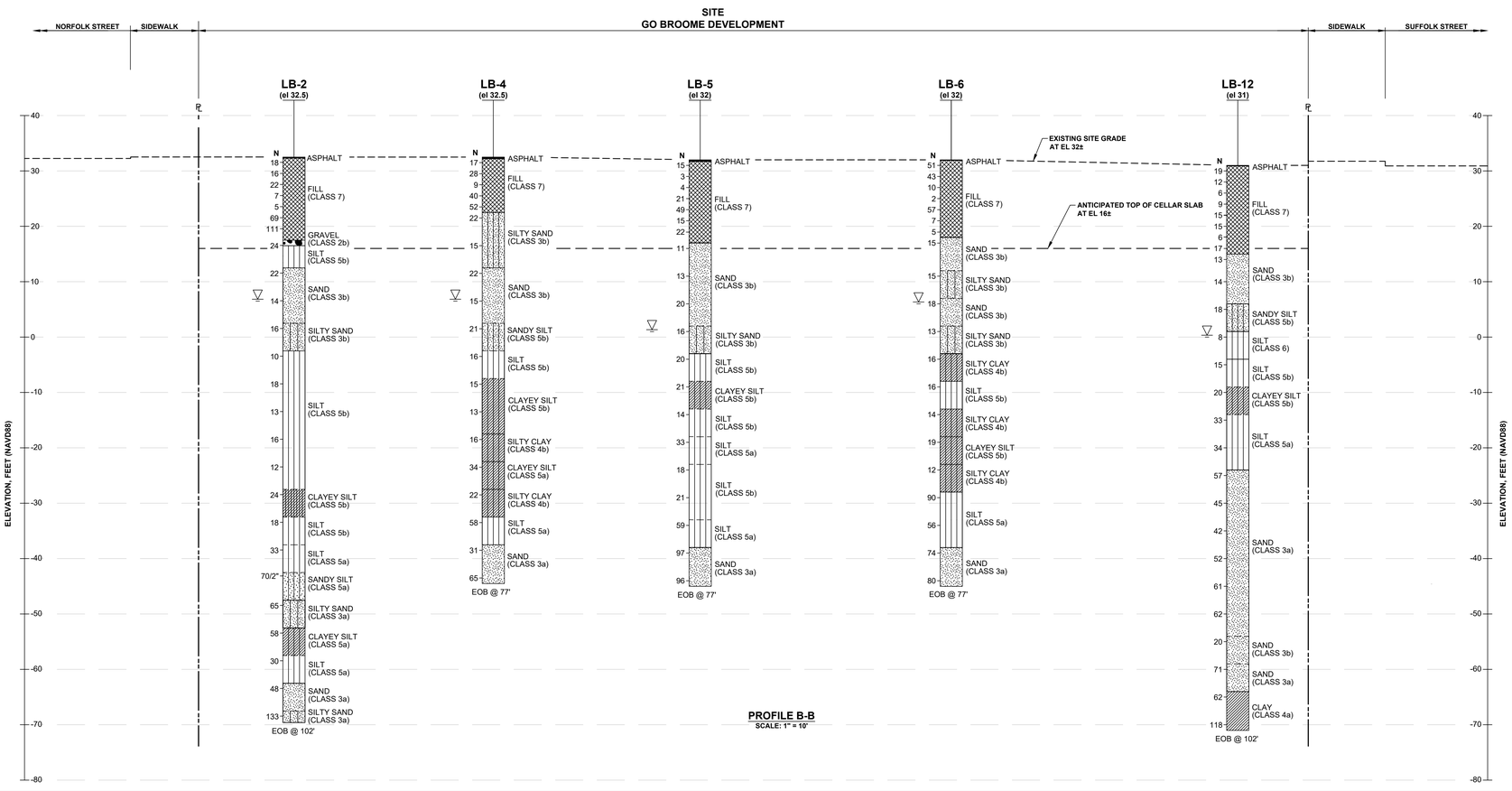
NJ Certificate of Authorization No.24GA27996400

Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	FLOOD MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	6

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data - 100646801\SheetFiles\Geotechnical Investigation and Report\FG06-100646801-BI101-0101.dwg Date: 4/26/2019 Time: 09:46 User: tfoster Style Table: Langan.stb Layout: ANSIA-BP





LEGEND:

ASPHALT · FILL · SAND · SILTY SAND · SILT · SANDY SILT · GRAVEL · CLAY · GRAVELLY SAND · CLAYEY SILT · SILTY CLAY · SANDY CLAY

LB BORING IDENTIFICATION

(el XX) INFERRED GROUND SURFACE ELEVATION AT THE TIME OF BORING

(CLASS XX) 2014 NYC BUILDING CODE CLASSIFICATION

N STANDARD PENETRATION RESISTANCE; NUMBER OF BLOWS OF A 140-LB. HAMMER FREE FALLING 30 INCHES TO DRIVE A 2-INCH-O.D. SPLIT SPOON SAMPLER 12 INCHES AFTER 6 INCHES OF INITIAL PENETRATION. A SAFETY HAMMER WAS USED FOR ALL BORINGS EXCEPT LB-8, WHERE AN AUTOMATIC HAMMER WAS USED BETWEEN 0' AND 75' BELOW GROUND SURFACE (SEE BORING LOGS IN APPENDIX C).

GROUNDWATER LEVEL OBSERVED DURING DRILLING

EOB END OF BORING

NOTES:

1. THE APPROXIMATE EXTENTS OF THE PROPOSED BUILDING FOOTPRINT ARE BASED ON AN 8 JUNE 2018 GROUND FLOOR PLAN A-102.00 PREPARED BY DATTNER ARCHITECTS.
2. THE EXISTING SITE GRADE ELEVATIONS ARE BASED ON A 29 DECEMBER 2017 TOPOGRAPHIC, BOUNDARY, AND UTILITY SURVEY DRAWING PREPARED BY LANGAN.
3. THESE PROFILES REPRESENT GENERALIZED SOIL CROSS SECTIONS INTERPRETED FROM WIDELY SPACED BORINGS. SOIL, ROCK, AND GROUNDWATER MAY VARY IN TYPE, LOCATION, ELEVATION, AND ENVIRONMENTAL AND ENGINEERING PROPERTIES BETWEEN POINTS OF EXPLORATION. VARIATIONS IN SUBSURFACE CONDITIONS SHOULD BE EXPECTED BETWEEN BORINGS.
4. BORINGS LB-2, LB-4 THROUGH LB-8, LB-11, AND LB-12 WERE PERFORMED BETWEEN 8 AND 14 FEBRUARY 2019 BY CRAIG GEOTECHNICAL DRILLING CO., UNDER THE FULL-TIME SPECIAL INSPECTION OF LANGAN.
5. ALL BORING LOCATIONS ARE APPROXIMATE.
6. ALL ELEVATIONS ARE APPROXIMATE AND ARE IN REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) UNLESS OTHERWISE NOTED.
7. SEE APPENDIX D FOR BORING LOGS.

10 0 10
SCALE IN FEET

WARNING:
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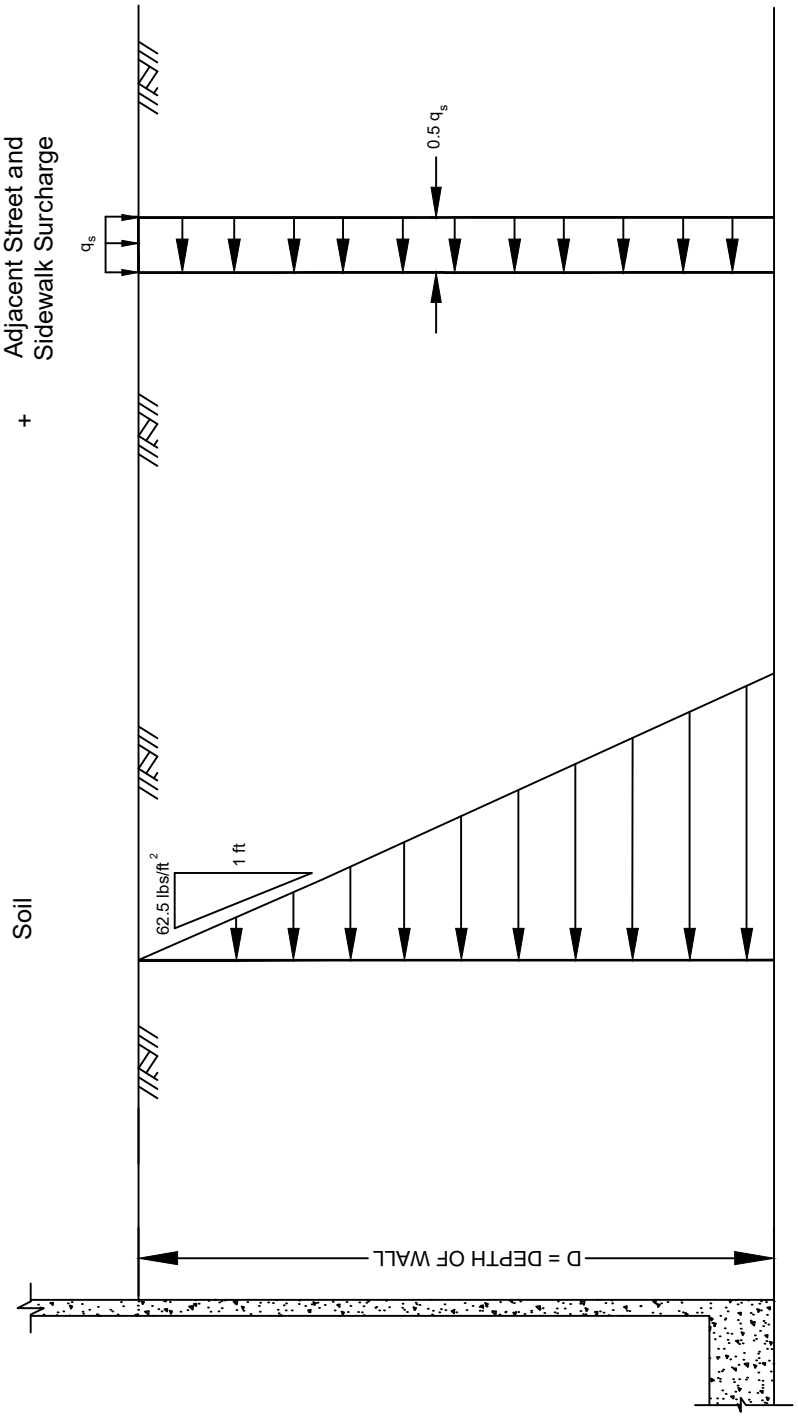
NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996400

Project
PROPOSED GO BROOME DEVELOPMENT
BLOCK No. 346, LOT Nos. 37 & 75
NEW YORK NEW YORK

Drawing Title
SUBSURFACE PROFILES A-A & B-B

Project No.	Drawing No.
100646801	7
Date: 04/26/2019	
Drawn By: JM	
Checked By: NS	

PROJECT NO. 100646801



NOTES:

1. Diagrams shown are a simplified representation of various lateral loads for use in the design of below-grade walls.
2. Lateral pressure diagrams for soil are based on a soil total unit weight of 125 pcf, and on lateral earth pressure coefficient (Ko) of 0.5.
3. Groundwater was observed be at approximately 26.5 feet to 29 feet below existing site grade, or at approximate el 2.5 to el 7.0, as measured in temporary ground water level monitoring wells installed during the January 2019 Langan Phase II Environmental Investigation at this site. Based on the measured depth of groundwater relative to the proposed construction, hydrostatic pressure due to groundwater need not be considered for design of below-grade walls. We recommend that below grade walls should be checked against a temporary water level at street grades due to the potential for a water main break.

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Project
PROPOSED GO BROOME DEVELOPMENT
BLOCK No. 346 LOT Nos. 37 & 75
NEW YORK NEW YORK

Drawing Title
LATERAL EARTH PRESSURE DIAGRAM

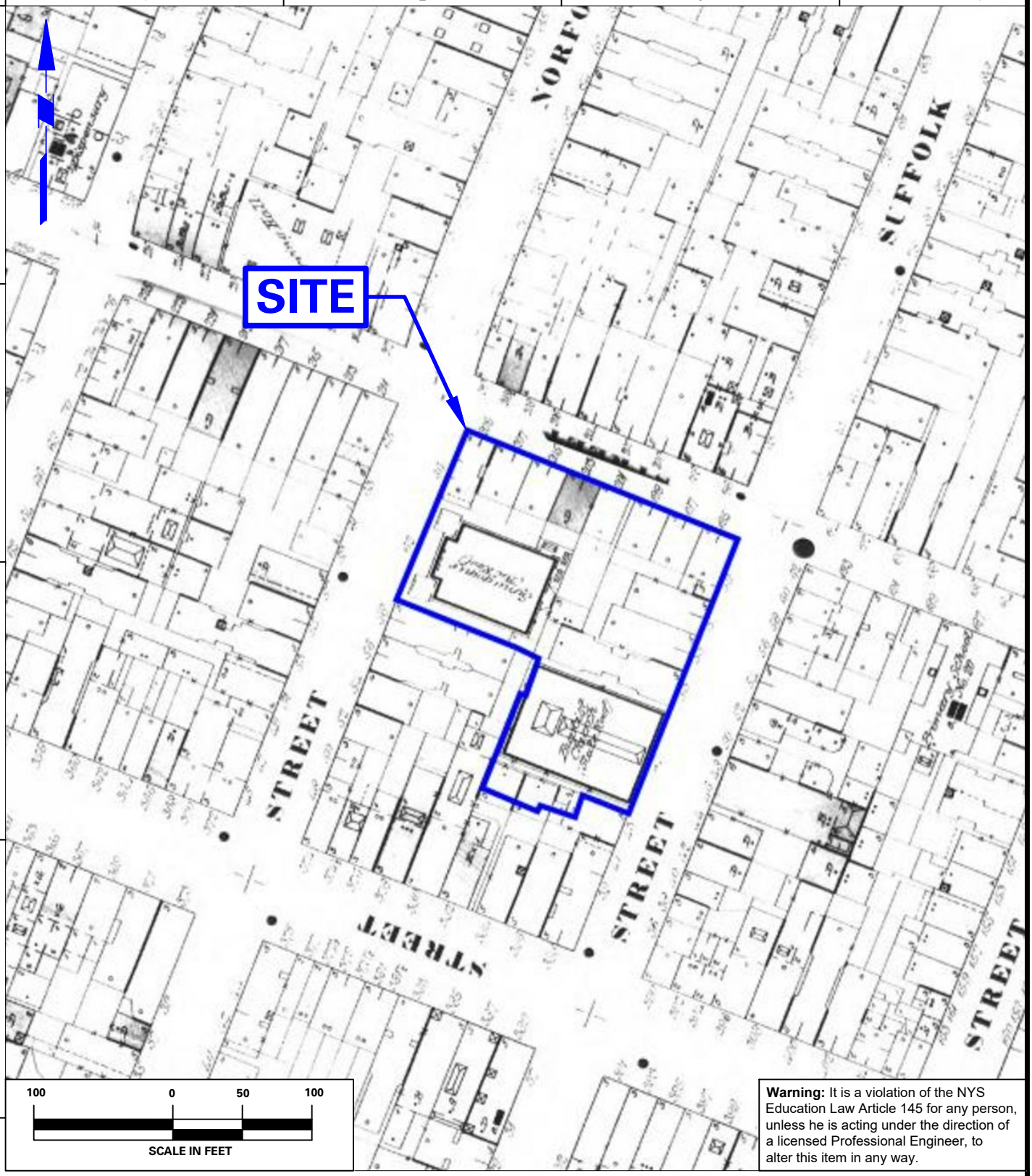
Project No.	100646801
Date	04/26/2019
Drawn By	AC
Checked By	NS

Drawing No. **8**

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\FG08–100646801–BI101–0101.dwg Date: 4/26/2019 Time: 09:48 User: tfoster Style Table: Langan.stb Layout: FIG 8

APPENDIX A

Historical Sanborn Maps



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REFERENCE: EDR SANBORN MAP RESEARCH RESULTS, INQUIRY #4864722.3, DATED 28 FEBRUARY 2017.

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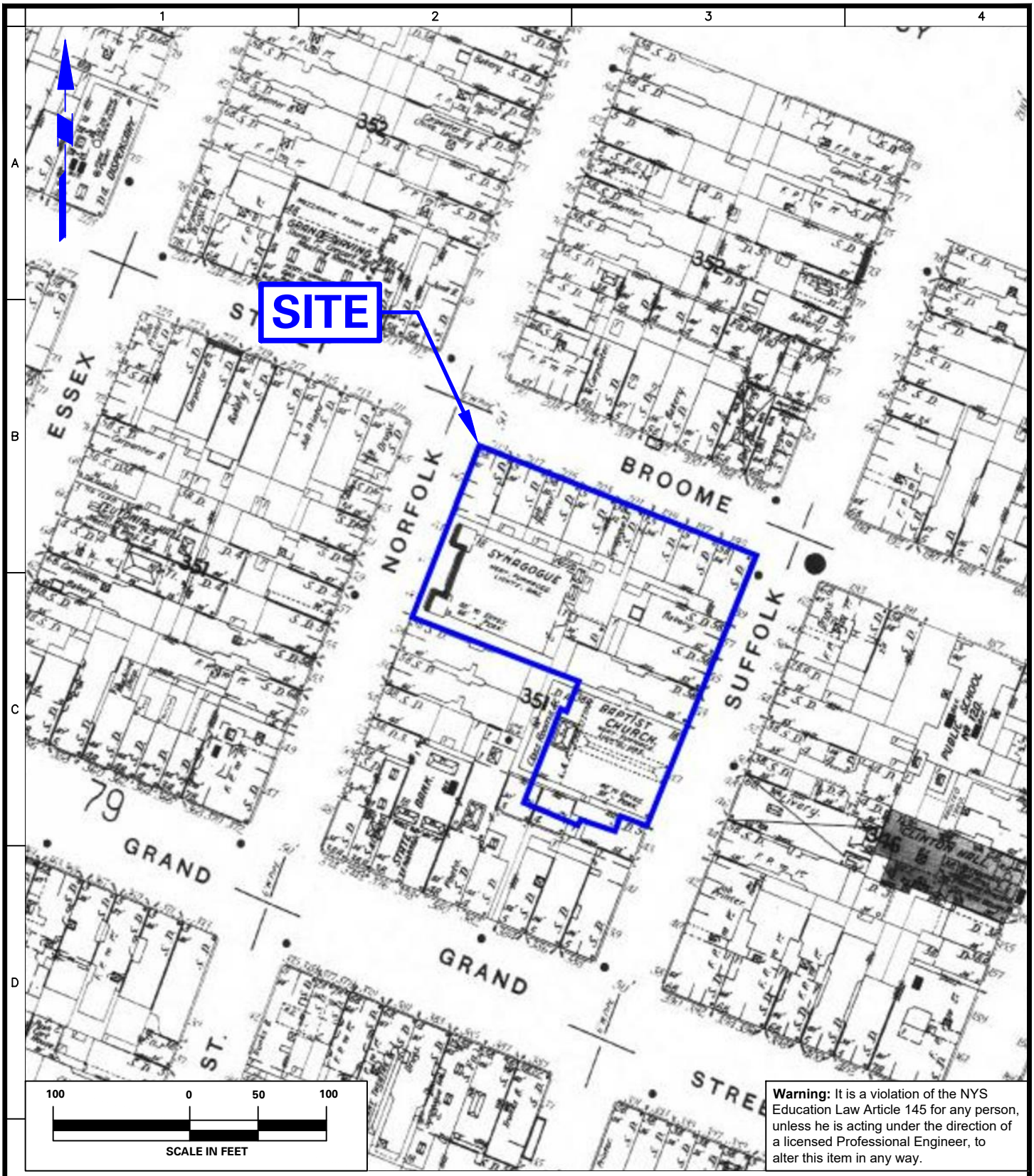
Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	1894 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-1

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:52 User: tfoster Style Table: Langan.stb Layout: 1894



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Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1905 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-2

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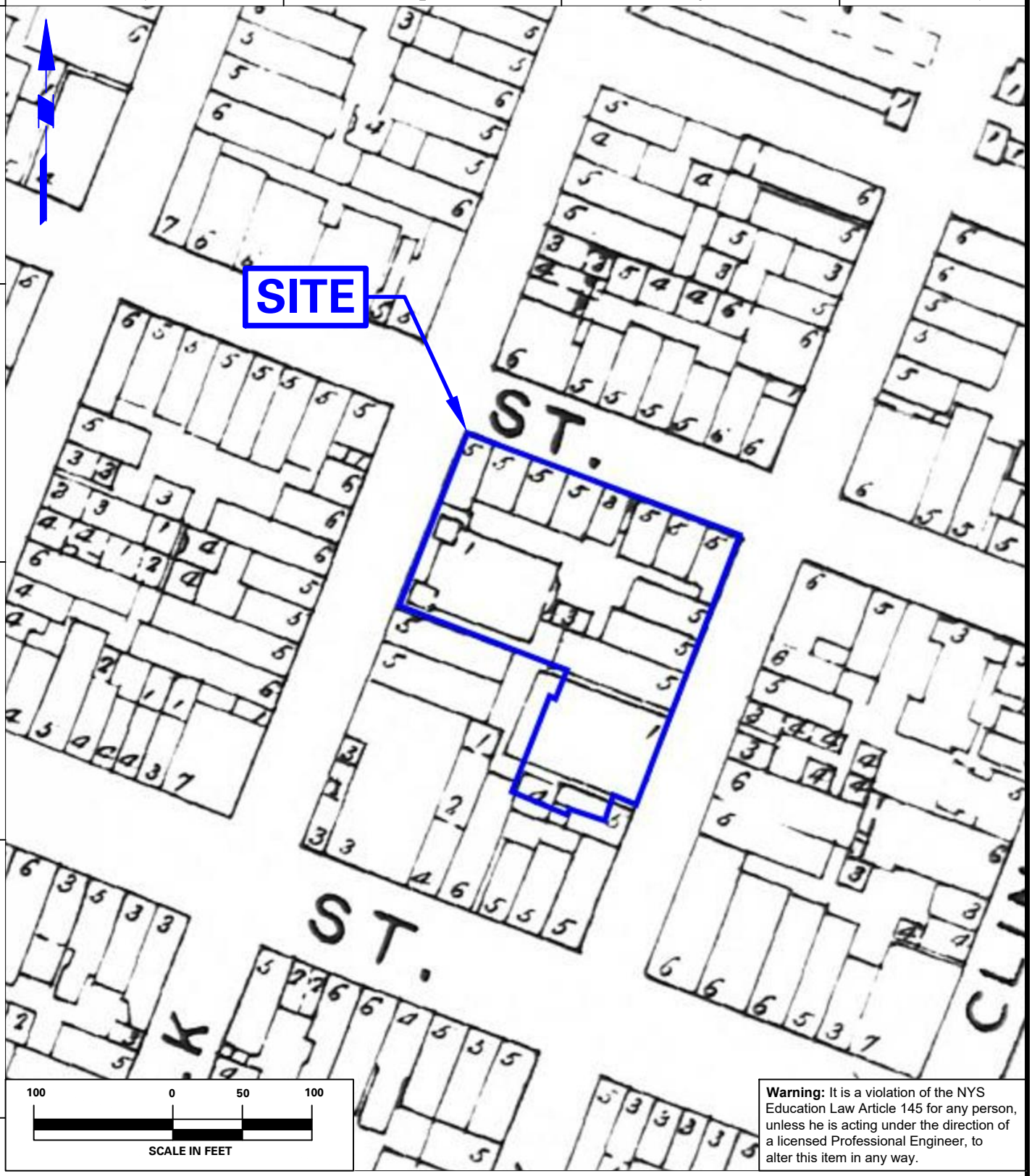

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Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1913 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-3

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Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1922 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-4

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:53 User: tfoster Style Table: Langan.stb Layout: 1922

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Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1950 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-5

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:53 User: tfoster Style Table: Langan.stb Layout: 1950

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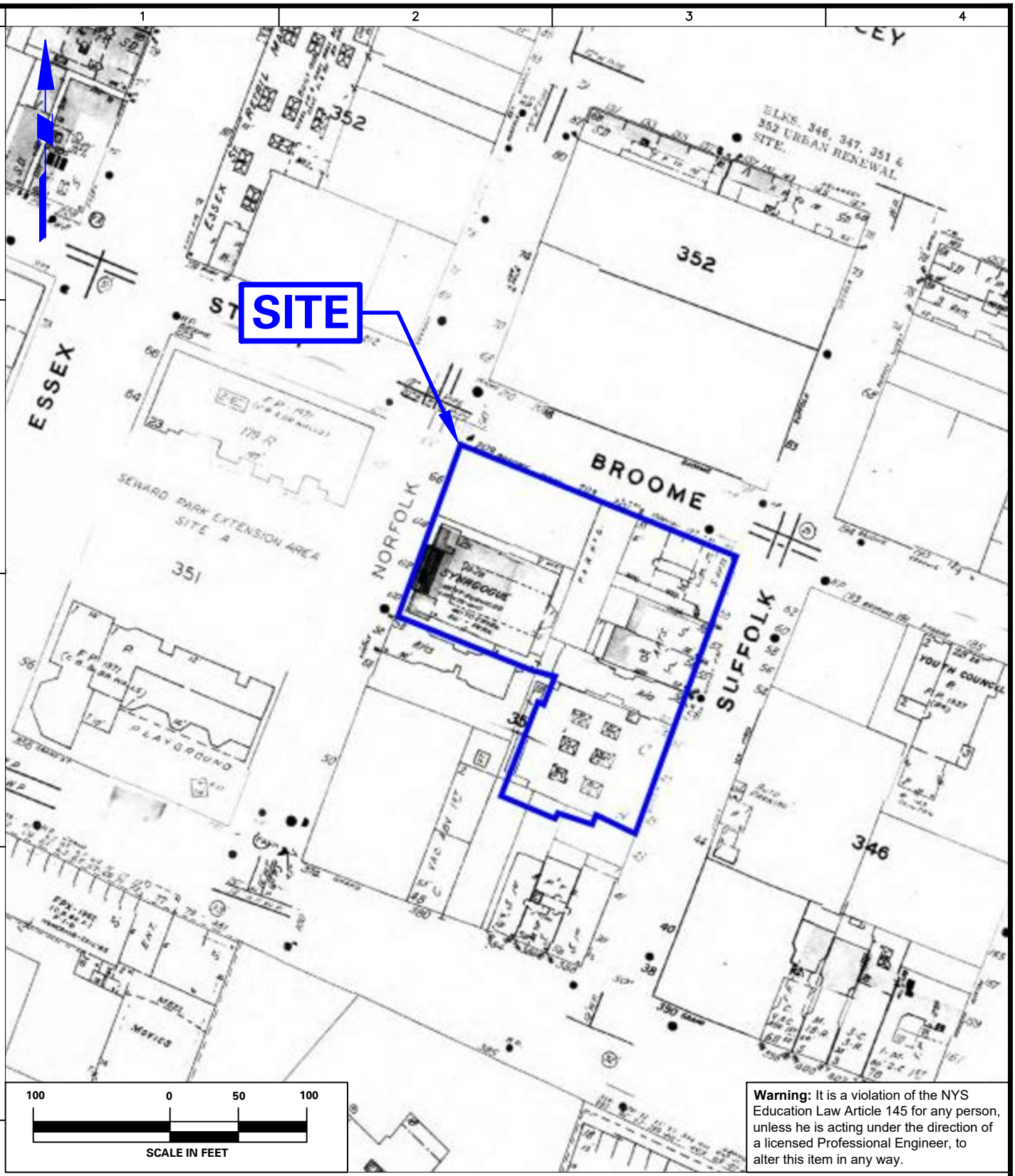
Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	1968 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-6

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:53 User: tfoster Style Table: Langan.stb Layout: 1968



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REFERENCE: EDR SANBORN MAP RESEARCH RESULTS, INQUIRY #4864722.3, DATED 28 FEBRUARY 2017.

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Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1976 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-7

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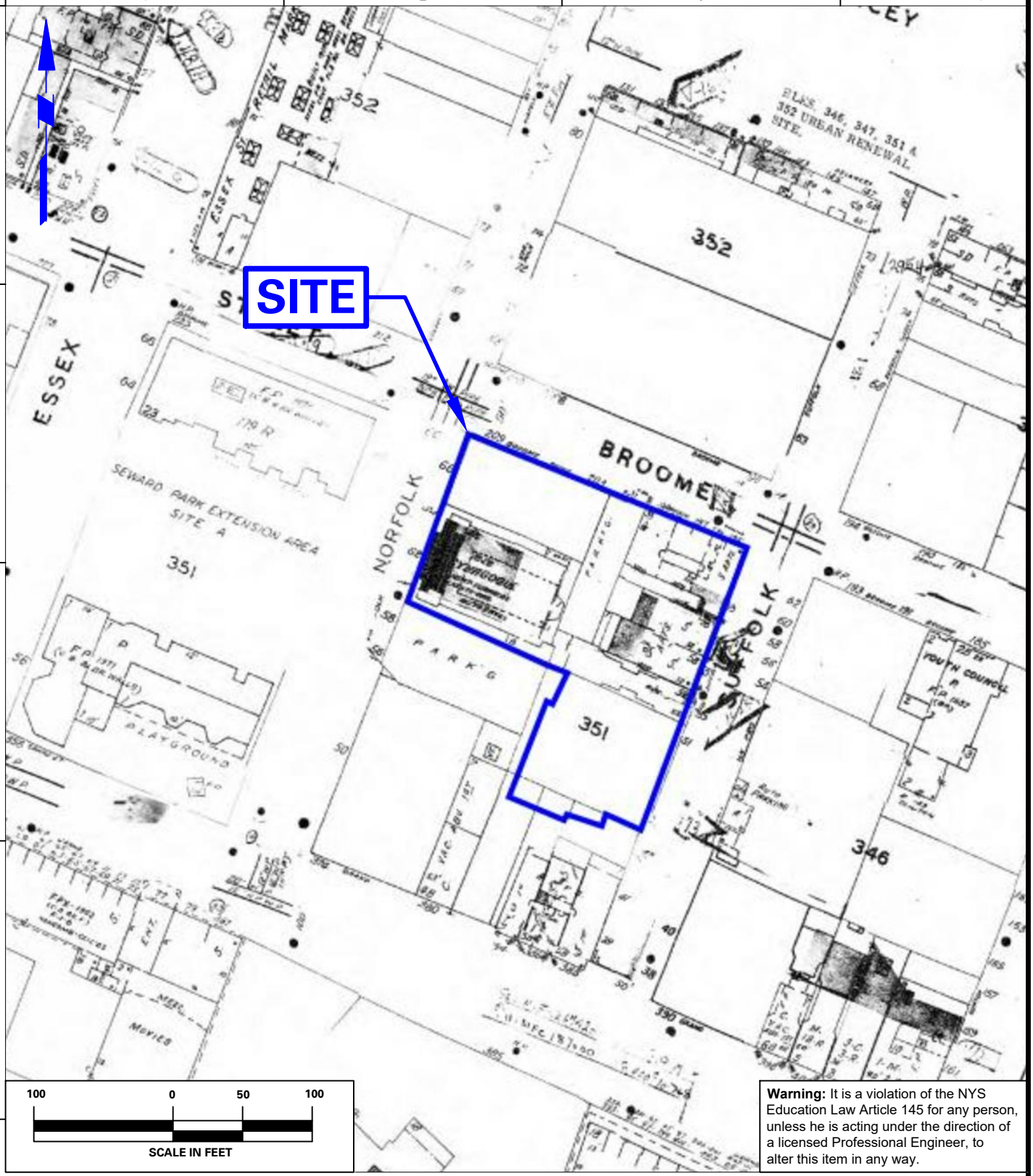

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REFERENCE: EDR SANBORN MAP RESEARCH RESULTS, INQUIRY #4864722.3, DATED 28 FEBRUARY 2017.

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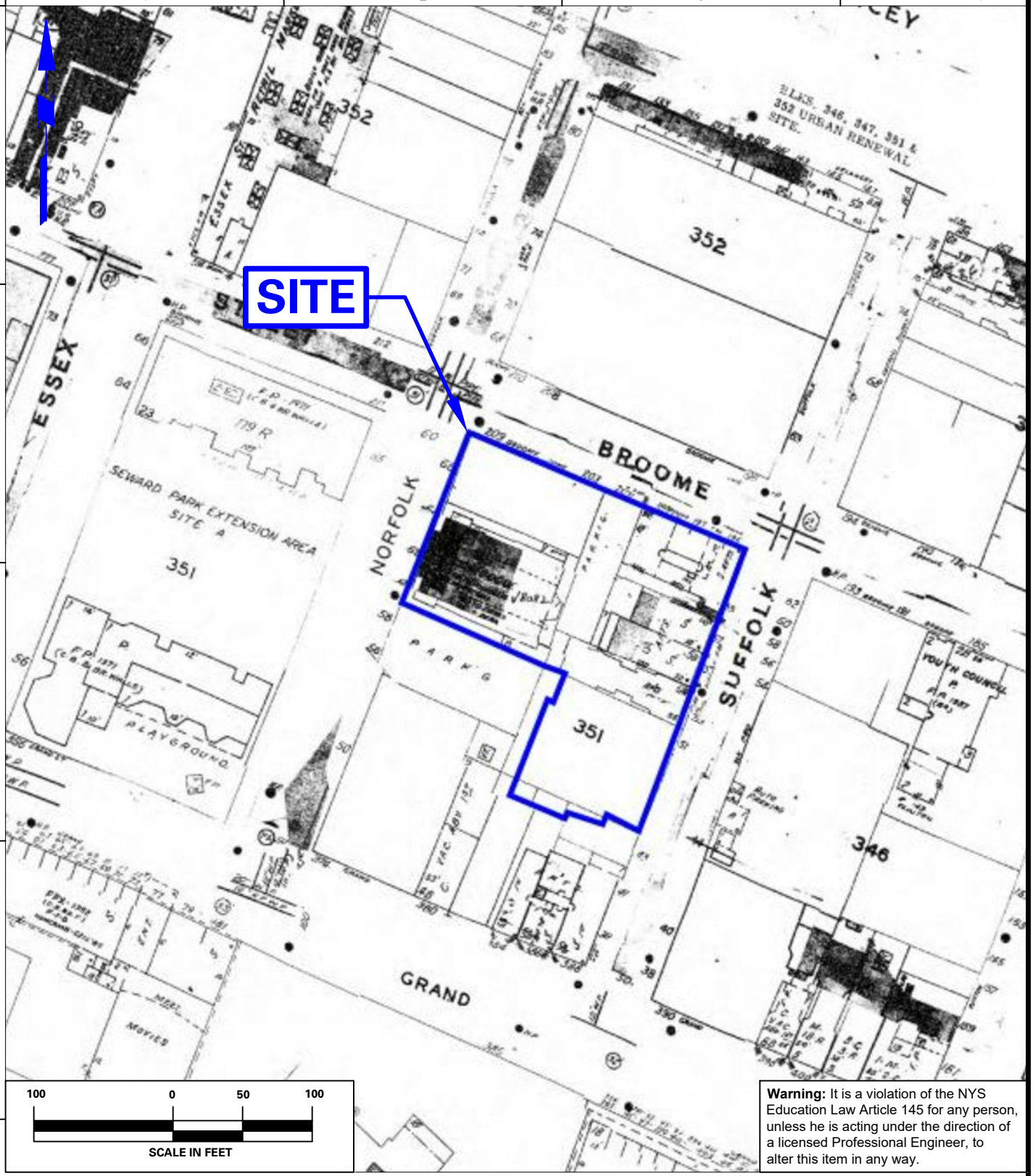
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1977 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-8

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:54 User: tfoster Style Table: Langan.stb Layout: 1977



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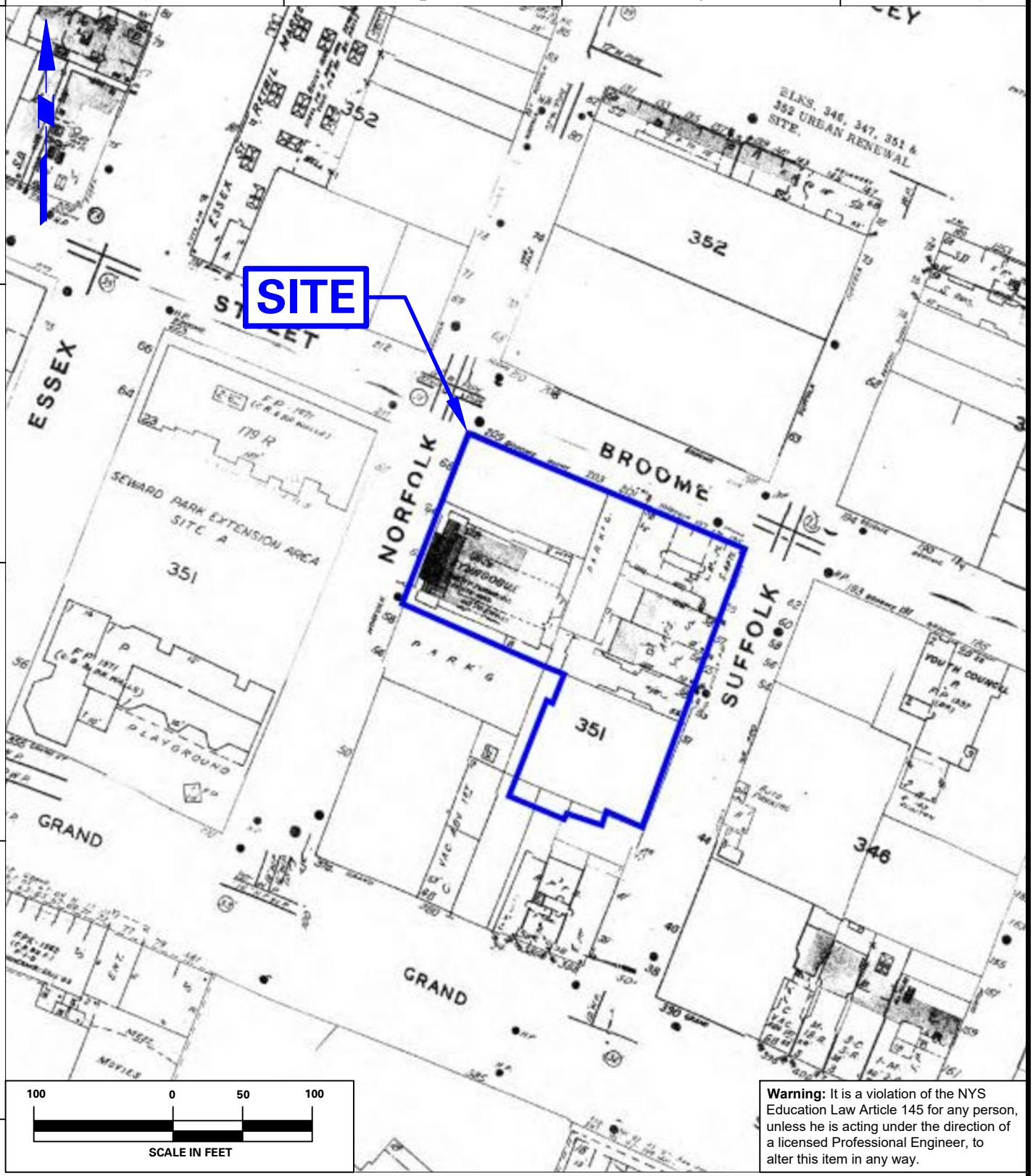
Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	1978 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-9

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:54 User: tfoster Style Table: Langan.stb Layout: 1978



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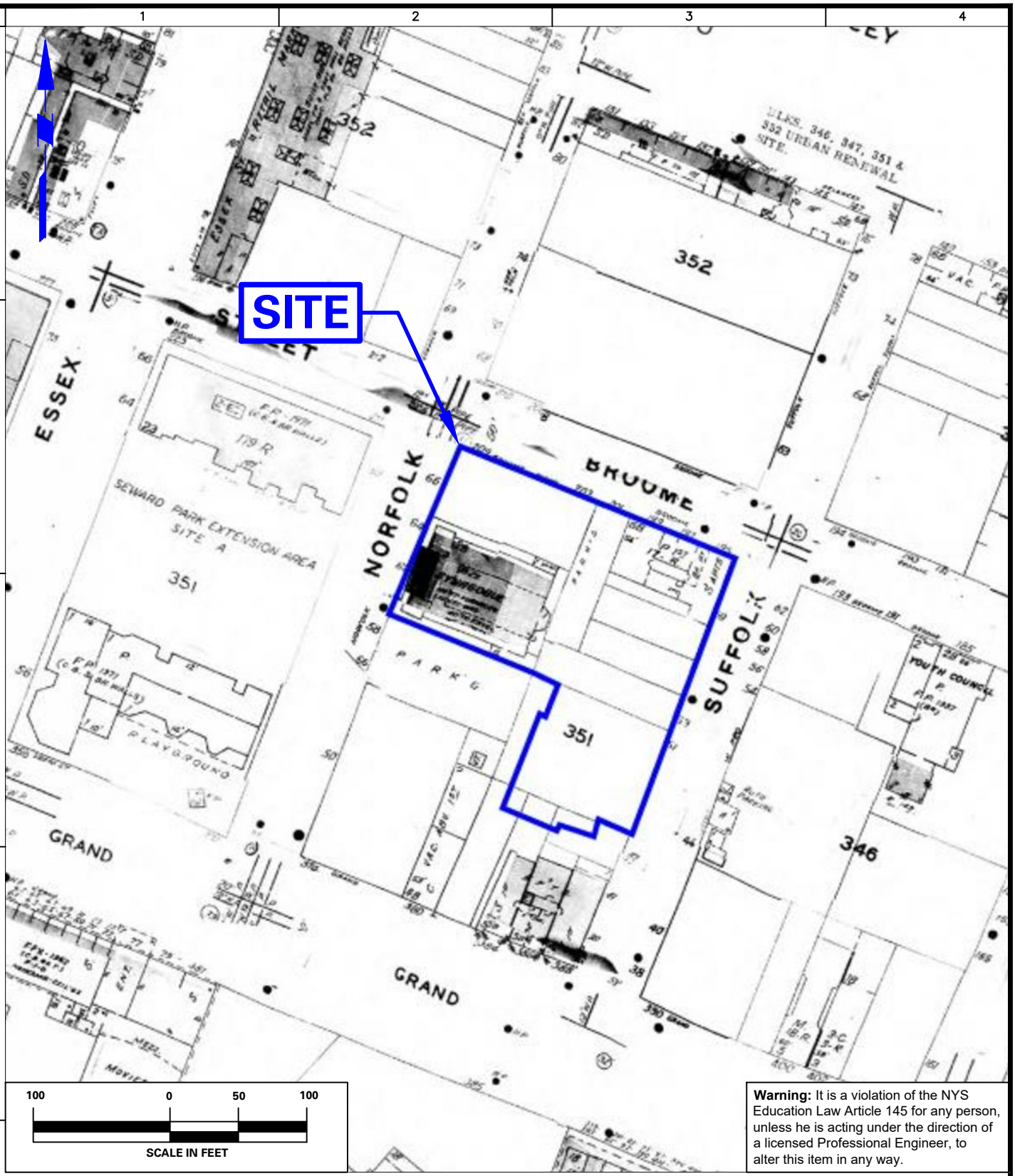
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1979 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-10

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:54 User: tfoster Style Table: Langan.stb Layout: 1979



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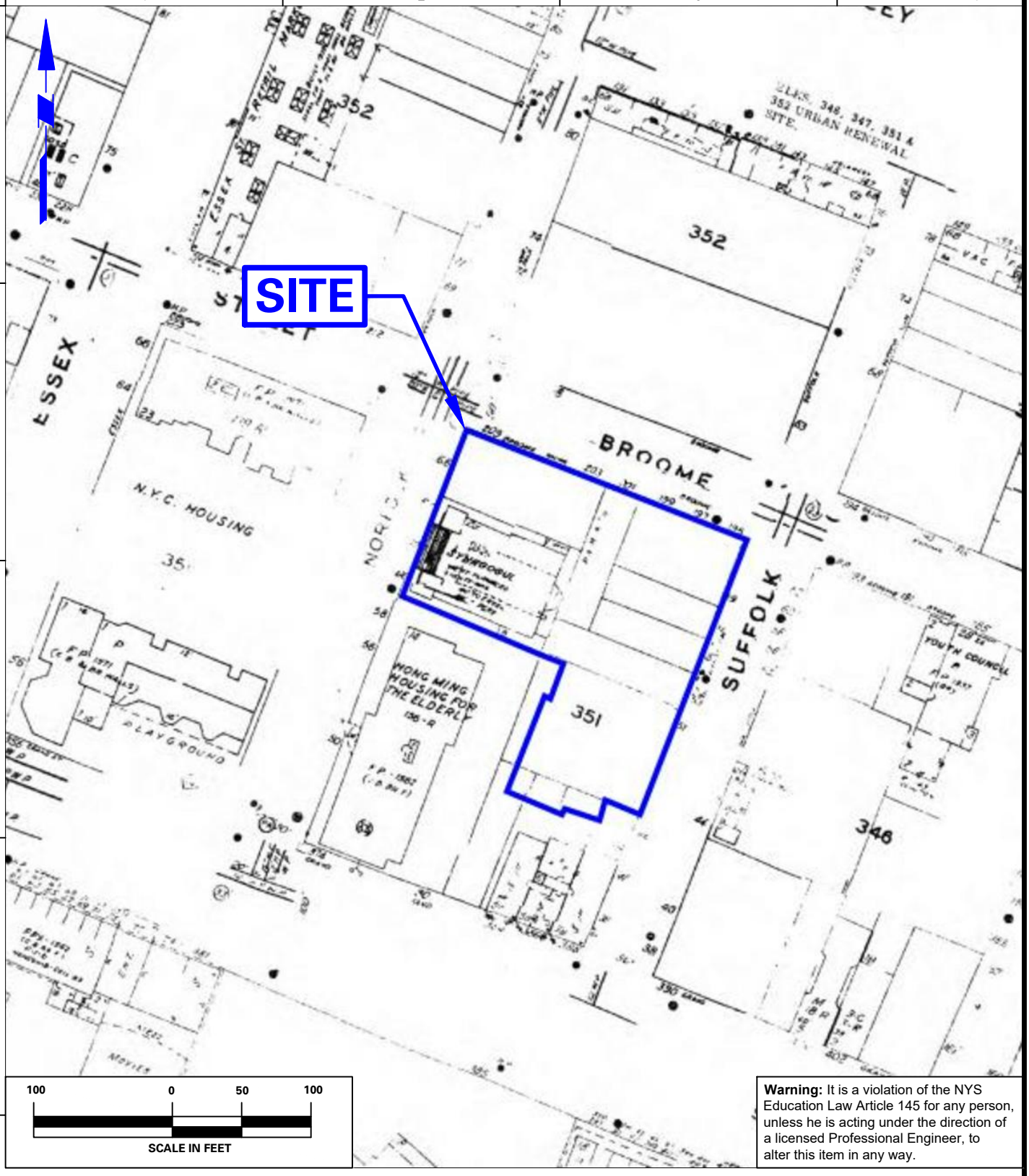
Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	1980 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-11

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:55 User: tfoster Style Table: Langan.stb Layout: 1980



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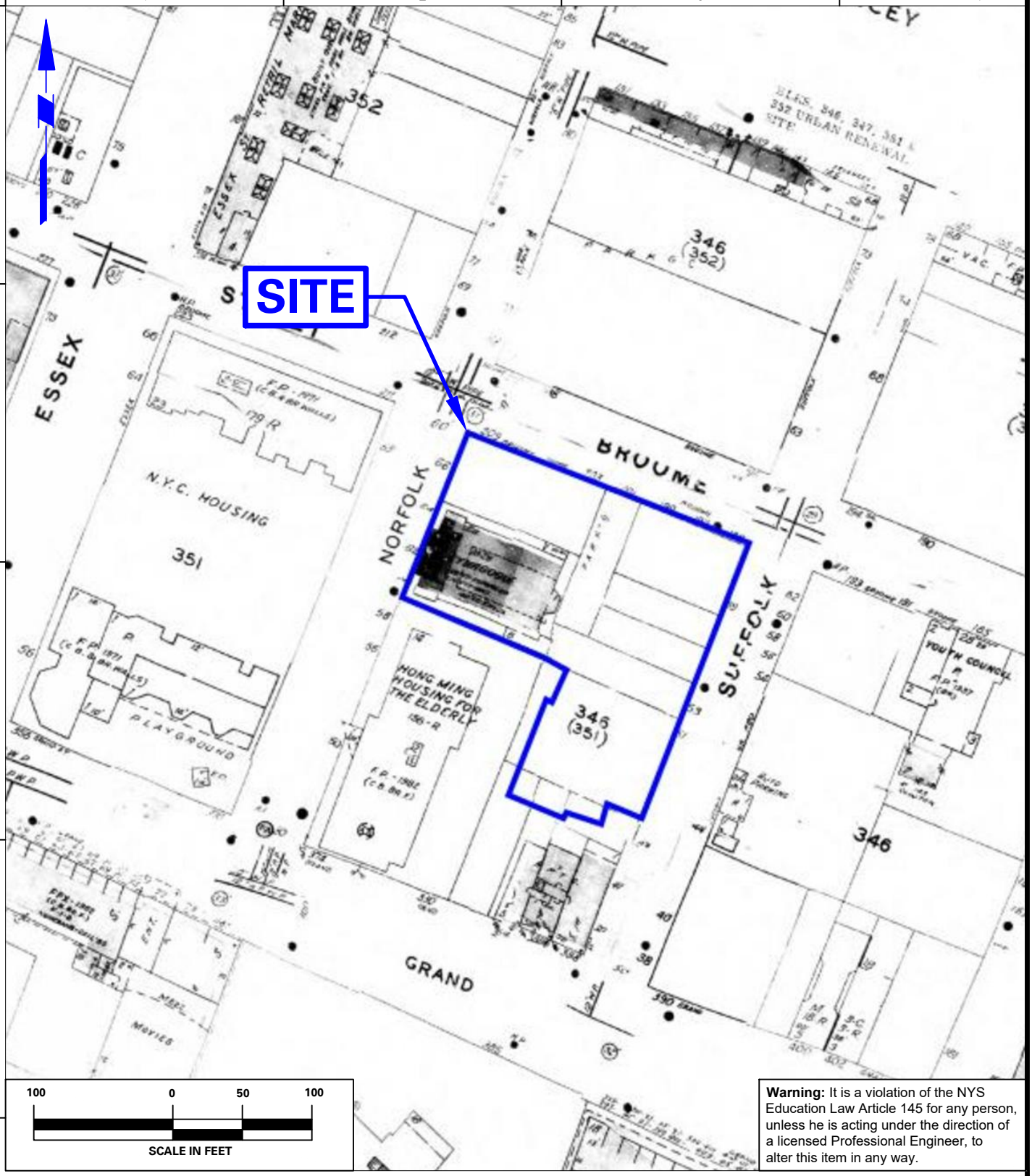
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1983 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-12

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:55 User: tfoster Style Table: Langan.stb Layout: 1983



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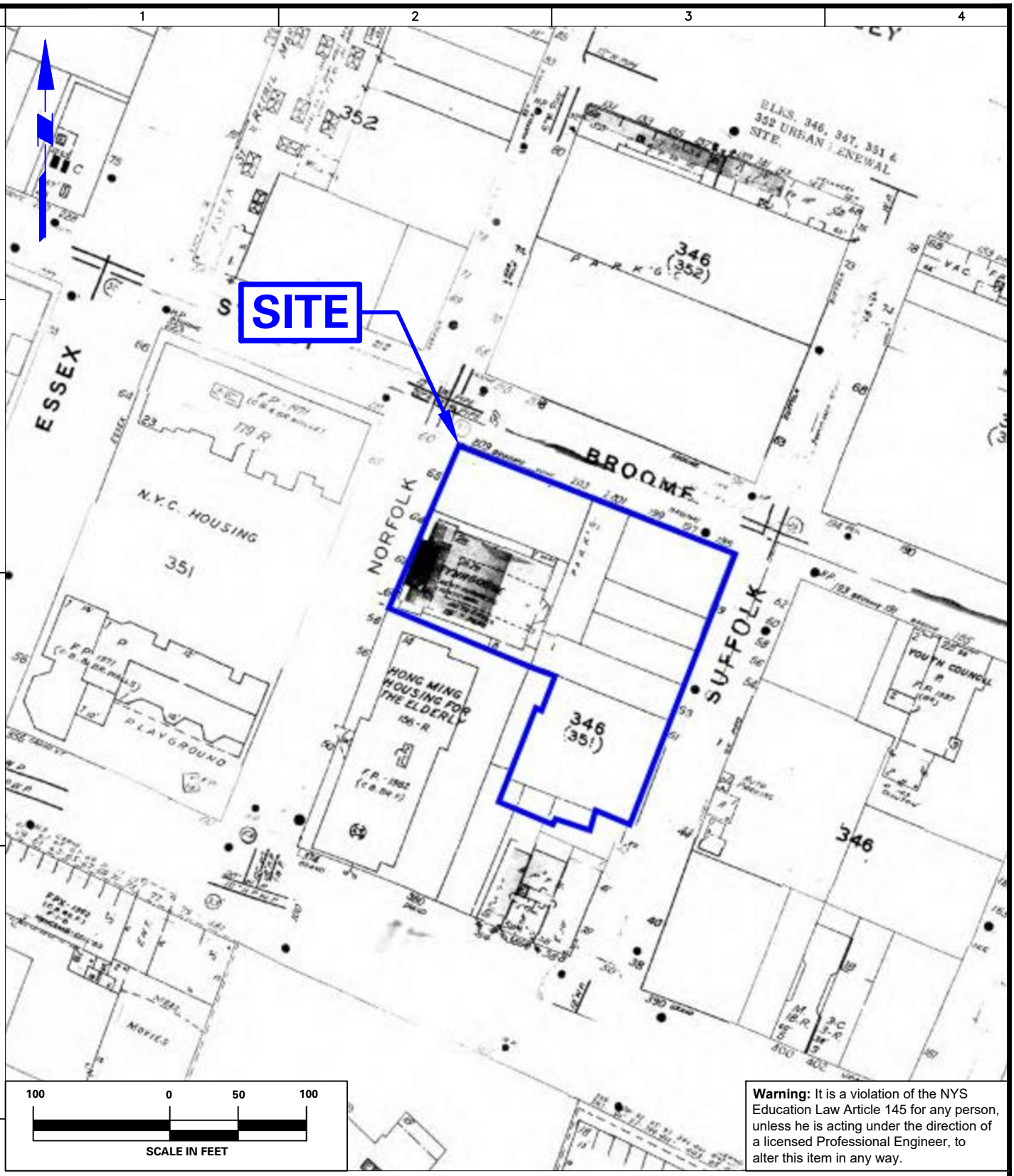
Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	1985 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-13

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:55 User: tfoster Style Table: Langan.stb Layout: 1985



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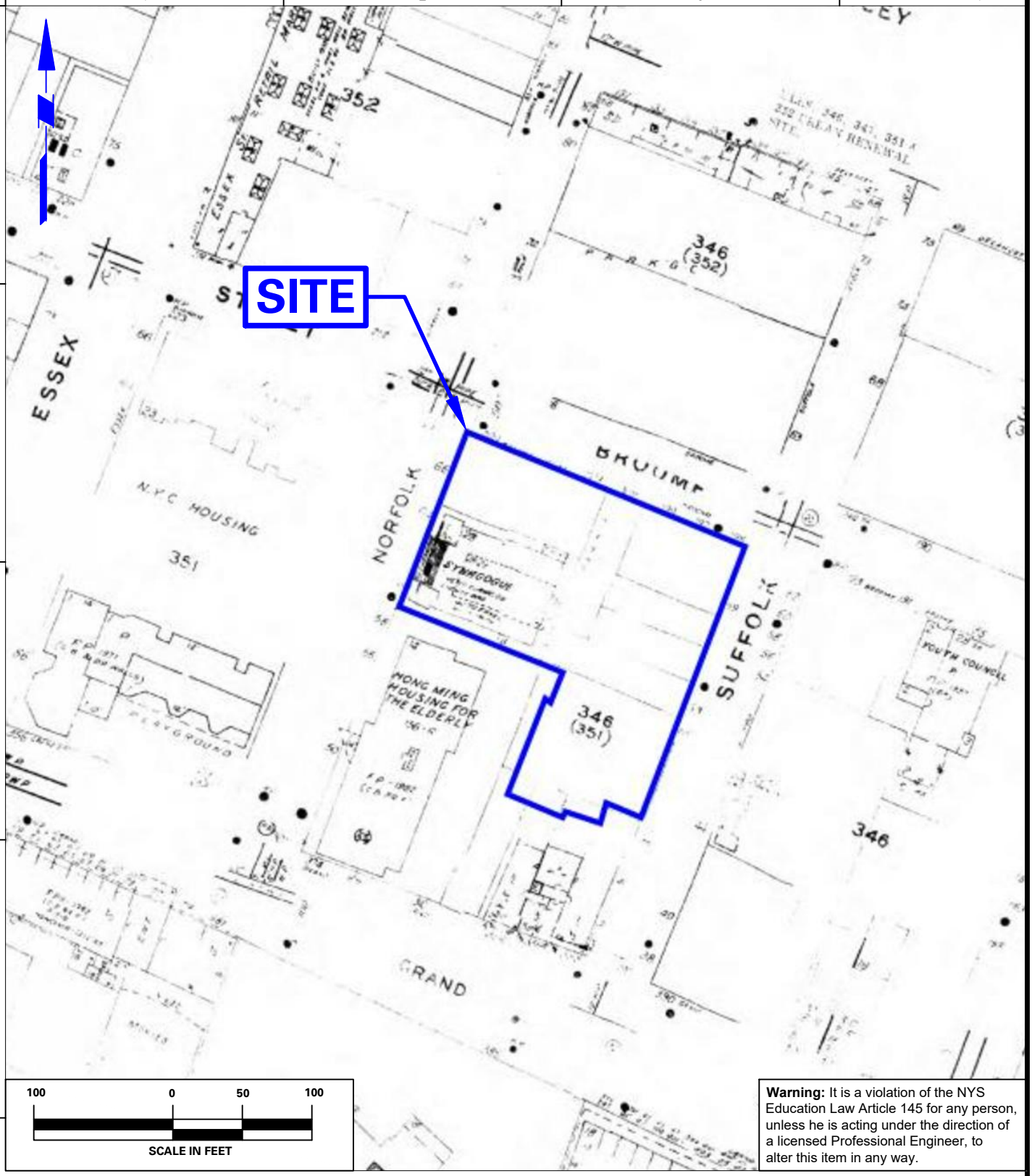
Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	1987 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-14

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:55 User: tfoster Style Table: Langan.stb Layout: 1987



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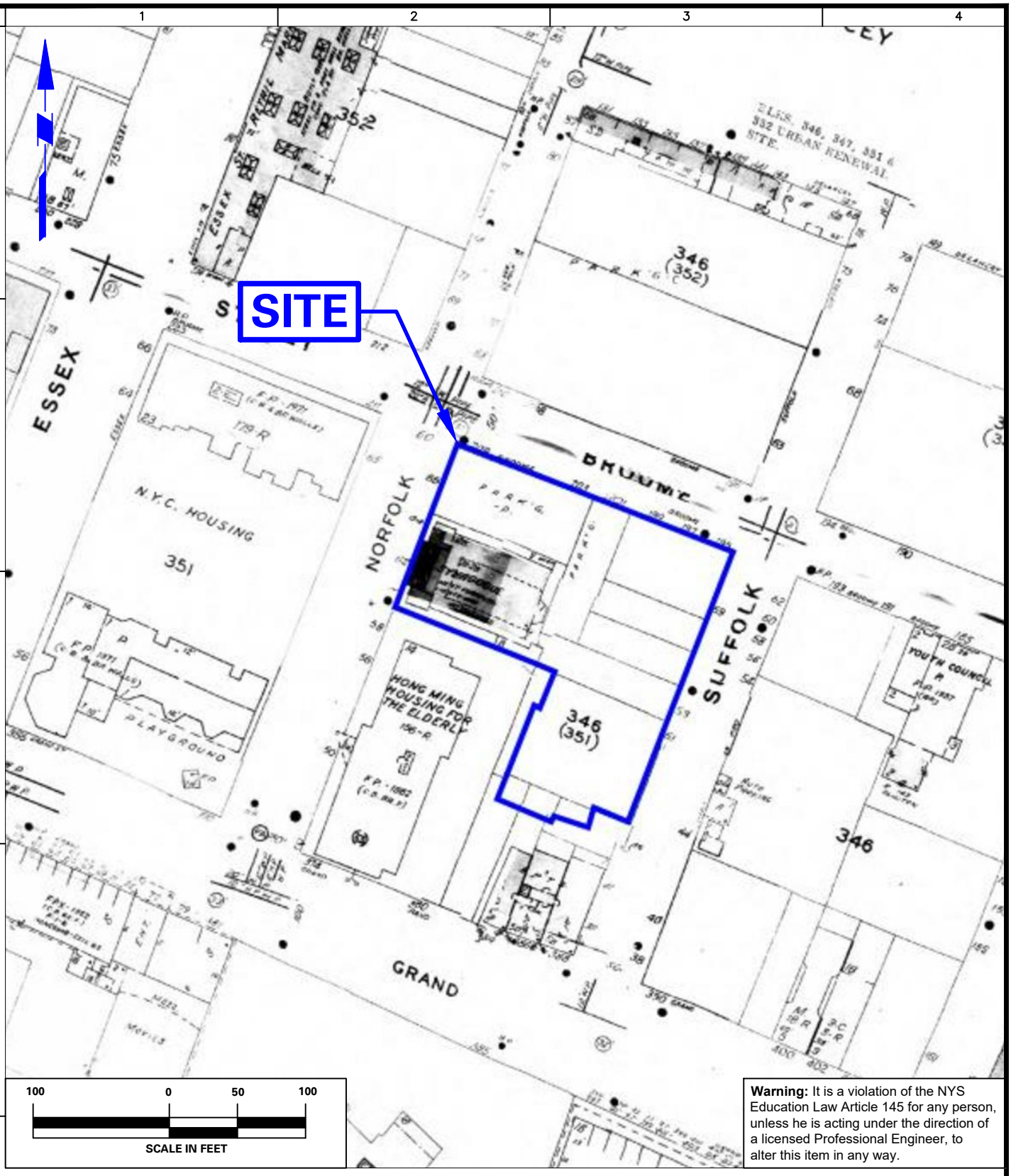
Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	1988 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-15

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:56 User: tfoster Style Table: Langan.stb Layout: 1988



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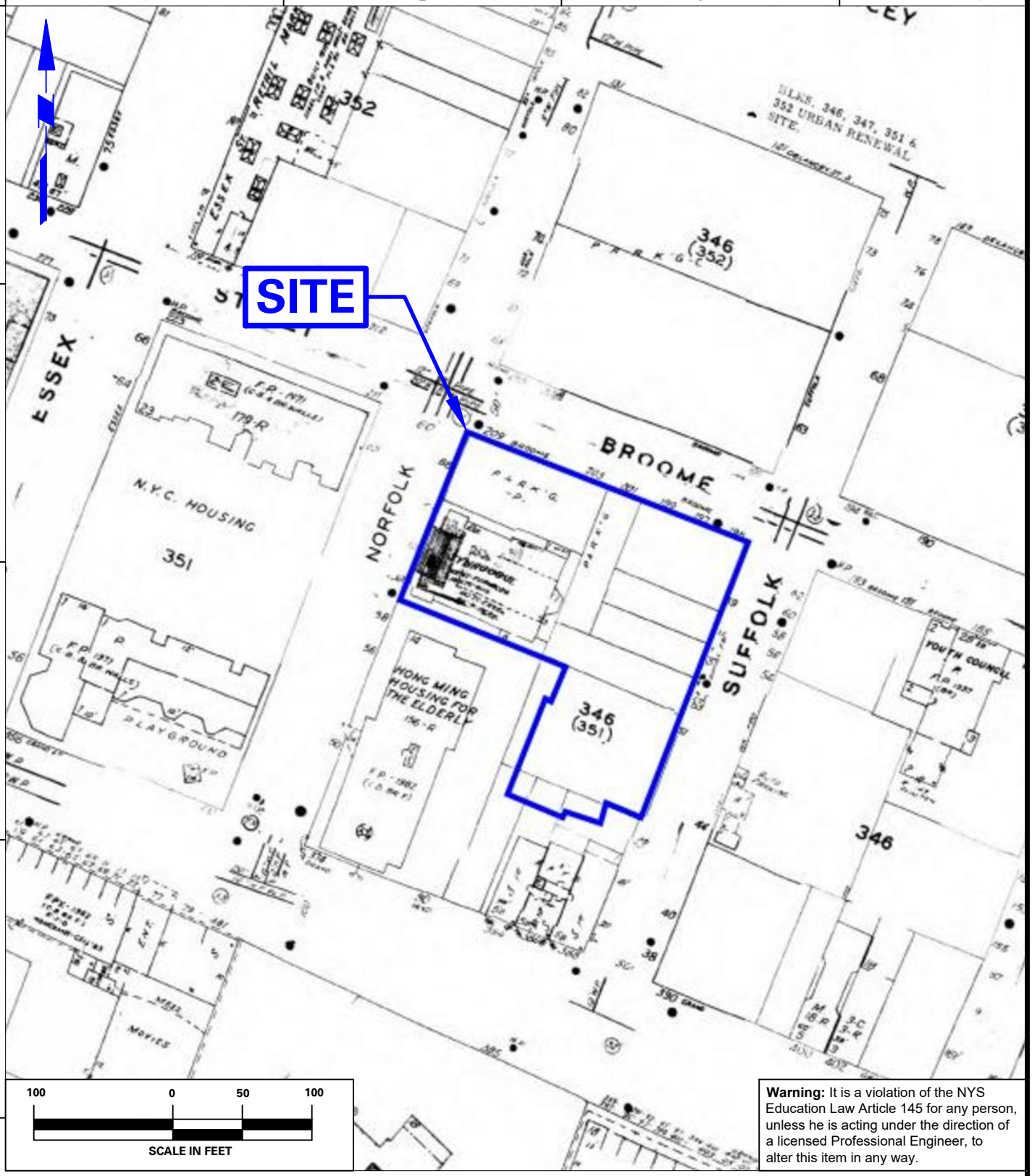
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1990 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-16

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:56 User: tfoster Style Table: Langan.stb Layout: 1990



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REFERENCE: EDR SANBORN MAP RESEARCH RESULTS, INQUIRY #4864722.3, DATED 28 FEBRUARY 2017.

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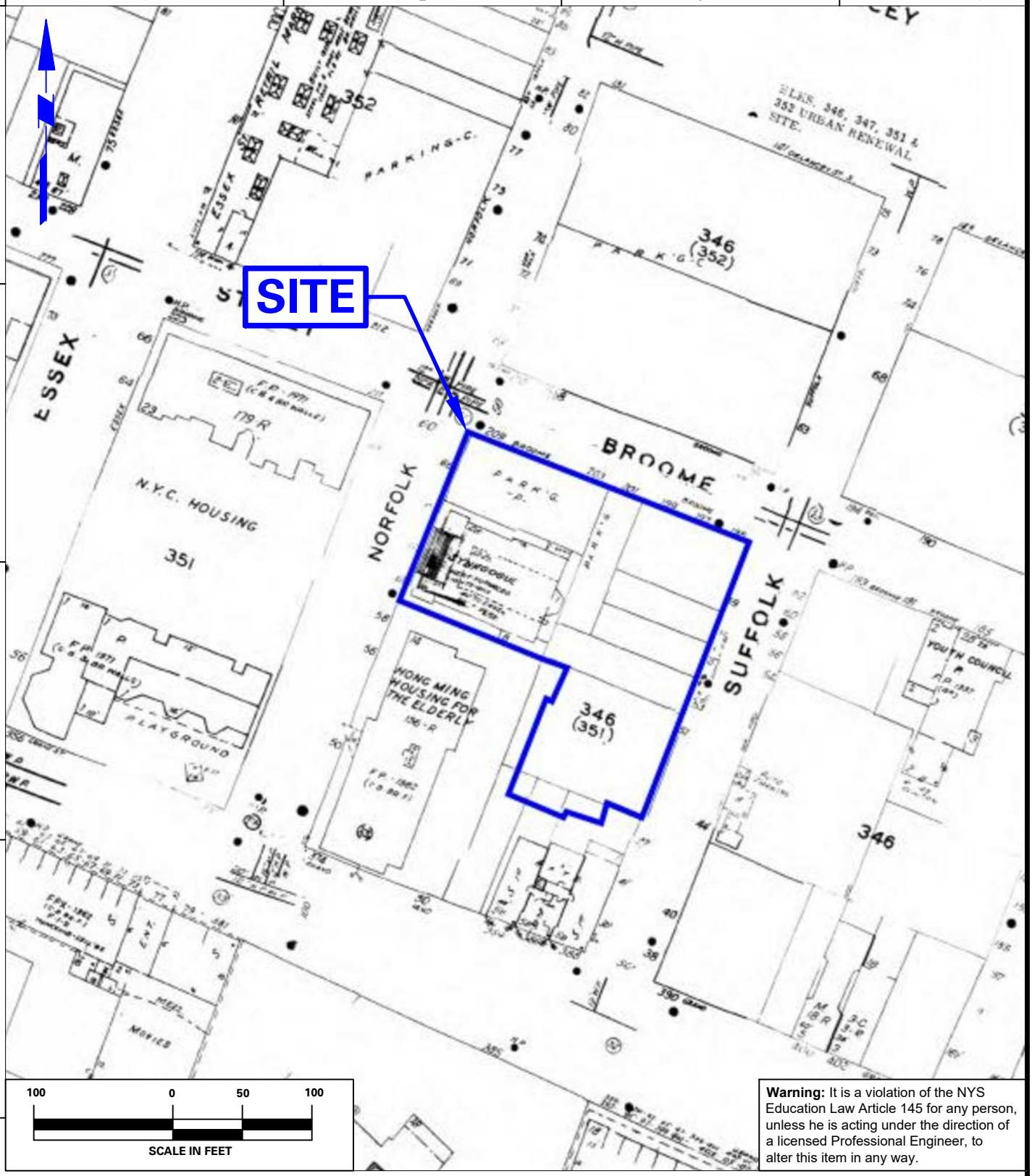
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
300 Kimball Drive
Parsippany, NJ 07054
T: 973.560.4900 F: 973.560.4901 www.langan.com
NJ Certificate of Authorization No.24GA27996400

Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1992 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-17

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:56 User: tfoster Style Table: Langan.stb Layout: 1992



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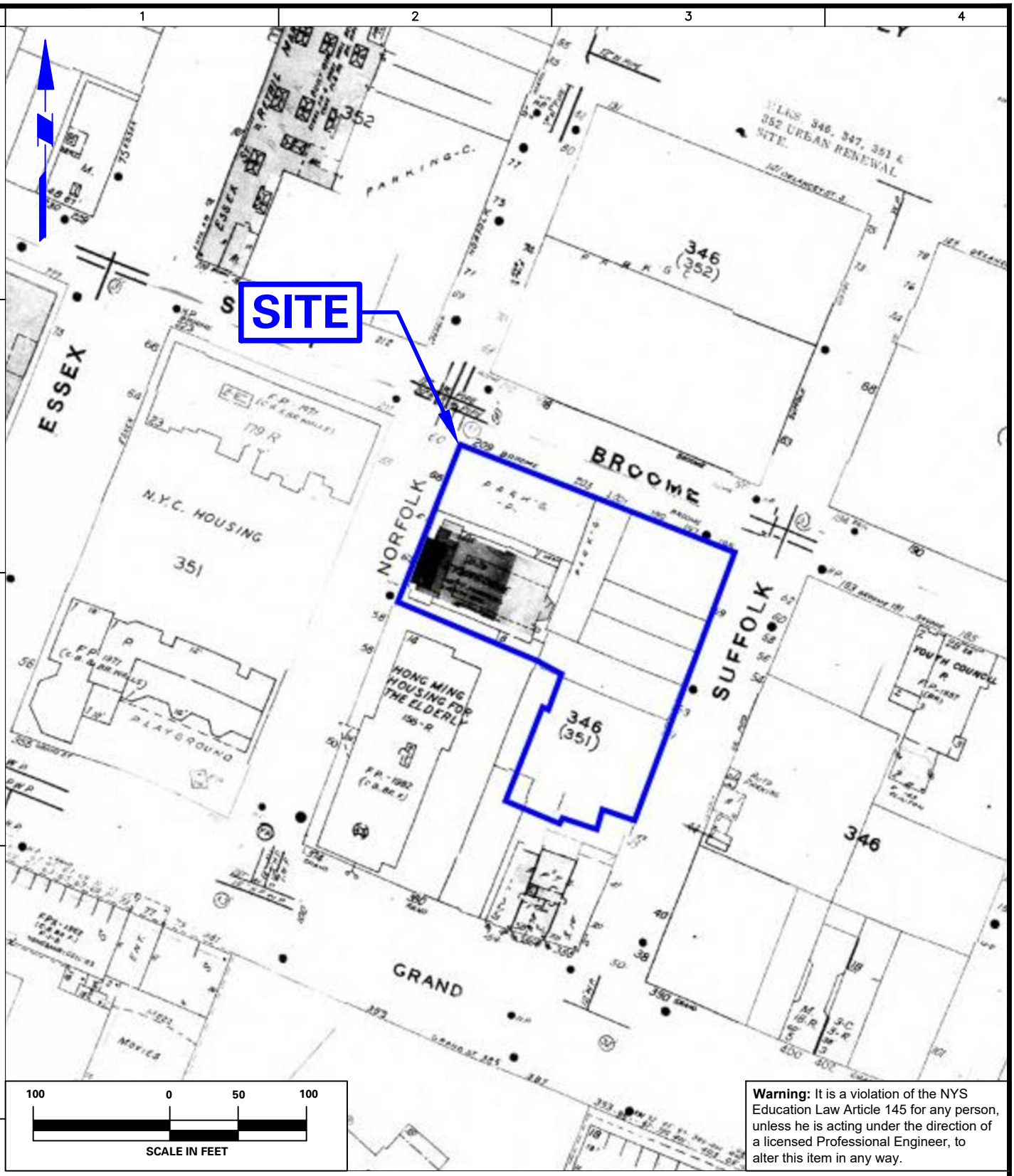
Drawing Title	1993 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-18

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:57 User: tfoster Style Table: Langan.stb Layout: 1993



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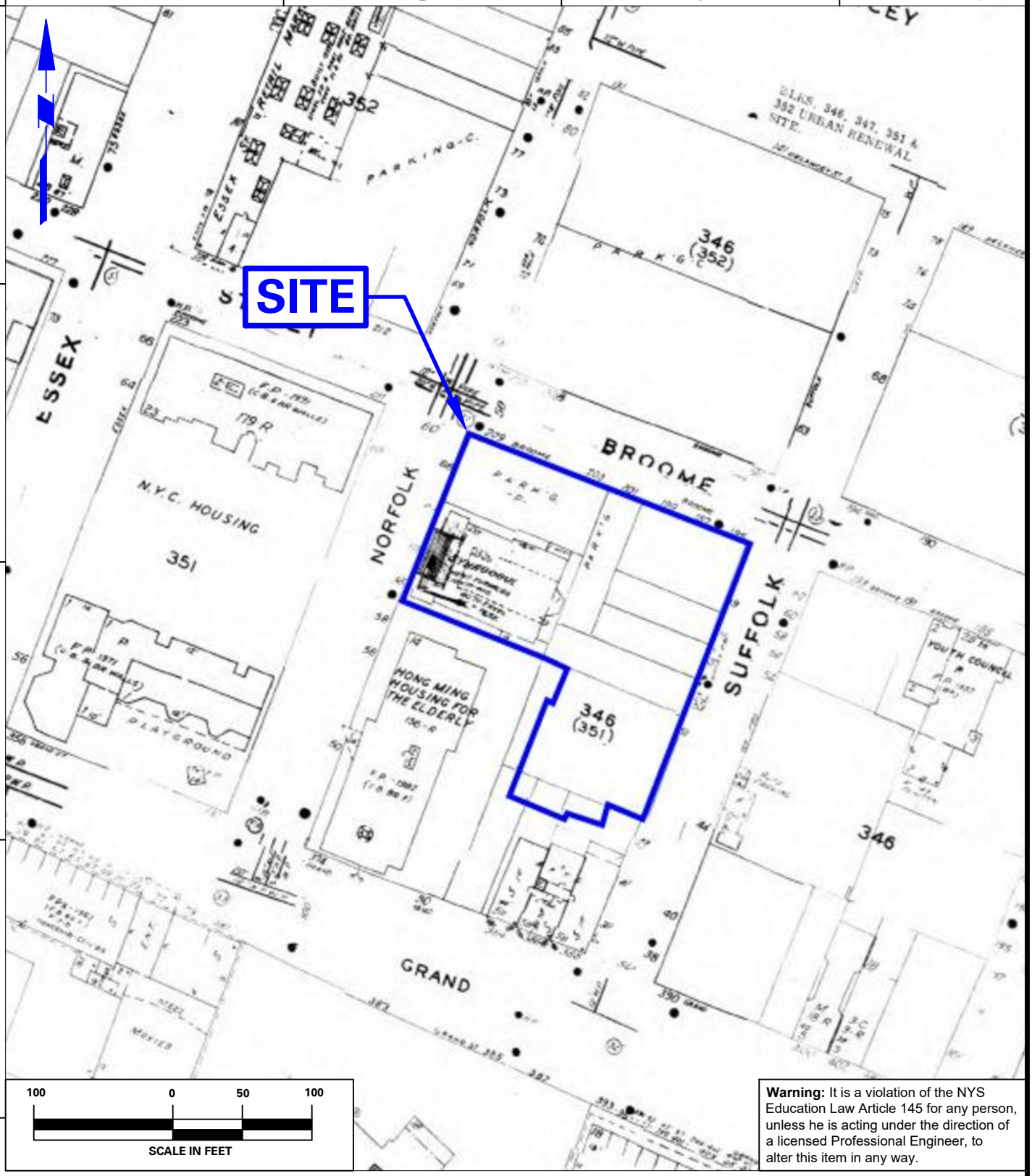
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1994 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-19

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:57 User: tfoster Style Table: Langan.stb Layout: 1994



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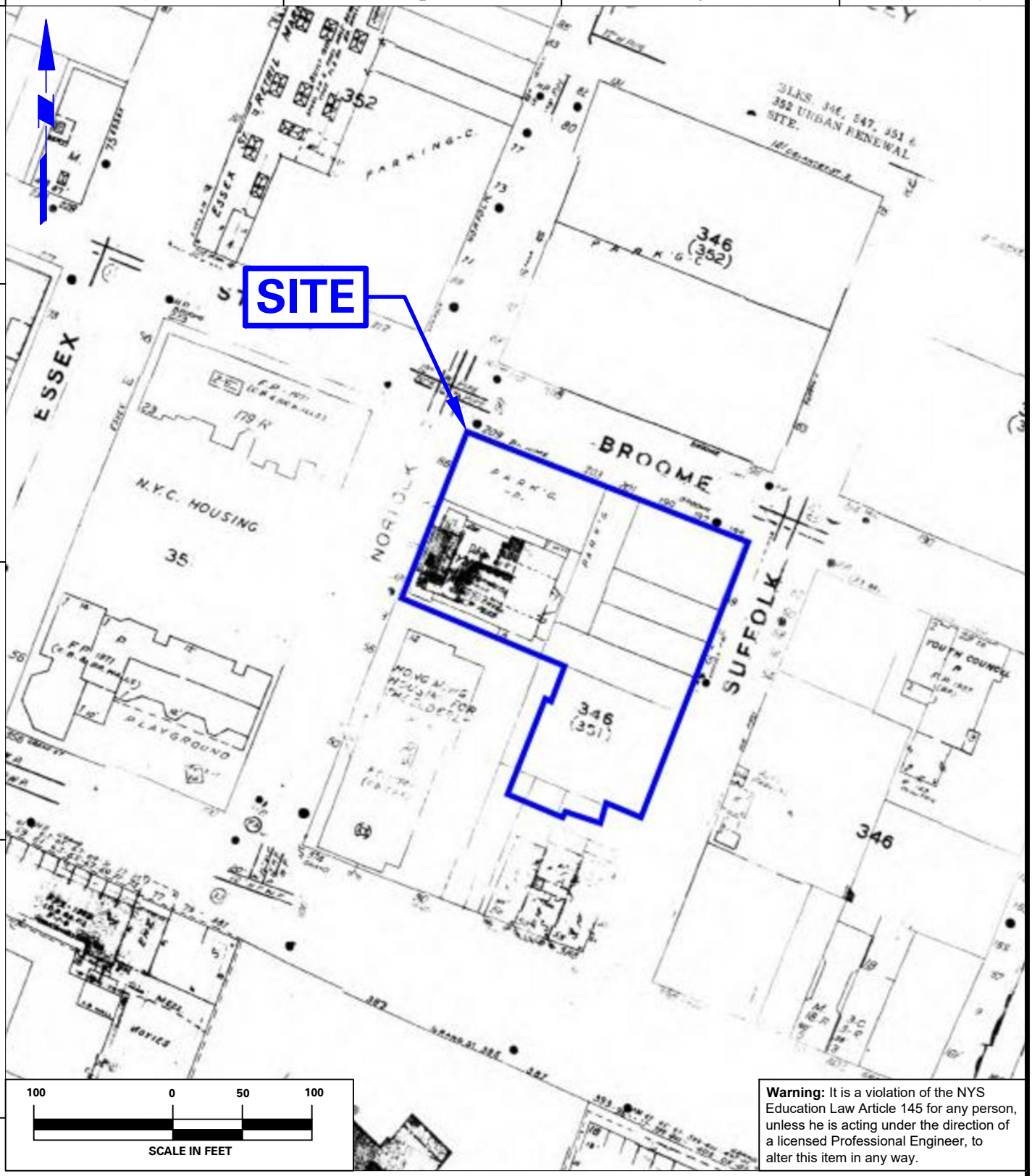
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1995 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-20

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:57 User: tfoster Style Table: Langan.stb Layout: 1995



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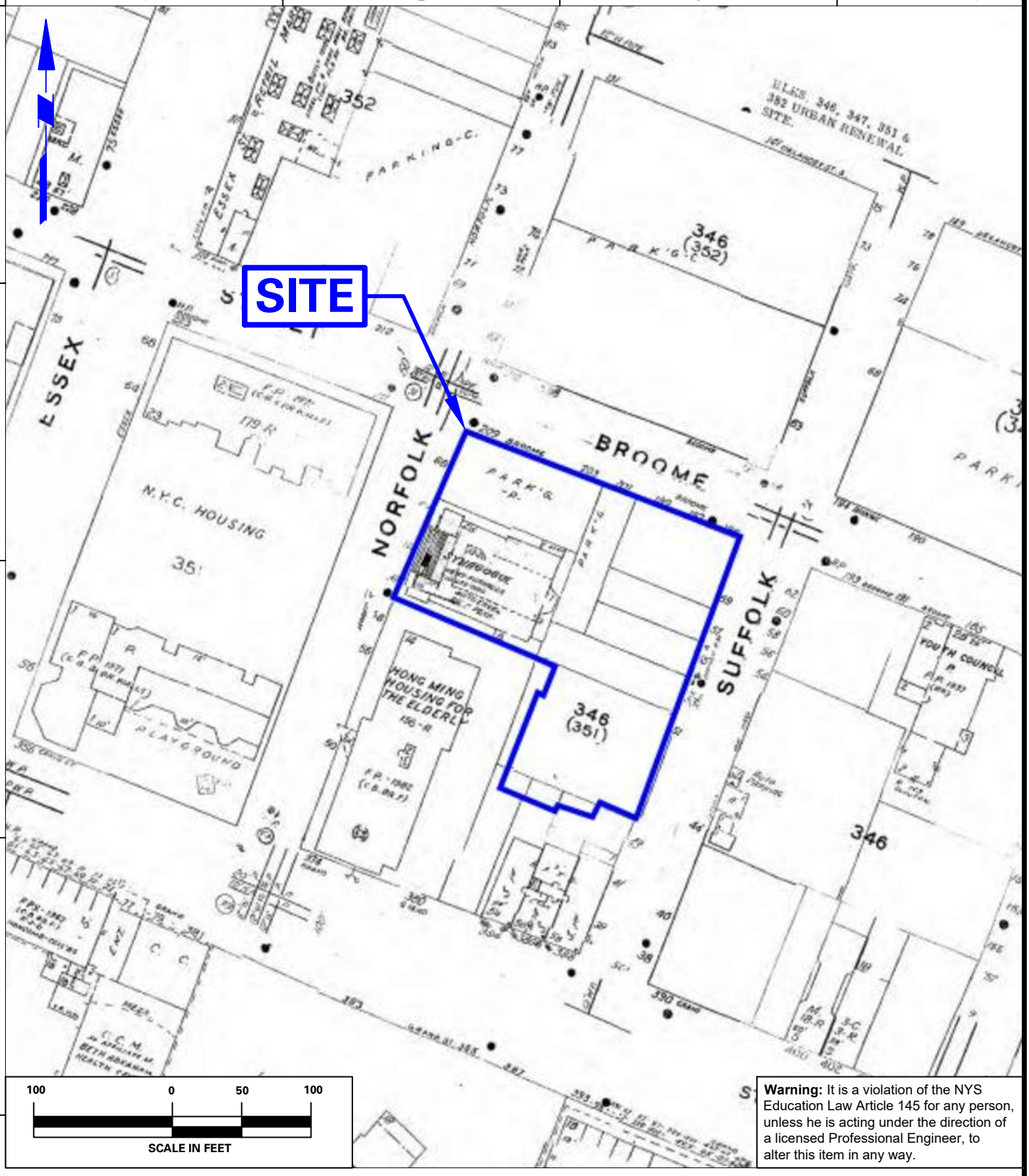
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	1996 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-21

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:58 User: tfoster Style Table: Langan.stb Layout: 1996



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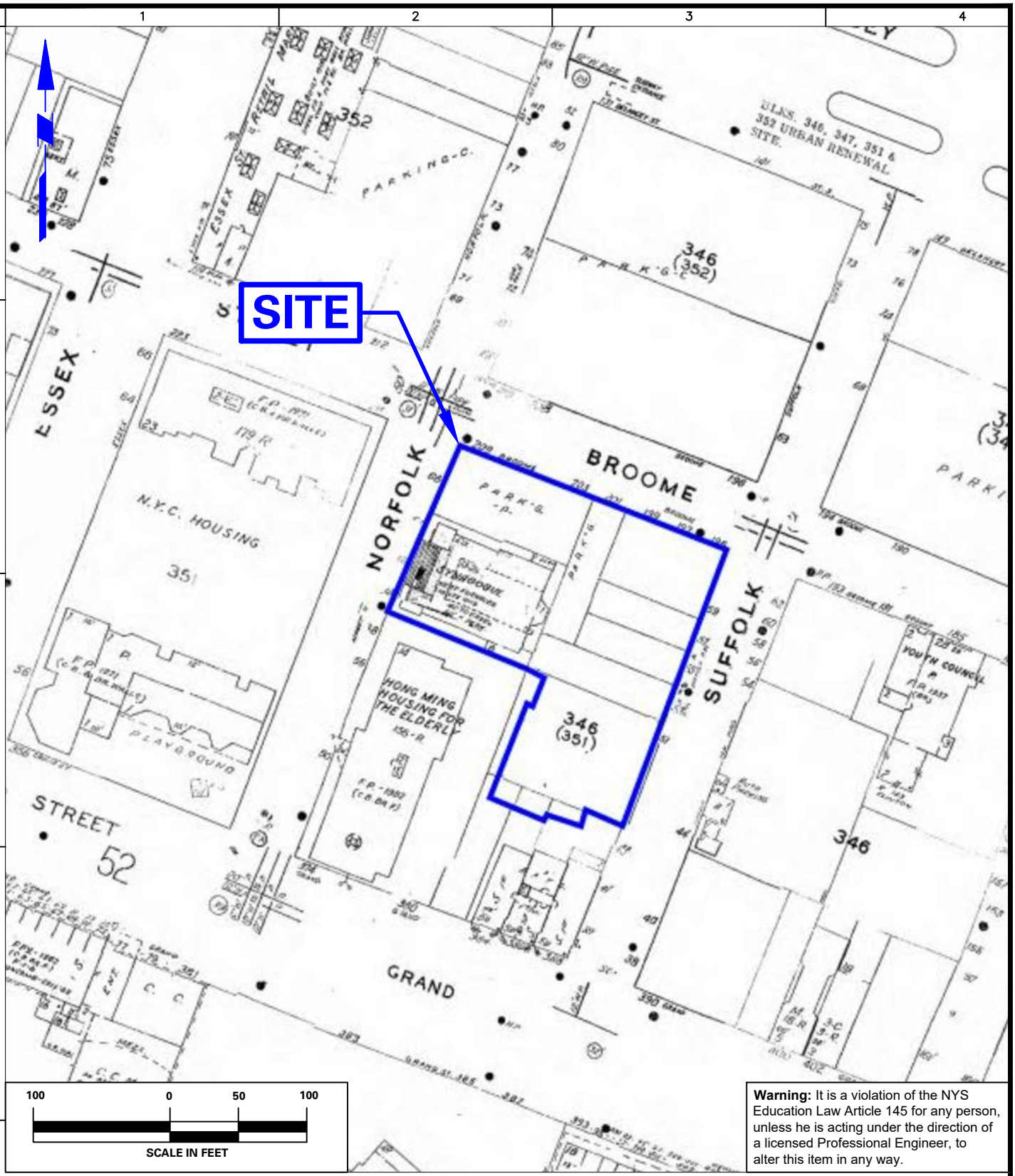
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	2001 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-22

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:58 User: tfoster Style Table: Langan.stb Layout: 2001



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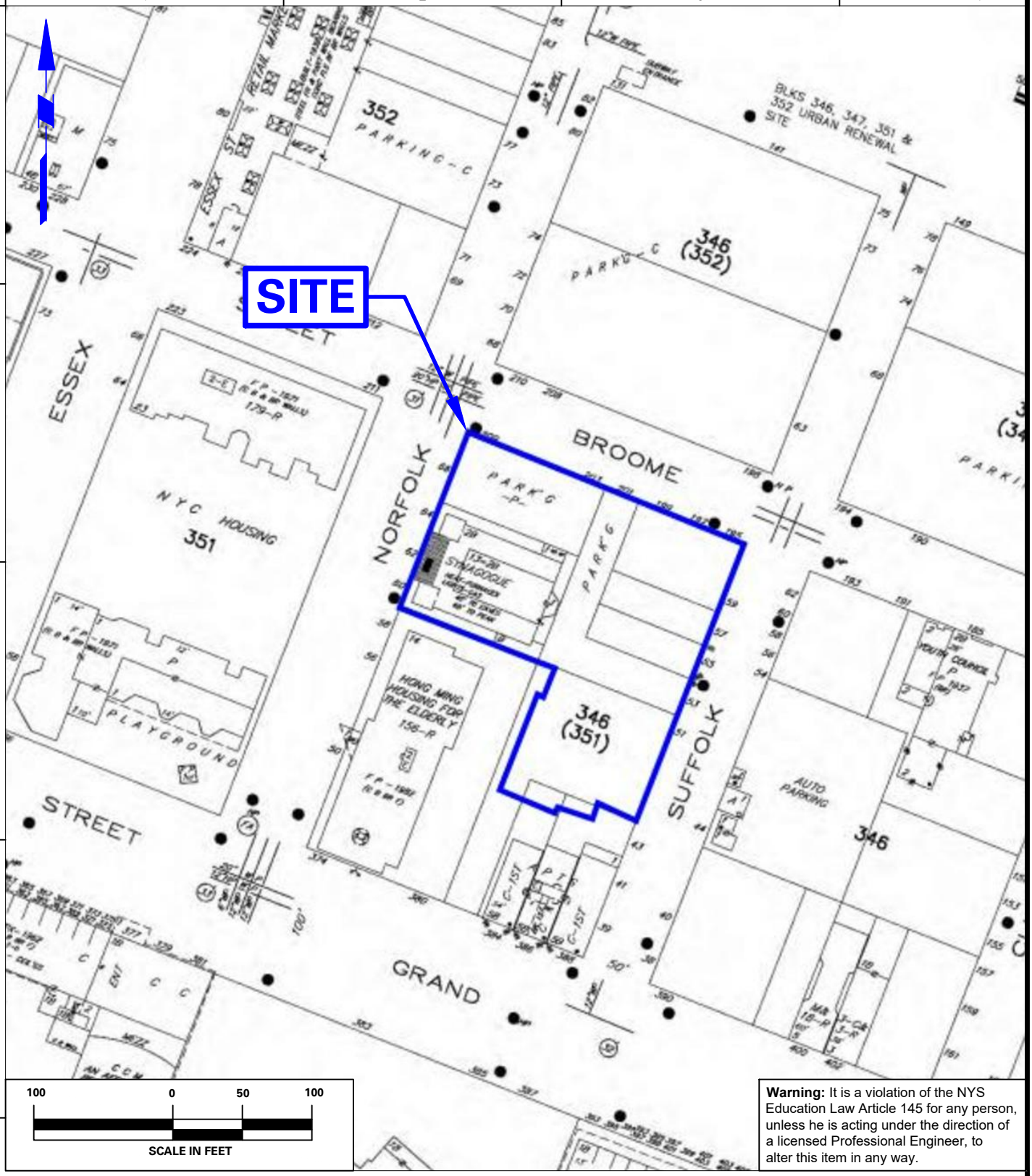
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	2002 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-23

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:58 User: tfoster Style Table: Langan.stb Layout: 2002



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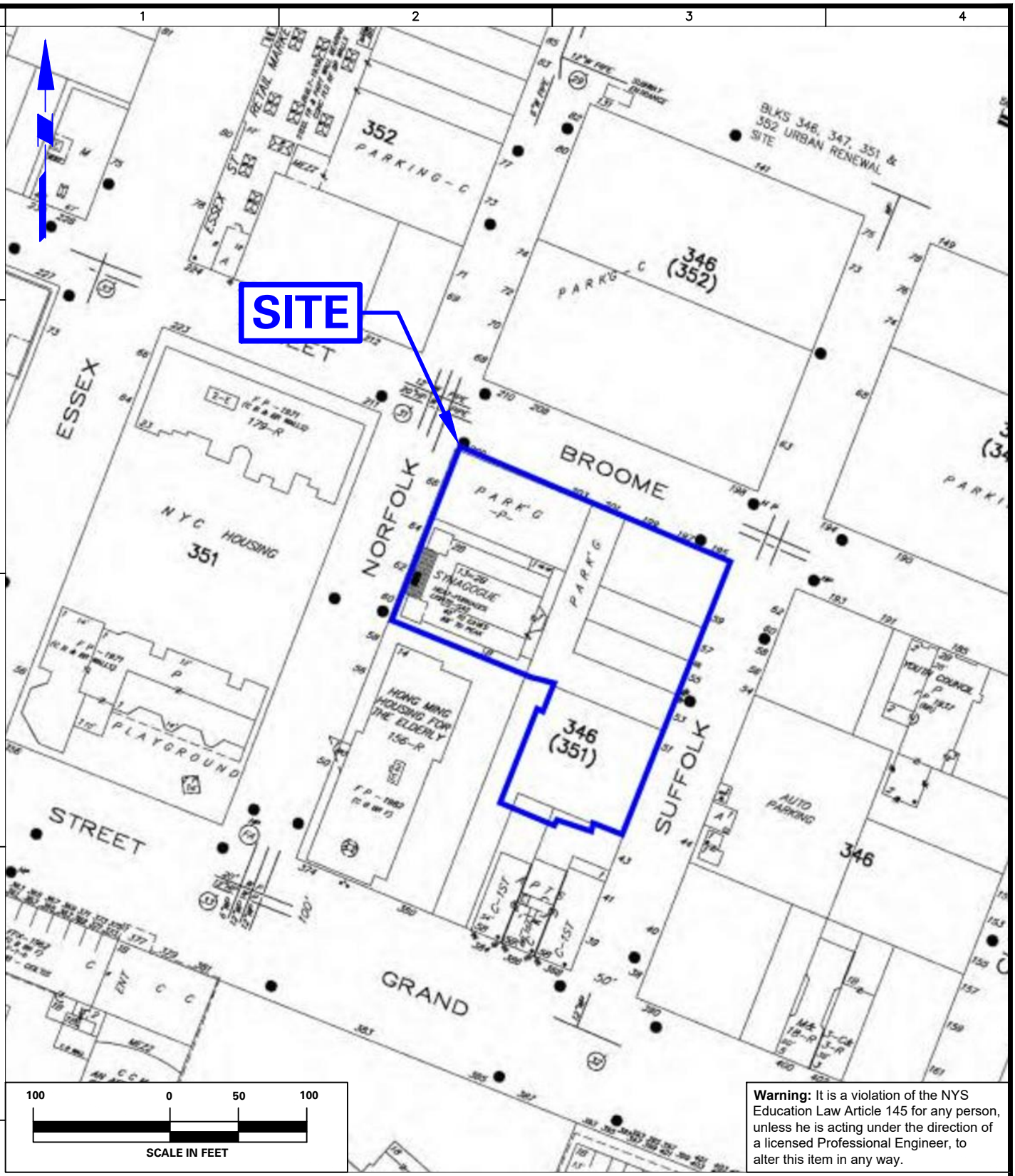
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	2003 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-24

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:58 User: tfoster Style Table: Langan.stb Layout: 2003



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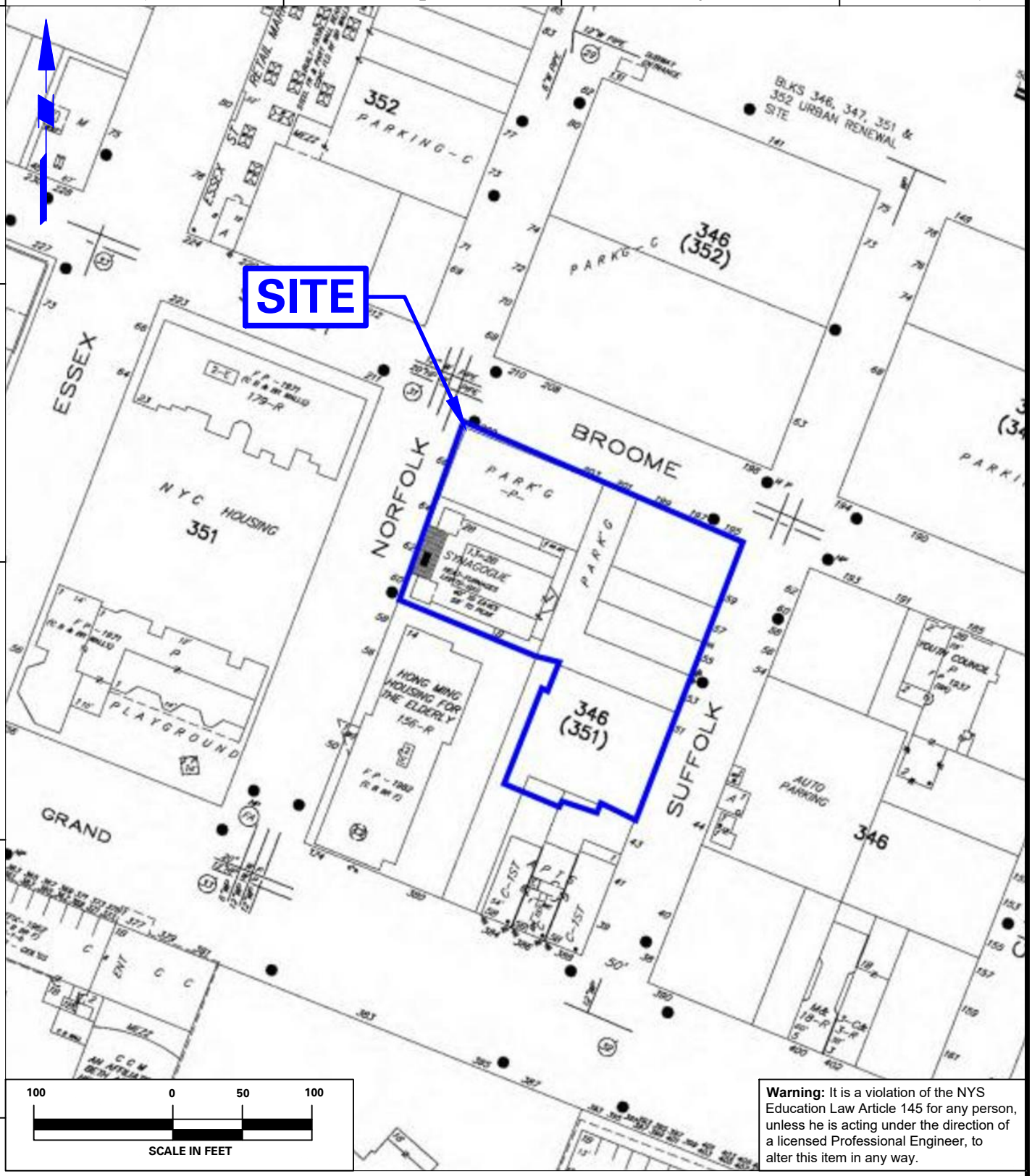
Project	PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK
Drawing Title	2004 SANBORN MAP
Project No.	100646801
Date	04/26/2019
Drawn By	JM
Checked By	NS
Drawing No.	A-25

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:59 User: tfoster Style Table: Langan.stb Layout: 2004



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Project	Drawing Title	Project No.	Drawing No.
PROPOSED GO BROOME DEVELOPMENT BLOCK No. 346 LOT Nos. 37 & 75 NEW YORK NEW YORK	2005 SANBORN MAP	100646801 Date 04/26/2019 Drawn By JM Checked By NS	A-26

Filename: \\langan.com\data\PAR\data8\100646801\Cadd Data – 100646801\SheetFiles\Geotechnical Investigation and Report\Sanborn Maps.dwg Date: 4/26/2019 Time: 9:59 User: tfoster Style Table: Langan.stb Layout: 2005

APPENDIX B

NYC DOB Documents

374 Grand Street
(Block 346, Lot 1)

LANGAN

BOROUGH M...

This certificate supersedes C.O. No. T 83086 ZONING DISTRICT R

THIS CERTIFIES that the new-~~altered-existing~~-building-premises located at

90 Norfolk Street Block 351 Lot 36, 1, 48, 51, 54, 59, 60

CONFORMS SUBSTANTIALLY TO THE APPROVED PLANS AND SPECIFICATIONS AND TO THE REQUIREMENTS OF ALL APPLICABLE LAWS, RULES, AND REGULATIONS FOR THE USES AND OCCUPANCIES SPECIFIED HEREIN

PERMISSIBLE USE AND OCCUPANCY

STORY	LIVE LOAD LBS PER SQ FT.	MAXIMUM NO OF PERSONS PERMITTED	ZONING DWELLING OR ROOMING UNITS	BUILDING CODE HABITABLE ROOMS	ZONING USE GROUP	BUILDING CODE OCCUPANCY GROUP	DESCRIPTION OF USE
1st floor	O.G.	6	0	0	2	B-2	Tenant storage; maintenance room; kitchen storage; boi[ler] room
1st floor	O.G.	1	0	0	2	D-1	Gas meter room
1st floor	O.G.	15	0	0	2	D-2	Utility service rooms; boi[ler] room; compactor room; fire pump room; kitchen
1st floor	O.G.	9	0	0	2	E	Management offices and wai[ting]
1st floor	O.G.	31	0	0	2	F3 & 4	Meeting room
1st floor	O.G.	125	0	0	2	F4	Dining room
1st floor	O.G.	11	0	0	2	Acc.	Lobby, mail room, laundry, toilets (Accessory to J-2)
Fls. 2-14	40	-	12/FL.	26	2	J-2	12 Class "A" apartments per floor
Fls. 2-14	40						
	TOTAL:	Residential					
		New-	Code				

OPEN SPACE USES 43,206.34 Square Feet Parking-33 cars (12,040 Square Feet
(SPECIFY—PARKING SPACES, LOADING BERTHS, OTHER USES, NONE)
Other Open Spaces: Planting, gardens, seating recreation (31,166.34 Sq. Feet)

NO CHANGES OF USE OR OCCUPANCY SHALL BE MADE UNLESS
A NEW AMENDED CERTIFICATE OF OCCUPANCY IS OBTAINED

THIS CERTIFICATE OF OCCUPANCY IS ISSUED SUBJECT TO FURTHER LIMITATIONS, CONDITIONS AND SPECIFICATIONS NOTED ON THE REVERSE SIDE.

BOROUGH SUPERINTENDENT

COMMISSIONER

BEGINNING at a point on the East side of Norfolk Street
0.0' feet from the corner formed by the intersection of
Norfolk Street and Grand Street

thence east 200.78' feet; thence north 301.29' feet;
thence west 201.00' feet; thence south 52.00' feet;
thence east 100.75' feet; thence south 73.94' feet;
thence west 100.70' feet; thence south 175.17' feet;
the point or place of beginning.

N.B. No. 29/80 DATE OF COMPLETION 7/28/83 CONSTRUCTION CLASSIFICATION 1-A-Fireproof
BUILDING OCCUPANCY GROUP CLASSIFICATION Residential J-2 HEIGHT 14 STORIES 126'-1½" FEET

THE FOLLOWING FIRE DETECTION AND EXTINGUISHING SYSTEMS ARE REQUIRED AND WERE INSTALLED IN COMPLIANCE WITH APPLICABLE LAWS.

	YES	NO		YES	NO
STANDPIPE SYSTEM	X		AUTOMATIC SPRINKLER SYSTEM	X	
YARD HYDRANT SYSTEM		X			
STANDPIPE FIRE TELEPHONE AND SIGNALLING SYSTEM		X			
SMOKE DETECTOR		X			
FIRE ALARM AND SIGNAL SYSTEM		X			

STORM DRAINAGE DISCHARGES INTO:
A) STORM SEWER ☐ B) COMBINED SEWER ☐ C) PRIVATE SEWAGE DISPOSAL SYSTEM ☐

SANITARY DRAINAGE DISCHARGES INTO:
A) SANITARY SEWER ☐ B) COMBINED SEWER ☐ C) PRIVATE SEWAGE DISPOSAL SYSTEM ☐

Sprinklers provided in all corridors, Public spaces, service and utility areas as per Department of Housing and Urban Development (H.U.D.) standards. Siamese and water-flow alarm provided in accordance with New York City Code pertaining to sprinkler system required by Housing and Urban Development.

LIMITATIONS OR RESTRICTIONS:
BOARD OF STANDARDS AND APPEALS CAL. NO. —
CITY PLANNING COMMISSION CAL. NO. 790721 ZSM
OTHERS: Board of Estimate Calendar #5/79

30X

ZONING DATA

ITEM	PROPOSED	ALLOWABLE OR REQUIRED	REFERENCE
SITE AREA	44492	–	SURVEY
COVERAGE	9762.77 SQ. FT.	–	DIAGRAM HEREON
FLOOR AREA	156,678.78 SQ. FT.	308,261 ALLOWABLE	23-14 Z.R.
F.A.R.	3.52	5.81 ALLOWABLE	23-14 Z.R.
HEIGHT FACTOR	14	–	CALCULATION HEREON
OPEN SPACE	34732.81 SQ.FT.	–	–
O.S.R.	78.0%	9.5 % MINIMUM	23-142 Z.R.
ZONING ROOMS	559	1011 ... ALLOWED	SEE COVER SHEET
LOT AREA / RM.	79.60 SQ FT	44 SQ.FT. MIN.	23-223 Z.R.
DWELLING UNITS	156		SEE COVER SHEET
PARKING	33 SPACES	32.76 REQUIRED	25-25 Z.R (CHART)

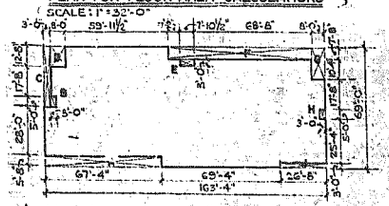
GROSS FLOOR AREA FOR HUD CALCULATIONS:

GROSS FLOOR AREA FROM DIAGRAM AT RIGHT 156,678.78
+ AREA OF ELEVATOR BULKHEAD, [18.5 X 19.5] + [8.5 X 13.5] + 360.75 + 165.75 = 529.5
+ AREA OF 2 STAIR BULKHEADS = 2 X 9.0 X 17.66 = 317.88

GROSS SQ. FT. = 157,526.16

PLAN FOR FLOOR AREA CALCULATIONS

SCALE: 1" = 32'-0"



A	67.33	X	5.66	= 381.08 SQ.FT.
B	5.0	X	3.0	= 15.0
C	38.33	X	3.3	= 126.99
D	8.0	X	12.66	= 101.28
E	7.87	X	6.6	= 29.61
F	95.54	X	7.66	= 641.06
G	18.0	X	8.0	= 144.0
H	3.0	X	5.0	= 15.0
J	3.0	X	26.66	= 79.98
				1507.00

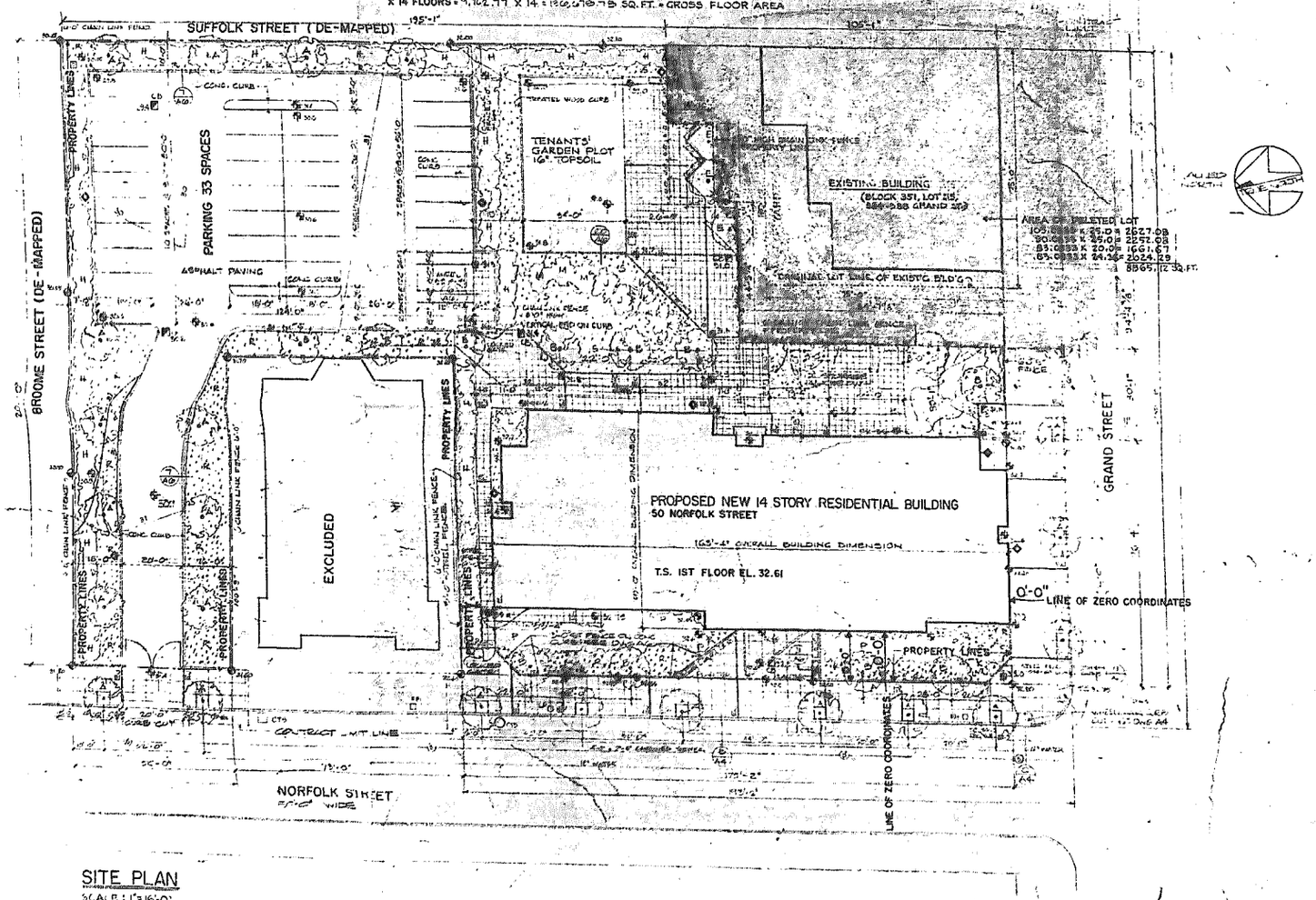
GROSS FLOOR AREA PER FLOOR = [69.0 X 163.33] - 1507 = 11269 SQ.FT. = 9762.77 SQ.FT. = COVERAGE
X 14 FLOORS = 9,762.77 X 14 = 156,678.78 SQ. FT. = GROSS FLOOR AREA

ZONE: R-8 (ZONING MAP 18C)
SITE 2A, SEWARD PARK EXTENSION URBAN RENEWAL AREA
50 NORFOLK ST., NEW YORK, N.Y.

CALCULATIONS:

LOT COVERAGE = 9762.77 SQ.FT.
TOTAL F.A.R. = TOTAL FLOOR AREA ÷ LOT AREA = 156,678.78 = [redacted] ACTUAL
HEIGHT FACTOR = FLOOR AREA ÷ COVERAGE = 156,678.78 ÷ 9762.77 = 14
OPEN SPACE = LOT AREA – COVERAGE = [redacted] – 9762.77 = [redacted] SQ.FT.
O.S.R. = OPEN SPACE ÷ FLOOR AREA = [redacted] ÷ 156,678.78 = [redacted] %
ALLOWABLE FLOOR AREA = ALLOWABLE F.A.R. X LOT AREA = 5.81 X [redacted] = [redacted] SQ.FT.
ALLOWABLE ZONING ROOMS = 44 SQ. FT. LOT AREA / RM. = 44492 ÷ 44 = 1011 ROOMS
PARKING: 21% OF NO. OF APTS = 156 X 21% = 32.76 REQUIRED (33 PROVIDED)
PROJECT IS PUBLICALLY ASSISTED NON-PROFIT HOUSING FOR THE ELDERLY.

BLOCK 351
LOTS: 35, 36, 40, 41, 42, 43, 44, 47, 48, 50, 51, 54, 55, 58, 59, 60, 63, 131, 132

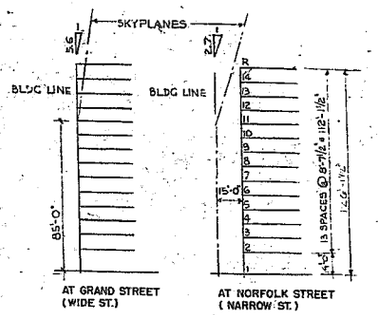


SITE PLAN
SCALE: 1"=16'-0"

KEY TO SITE PLAN SYMBOLS

- PROPERTY LINE
- CONTRACT LIMIT LINE
- CB — CATCH BASIN
- YARD DRAIN
- FH — FIRE HYDRANT
- LP — EXISTING LIGHT POLE
- EXISTING SEWER MANHOLE COVER
- C.T.S. — CON ED ELECTRICAL MANHOLE COVER
- EXISTING ELEVATION
- PROPOSED ELEVATION
- NEW EXTERIOR LIGHTING
- WR — WASTE RECEPTACLE
- GAME TABLE AND SEATS
- BENCH, LENGTH AS NOTED
- 4" CONC. PAVING SCORED 2'-0" O.C. BOTH WAYS. EXP. JOINTS WHERE SHOWN 20'-0" O.C. MAX.
- 4" CONC. PAVING SCORED 4'-0" O.C. BOTH WAYS. EXP. JOINTS WHERE SHOWN 20'-0" O.C. MAX.
- TREE PIT
- SHRUB, SEE PLANTING SCHEDULE ON THIS DWG.
- GRASS ON TOPSOIL
- GROUND COVER
- TREES, SEE PLANTING SCHEDULE ON THIS DWG.
- 6'-0" HIGH CHAIN LINK FENCE
- STEEL FENCE AS NOTED

SEE PAGE A6 FOR SITE DETAILS.



SKYPLANE DIAGRAMS
SCALE: 1"=32'-0"

AUTHORIZATIONS BY CITY PLANNING COMMISSION AND THE BOARD OF ESTIMATE: AS PER PAR. 78-312 (d) Z.R. BY SPECIAL PERMIT TO AUTHORIZE MINOR VARIATIONS IN THE FRONT HEIGHT AND SETBACK REGULATIONS ON THE PERIPHERY OF SUCH DEVELOPMENT.....AS REQUIRED BY 23-632 AND 23-64 Z.R.

PLANTING SCHEDULE

	NOTATION	BOTANICAL NAME	CALIPER	HEIGHT	LIMBED-UP	SPREAD	BALL SIZE	PIT WIDTH	PIT DEPTH		NOTATION	QUANTITY
TREES	A	PLATANUS ACERIFOLIA	2½"	12'	6'	6'	30"	4'-0"	3'		A	25
	B	GINKGO BILOBA	2½"	12'	6'	4'	30"	4'	3'		B	13
	C	GLEDITSIA TRIACATHOS	2½"	12'	6'	8'	30"	4½'	3'	INERMIS	C	4
	E	MALUS 'VAN ESELTINE'	2½"	8'	–	6'	24"	4'	3'		E	16
	F	BETULA PENDULA GRACILIS	2"	10'	–	5'	20"	4'	3'		F	2
SHRUBS	H	RHAMNUS FRANGULA COL.		4'						PLANT 3'-0" APART	H	700
	J	COTONEASTER DIVARICATA		4'							J	2
	K	FORSYTHIA INT. 'SPR. GLORY'		4'							K	6
	L	EUONYMUS KVIETSCHOVICA		4'						PLANT 6'-0" APART	L	14
	M	KOLKWITZIA AMABILIS		4'							M	5
	N	RHODO. CAROLINIANUM 'P.J.		2'							N	8
	P	BERBERIS MENTORENSIS		2'						PLANT 4'-0" APART IN PLANTER – SEE A6	P	68
GROUND COVER	R	HEDERA HELIX 'BALTICA'								PLANT 8" AP. RT		
	S	EUONYMUS FORT. 'ACUTUS'								PLANT 8" APART		

31 JAN. 83 BUILDING + YARD DIMENSIONS FOR NEW FOR 584-588 GRAND ST BLDG DELETED
3 SEPT. 82 DIMENSIONS ADDED AT EXISTING BLDG.
1 JULY 82 CORNER LOT DELETED. ZONING CALCULATIONS REVISED.
31 NOV. 80 FOR BLDG DEPT. APPROVAL

THE EDELMAN PARTNERSHIP ARCHITECTS
434 Sixth Avenue, New York N.Y. 10011 , 212-924-4410

CHINATOWN PLANNING COUNCIL
OPEN DOOR SENIOR CITIZENS' HOUSING

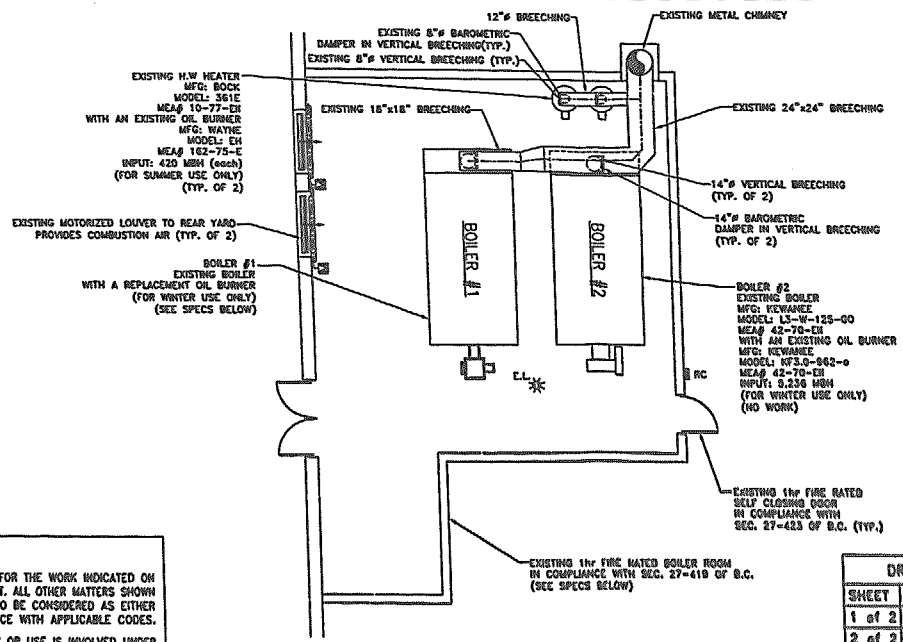
HUD 7
HUD DWG NO.

SEAL

TITLE: SITE PLAN, SITE SYMBOLS, PLANTING SCHEDULE, ZONING

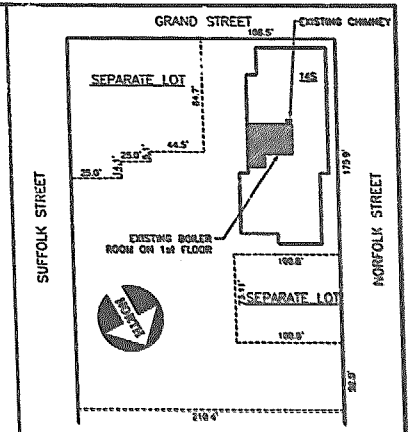
DWG NO: A5-F

PROJECT NO: 608
DATE: 1 REVISION 80
BY:
SCALE:



EXISTING LEGAL BOILER ROOM PLAN

SCALE: 1/8" = 1'-0"
BOILER ROOM AREA = 915 sq ft



PLOT PLAN N.T.S.

BLOCK: 346 LOT: 1
ZONING: R8 MAP NO: 12c
CB NO: 3

GENERAL NOTES:

1. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
2. NO CHANGE IN EGRESS, OCCUPANCY OR USE IS INVOLVED UNDER THIS APPLICATION.
3. THIS BOILER ROOM IS EXISTING PRIOR TO MARCH 31st 1965

DRAWING INDEX

SHEET	DESCRIPTION
1 of 2	BOILER ROOM PLAN
2 of 2	NOTES

APPLICATION NUMBER:

104008798

EQUIPMENT SPECIFICATIONS

BOILER #1		BURNER #1	
EXISTING:	[X]	EXISTING:	[ ]
NEW INSTALLATION:	[ ]	NEW INSTALLATION:	[ ]
REPLACEMENT:	[ ]	REPLACEMENT:	[X]
MFG:	KEWANEE	MFG:	CARLIN
MODEL:	L3-W-125-GO	MODEL:	1150 FFD
MEA NO:	42-70-EH	MEA NO:	36-76-E
HEATING CAPACITY		F.O. TANK INFORMATION:	
INPUT:	5.286 MBH	EXISTING [X] NEW [ ]	
GROSS OUTPUT:	4.184 MBH	SIZE:	10,000 gals No 2 F.O.

EXISTING LEGAL BOILER ROOM INFO

BOILER ROOM CONSTRUCTION

WALLS: CONCRETE (1hr FR)
CEILING: CONCRETE (1hr FR)
FLOOR: CONCRETE
LOCATION: 1st FLOOR

VENTILATION:

[X] FIXED: 2618 sq in NET
4364 sq in GROSS

LEGEND

☼ - ELECTRIC LIGHT
BD - BAROMETRIC DAMPER
RC - REMOTE CONTROL
FR - FIRE-RATED

APPROVALS

PROFESSIONAL CERTIFICATION
DEPARTMENT OF BUILDINGS
STATE NUMBER 18 OF 0

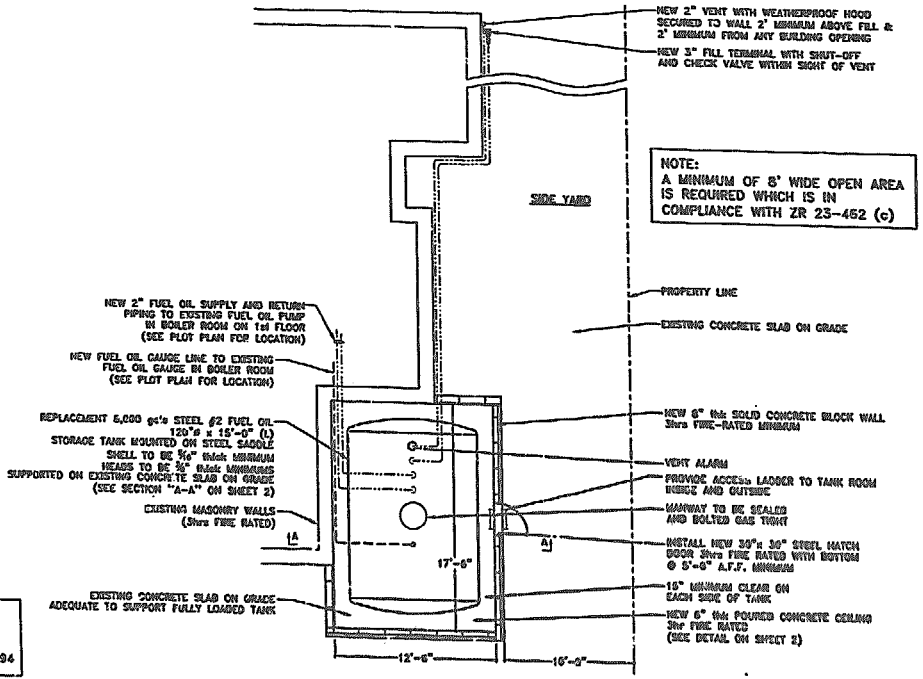
P.E. STAMP

STATE OF NEW YORK
MARK RUBINSTEIN
LICENSED PROFESSIONAL ENGINEER

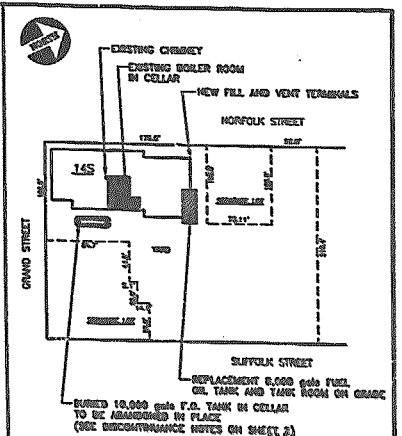
New York Engineering Associates, P.C.
270 Spagnoli Road Suite 204
Melville, New York 11747
Tel: 631 753-0333 Fax: 631 753-0437

LOW PRESSURE OIL FIRED BOILER
50 NORFOLK STREET, MANHATTAN

No:	Dwn By:	Rev No:
1386/04A	K.S.	0
Date:	Scale:	Sheet:
1/3/05	AS NOTED	1 of 2



PARTIAL YARD PLAN
SCALE 1/8" = 1' - 0"



PLOT PLAN
N.T.S.

BLOCK: 348
LOT: 1
ZONING: R8
MAP NO: 12c
CB NO: 1

APPLICATION NUMBER:

PAT IACOBAZZO

FEB 1 0 2005

ACCEPTABLE FOR PERMIT UNDER DIRECTIVE NO. 14/1[illegible]

CONTROLLED INSPECTIONS
FINAL INSPECTION AS PER DIRECTIVE 14
FUEL BURNING / STORAGE AS PER 27-794

DRAWING INDEX

SHEET	DESCRIPTION
1 of 5	PARTIAL YARD FLOOR PLAN
2 of 5	DETAILS
3 of 5	NOTES
4 of 5	NOTES
5 of 5	NOTES

CONTAINMENT CAPACITY
AREA OF ROOM = 17'-6" x 12'-6" = 218.75 sq ft
VOLUME BELOW BOTTOM OF HATCH = 218.75 sq ft x 5'-0" = 1092.5 cubic ft
VOLUME OF 8,000 gals TANK = 8,000 gals / 7.48 gals/cubic ft = 1070 cubic ft
VOLUME BELOW HATCH (1092 cubic ft) IS GREATER THAN VOLUME OF TANK THEREFORE CONTAINMENT CAPACITY COMPLIES WITH PARAGRAPH 27-829 (5) OF BUILDING CODE

GENERAL NOTES:
1) ALL FUEL OIL PIPING TO BE SCHEDULE 40 BLACK IRON ADEQUATELY SUPPORTED FROM APPROVED HANGERS UNLESS OTHERWISE NOTED.
2) F.O. TANK INSTALLATION TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NYS DEC PETROLEUM BULK STORAGE PROGRAM SECTION 6NYCRR PARTS 612, 613, AND 614.
3) FLOOR AND WALLS OF TANK ROOM TO BE COATED WITH AN EPOXY COMPATIBLE WITH FUEL OIL UP TO BOTTOM OF HATCH.
4) THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
5) NO CHANGE IN EGRESS, OCCUPANCY OR USE IS INVOLVED UNDER THIS APPLICATION.

APPROVALS

104034858
DEPARTMENT OF BUILDINGS

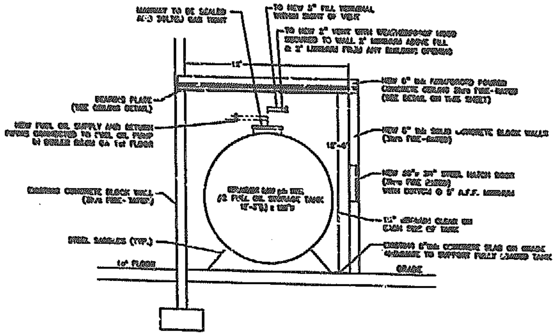
STATE OF NEW YORK
CHARLES [illegible]
No. 076[illegible]
LICENSED PROFESSIONAL ENGINEER

P.E. ST.

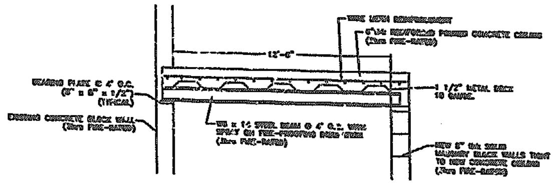
York Engineering Associates, P.C.
[illegible] Sprague Road Suite 204
[illegible]ale, New York 11747
Tel: 631 753-0338 Fax: 631 753-0427

FUEL OIL TANK INSTALLATION
50 NORFOLK STREET, MANHATTAN

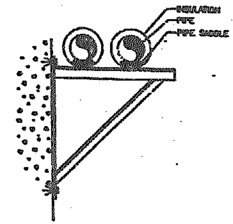
No:	Dwn By:	Rev No:
1783/04A	M.B.	0
Date:	Scale:	Sheet:
1/25/05	AS NOTED	1 of 5



SECTION "A-A"
SCALE 1/8" = 1'-0"
(DETAIL "A")



CEILING DETAIL
NOT TO SCALE
(DETAIL "B")



NOTES:
1. SIZE ALL COMPONENTS TO ADEQUATELY SUPPORT LOAD.
2. USE INSULATION SHIELDS FOR COLD LINES AND PROTECTION SADDLES FOR HOT LINES.
3. FOR COPPER TUBING USE COPPER PLATED HANGERS.

PIPE SUPPORT DETAIL
NOT TO SCALE
(DETAIL "C")

GENERAL NOTES:

1. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
2. NO CHANGE IN EGRESS, OCCUPANCY OR USE IS INVOLVED UNDER THIS APPLICATION.

APPLICATION NUMBER:

APPROVALS:
PAT IACOBAZZO
FEB 1 0 2005
ACCEPTABLE FOR PERMIT
DIRECTIVE NO. 14/1975

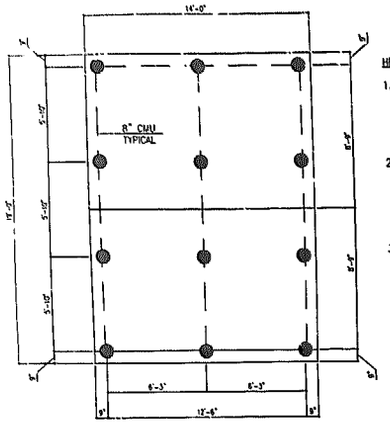
P.E. STAMP
STATE OF NEW YORK
PROFESSIONAL ENGINEER

New York Engineering Associates, P.C.
270 Spagnoli Road Suite 204
Melville, New York 11747

Tel: 631 752-0038 Fax: 631 752-0427

DETAILS
50 NORFOLK STREET, MANHATTAN

No: 1783/04B	Dwn By: M.B.	Rev No: 0
Date: 1/25/05	Scale: NONE	Sheet: 2 of 5



HELICAL PIERS

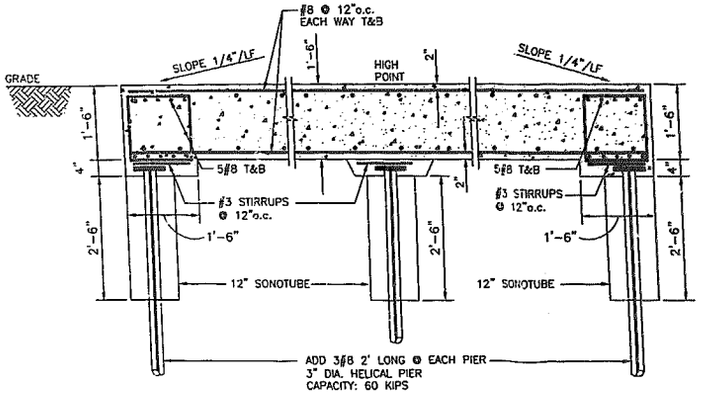
1. PRODUCT DESCRIPTION
   A. HELICAL SHAFT: 3" DIA. AS PER ASTM A 29, A 252, A 53
   B. HELICAL CONFIGURATION: 10", 12", 14" x 1/2" THICK PLATES
   C. PROTECTION: HOT DIP GALVANIZED
   D. CAPACITY: 60 KIPS

2. INSTALLATION
   A. IDENTIFY AND PROTECT ALL UNDERGROUND UTILITIES.
   B. INSTALL HELICAL PIERS IN A SMOOTH MANNER USING A HYDRAULICALLY POWERED TORQUE HEAD.
   C. EACH PIER SHALL SUPPORT A MINIMUM 60 KIP AXIAL LOAD.
   D. ALL PIERS SHALL BE CUT AND CAPPED TO SUPPORT REINFORCEMENT.

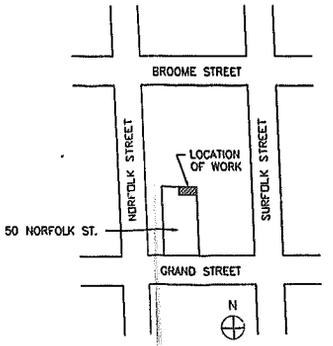
3. INSPECTION
   A. CERTIFICATION OF ALL PIER CAPACITIES SHALL BE MADE BY AN ENGINNER LICENSED IN THE STATE OF NEW YORK, AT AT THE CONTRACTORS EXPENSE.

NOTE:
1. CONCRETE SHALL BE 5,000psi @ 28 DAYS.
2. REBAR SHALL BE A 60, MINIMUM LAP SPLICE SHALL BE 3'-0".

1 OIL TANK FOUNDATION PLAN
SCALE: 1/4"=1'-0"



2 SECTION
SCALE: N.T.S.



3 SITE PLAN
SCALE: N.T.S.

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN COMPLIANCE WITH THE REGULATIONS OF THE BUILDING CODE OF THE CITY OF NEW YORK.
2. NO WORK SHALL COMMENCE WITHOUT THE ISSUANCE OF THE REQUIRED PERMITS BY THE COMMISSIONER.
3. THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF SUBCHAPTER THREE ARTICLE SEVEN AND RS-19 REGARDING THE SAFETY OF PUBLIC AND PROPERTY DURING BUILDING OPERATIONS.
4. ALL NOTES, DIMENSIONS, DETAILS AND JOB CONDITIONS ARE TO BE VERIFIED IN THE FIELD PRIOR TO THE COMMENCEMENT OF WORK. ANY DESCREPENCIES SHALL BE IMMEDIATELY PRESENTED TO THE ENGINEER FOR SUBSEQUENT DIRECTION.
5. DRAWINGS SHALL NOT BE SCALED, DIMENSIONS ARE TO BE USED ONLY.
6. NO FOUNDATION OR EARTHWORK PERMIT SHALL BE ISSUED UNLESS AND UNTIL AT LEAST FIVE DAYS PRIOR WRITTEN NOTICE OF THE PERMIT APPLICATION SHALL HAVE BEEN GIVEN BY THE APPLICANT TO THE OWNERS OF ALL ADJOINING LOTS, BUILDINGS AND SERVICE FACILITIES WHISH MAY BE AFFECTED BY THE PROPOSED FOUNDATION WORK OR EARTHWORK OPERATIONS.
7. ALL FOUNDATION AND EARTHWORK OPERATIONS SHALL BE PERFORMES IN ACCORDANCE WITH THE REQUIREMENTS OF SUBCHAPTERS ELEVEN AND NINETEEN OF THE CODE: AND ALL LOTS, BUILDINGS AND SERVICE FACILITIES ADJOINING THE FOUNDATION AND EARTHWORK AREAS SHALL BE PROTECTED AND SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF SUBCHAPTER ELEVEN AND NINETEEN OF THE CODE AND SUBCHAPTER SEVENTEEN OF CHAPTER ONE OF TITLE TWENTY SIX OF THE ADMINISTRATIVE CODE.

FOUNDATIONS:

1. ALL FOUNDATION WORK SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER ONE SUBCHAPTER ELEVEN "FOUNDATIONS" OF THE CODE.
2. THE BOTTOM SURFACE OF ANY FOOTING SHALL BE CARRIED DOWN AT LEAST FOUR FEET BELOW THE LOWEST LEVEL OF THE ADJOINING GROUND OR PAVEMENT SURFACE THAT IS EXPOSED TO FROST.
3. NO FOUNDATION SHALL BE PLACED ON FROZED SOIL. NO FOUNDATION SHALL BE PLACED IN FREEZING WEATHER UNLESS PROVISION IS MADE TO MAINTAIN THE UNDERLYING SOIL FREE OF FROST.
4. NO FOUNDATION SHALL BE LAID ON SOIL THAT HAS BEEN DISTRUBED BY SEEPAGE UNLESS REMEDIAL MEASURES, AS DIRECTED BY THE ENGINEER ARE TAKEN.
5. ALL FOOTINGS SHALL BEAR DIRECTLY ON UNDISTRUBED OR SATISFACTORILY COMPACTED SOIL HAVING A MINIMUM SAFE CAPACITY AS INDICATED ON THE CONTRACT DRAWINGS.
6. THE SOIL MATERIAL DIRECTLY UNDERLYING FOOTINGS, FOUNDATION PIERS AND FOUNDATION WALLS SHALL BE INSPECTED BY AN ARCHITECT/ENGINEER AFTER EXCAVATION AND IMMEDIATELY PRIOR TO FOOTING CONSTRUCTION.
7. ALL UNDERPINNING OPERATIONS AND THE CONSTRUCTION AND EXCAVATION OF TEMPORARY OR PERMANENT COFFERDAMS, CAISSONS, BRACED EXCAVATED SURFACES, OR OTHER CONSTRUCTIONS OR EXCAVATIONS REQUIRED FOR OR AFFECTING THE SUPPORT OF ADJACENT PROPERTIES OR BUILDINGS SHALL BE SUBJECT TO CONTROLLED INSPECTIONS.
8. WHERE THE BOTTOM OF FOOTINGS ARE AT DIFFERENT LEVELS, USE STEP FOOTINGS FROM LOW LEVEL TO HIGH LEVEL ONE VERTICLE ON TWO HORIZONTAL.
9. BEFORE ANY WATERPROOFING OF FOUNDATION WALLS IS APPLIED, ALL SURFACES SHALL BE DRY, CLEAN AND FREE OF ANY LOOSE MORTAR OR ANY MATERIAL. ALL WIRE SHALL BE CUT AND ALL SPACES AROUND SERVICE PIPES SHALL BE SEALED. WATERPROOFING SHALL CONSIST OF TWO COATS OF TROWELLED COMMERCIAL ASPHALTIC MATERIAL OR HOT ROOFERS PITCH.

CONCRETE:

1. CONCRETE MATERIALS, DESIGN, AND CONSTRUCTION SHALL MEET REQUIREMENTS OF THE REFERENCED STANDARD 10-3 AND ACI-89.
2. CONCRETE FOR FOUNDATION WALLS, FOOTINGS AND FLOOR SLABS ON GRADE SHALL HAVE A COMPRESSIVE STRENGTH OF F'c= 5,000 psi @ 28 DAYS, UNLESS OTHERWISE NOTED.
3. THE CONCRETE MIX SHALL BE DESIGNED, INSPECTED AND TESTED BY AN INDEPENDENT LABORATORY LICENSED BY THE BUILDING DEPARTMENT OF THE CITY OF NEW YORK. THREE TEST CYLINDERS SHALL BE TAKEN AT 50 CUBIC YARD INTERVALS OR FRACTION THEREOF. CEMENT SHALL CONFORM TO ASTM C150. AGGREGATES SHALL CONFORM TO ASTM C33. AIR ENTRAINMENT SHALL CONFORM TO ASTM C260.
4. ALL REINFORCING STEEL SHALL BE ASTM BILLET STEEL A615 GRADE 60.
5. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 FOR SMOOTH WIRE AND A497 FOR DEFORMED WIRE.
6. REINFORCEMENT SHALL BE ACCURATELY PLACED AND ADEQUATELY SUPPORTED BEFORE CONCRETE IS PLACED.
7. ALL REINFORCEMENT SHALL BE BENT COLD, TO A MINIMUM OF SIX TIMES THE NORMAL DIAMETER OF THE BAR OR WIRE.
8. AT THE TIME OF CONCRETE PLACEMENT, THE REINFORCEMENT SHALL BE FREE OF MUD, OIL OR OTHER NONMETALLIC COATINGS THAT ADVERSLY AFFECT BONDING CAPACITY.
9. LAP SPLICE LENGTH SHALL BE A MINIMUM OF THIRY TIMES THE NORMAL DIAMETER OF THE REINFORCEMENT.
10. CONSTRUCTION JOINTS IN THE FLOOR SLAB SHALL BE LOCATED THE SPANS MIDDLE
11. ALL EMBEDMENTS SHALL BE IN PLACE PRIOR TO CONCRETE PLACEMENT. ALUMINUM BE COATED TO PREVENT ELECTROLYTIC ACTION BETWEEN THE ALUMINUM AND STEEL
12. THE FLOOR SLAB SHALL BE BROUGHT TO A HARD TROWLED FINISH.

MASONRY:

1. ALL MATERIALS AND CONSTRUCTION METHODS REGARDING REINFORCED AND UNREINFORCED MASONRY SHALL COMPLY WITH REFERENCE STANDARD RS 10, RS 10-1A AND RS 10-2 OF THE CODE.
2. THE QUALITY OF ALL MASONRY UNITS SHALL CONFORM TO THE STANDARD AND GRADE SHOWN IN TABLE 10-1.1 MATERAIL STANDARDS; F'm= 1,900 psi. MORTAR SHALL CONFORM TO TABLE RS 10-1.2 ,TYPES OF MORTAR PERMITED.
3. PROVIDED MINIMUM#8 VERTICLE AND HORIZONTAL REINFORCEMENT AT THE FOLLOWING LOCATIONS:
   a. TOP OF WALLS.
   b. AT WALL ENDS.
   c. 24" EITHER SIDE OF A WINDOW.
   d. AT THE TOP AND BOTTOM OF ALL OPENINGS.
   e. MAXIMUM HORIZONTAL SPACING FOR VERTICLE REINFORCEMENT SHALL BE 10'-0".
4. MINIMUM HORIZONTAL REINFORCEMENT SHALL BE 0.0007 THE CROSS-SECTION AREA OF THE WALL SPACED AT 16" ON CENTER.
5. ANCHORS SHALL BE EMBEDED IN REINFORCED BOND OR REINFORCED VERTICLE CELLS.
6. ROOF CONSTRUCTION SHALL BE SECURELY ANCHORED TO LOADBEARING MASONRY WALLS WITH A MINIMUM 1/2" DIAMETER BOLT SPACED AT 8'-0" ON CENTER WITH 1/4" DIAMETER BOLTS EMBEDED 16".
7. FLOOR JOISTS SHALL BE SECURED AT 6'-0" ON CENTER WITH 1/4" DIAMETER BOLTS EMBEDED 16".
8. MASONRY ABOVE OPENINGS SHALL BE SUPPORTED BY BUTTRESSED ARCHES OR BY LINTELS THAT BEAR ON THE WALL FOR AT LEAST 4"
9. TEMPORARY BRACING SHALL BE USED WHENEVER NECESSARY TO TAKE CARE OF ANY LOADS TO WICH THE WALLS MAY BE SUBJECTED TO DURING ERECTION. SUCH BRACING SHALL REMAIN IN PLACE AS LONG AS MAY BE REQUIRED FOR SAFETY.
10. ALL CEMENTITITIOUS MATERIALS, AGGREGATES, AND WATER SHALL BE MIXED FOR A MINIMUM OF 5 MINUTES IN A MECHANICAL BATCH MIXER. SLUM SHALL NOT EXCEED 11". ALL MORTAR AND GROUT SHALL BE USED WITHIN 2-1/2 HOURS OF INITIAL MIXING AND NO MORTAR OF GROUT SHALL BE USED AFTER IT HAS BEGUN TO SET.
11. MASONRY UNITS SHALL NOT BE WETTED BEFORE LAYING. NO FROZEN MATERIAL OR MATERIALS CONTAINING ICE MAY BE USED.
12. THE FACING AND BACKING OF MASONRY WALLS SHALL BE BONDED WITH CORROSION-RESISTANT 3/16" DIAMETER STEEL TIES EMBEDDED IN HORIZONTAL JOISTS WITH SPACING NOT TO EXCEED TWO SQUARE FEET OF WALL AREA.

4 STRUCTURAL GENERAL NOTES
SCALE: N.T.S.

REVISIONS :

ANTHONY GENNARO P.E.
14 BEENA WAY
MANALAPAN, N.J. 07726
OFFICE# 1-732-972-8496
FAX# 1-732-972-7562

104650478
DEPARTMENT OF BUILDINGS

PROFESSIONAL CERTIFICATION
DEPARTMENT OF BUILDINGS
STATE OF NEW YORK

A H M C
NORFOLK STREET
N.Y. N.Y. 10022

OIL TANK FOUNDATION PLAN & DETAILS

DATE: 10.30.06
CHECK BY : A.G.
DWN.BY : F.G.
SCALE : AS NOTED
SHEET NO. : S-1
JOB NO. :

384 Grand Street
(Block 346, Lot 95)

LANGAN

B Form 54 (Rev. 8/85)

THE CITY OF NEW YORK

DEPARTMENT OF BUILDINGS Alt. #231/83

CERTIFICATE OF OCCUPANCY

BOROUGH MANHATTAN DATE: JUN 17 1987 NO. 9047

ZONING DISTRICT R8

This certificate supersedes C.O. No.

THIS CERTIFIES that the ~~new~~-altered-~~existing~~-building-premises located at
384 Grand Street Block 346 Lot 56

CONFORMS SUBSTANTIALLY TO THE APPROVED PLANS AND SPECIFICATIONS AND TO THE REQUIREMENTS OF ALL APPLICABL LAWS, RULES, AND REGULATIONS FOR THE USES AND OCCUPANCIES SPECIFIED HEREIN

PERMISSIBLE USE AND OCCUPANCY

STORY	LIVE LOAD LBS PER SQ. FT.	MAXIMUM NO. OF PERSONS PERMITTED	ZONING DWELLING OR ROOMING UNITS	BUILDING CODE HABITABLE ROOMS	ZONING USE GROUP	BUILDING CODE OCCUPANCY GROUP	DESCRIPTION OF USE
Cellar	O.G.						Boiler room and storage
1st	100		2	5	6/2	E/J2	2 Apartments and 3 stores
2nd	40		6	15	2	J2	6 Apartments Class "A"
3rd	40		6	15	2	J2	6 Apartments Class "A"
4th	40		6	15	2	J2	6 Apartments Class "A"
5th	40		6	15	2	J2	6 Apartments Class "A"

Old Law Tenement

Old Code

THIS CERTIFICATE OF OCCUPANCY MUST BE POSTED WITHIN THE BUILDING IN ACCORDANCE WITH THE RULES OF THE DEPARTMENT PROMULGATED MARCH 31ST, 1982

OPEN SPACE USES
(SPECIFY-PARKING SPACES, LOADING BERTHS, OTHER USES, NONE)

KF

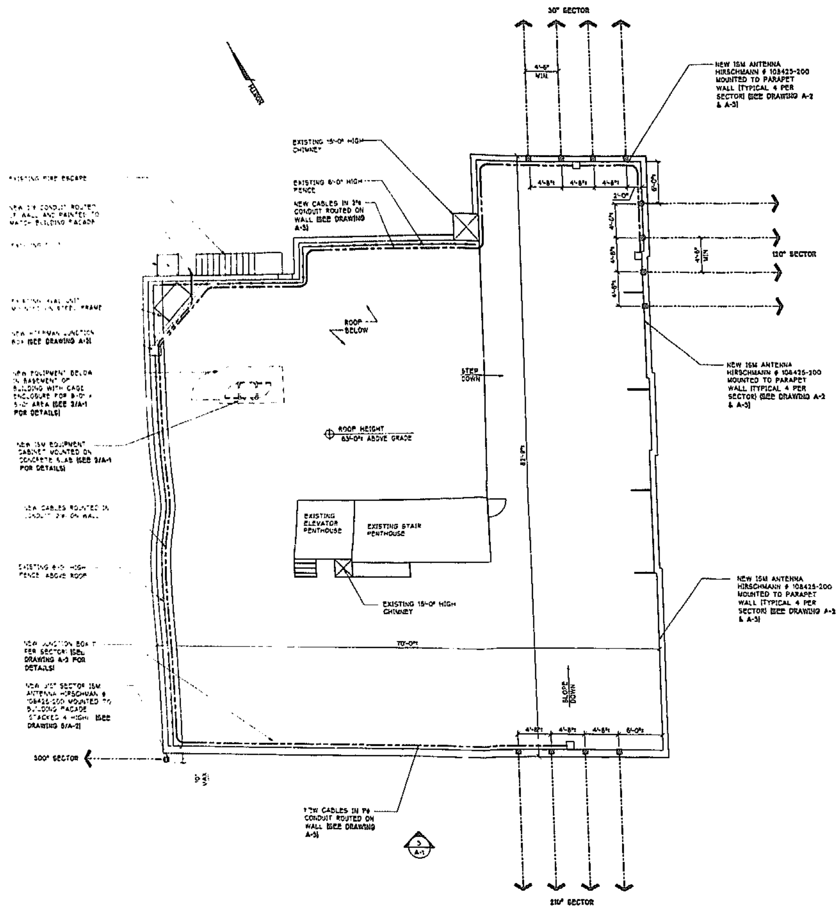
NO CHANGES OF USE OR OCCUPANCY SHALL BE MADE UNLESS A NEW AMENDED CERTIFICATE OF OCCUPANCY IS OBTAINED

THIS CERTIFICATE OF OCCUPANCY IS ISSUED SUBJECT TO FURTHER LIMITATIONS, CONDITIONS AND SPECIFICATIONS NOTED ON THE REVERSE SIDE.

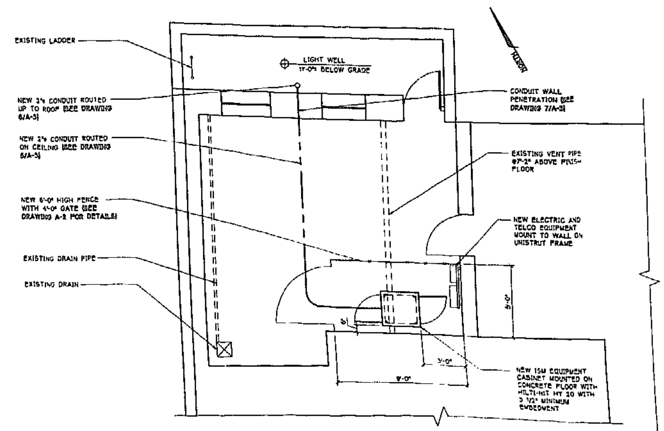
George C. Salonia — BOROUGH SUPERINTENDENT

[signature] — COMMISSIONER

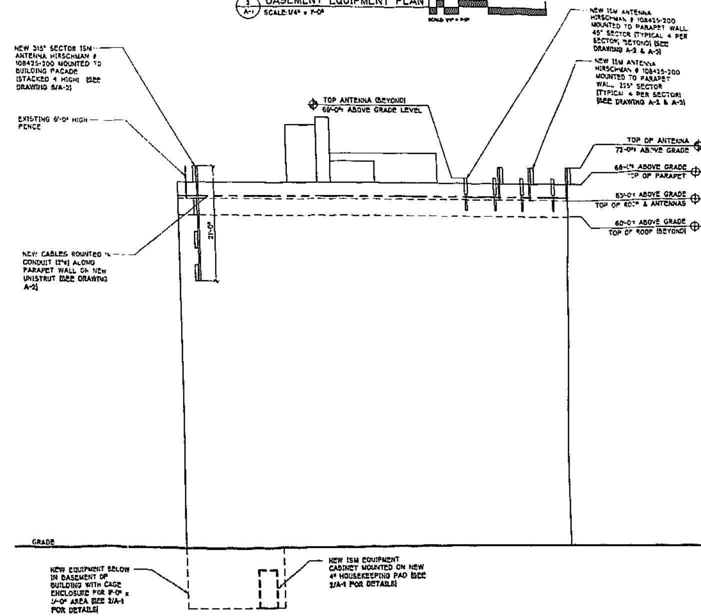
☒ ORIGINAL ☐ OFFICE COPY-DEPARTMENT OF BUILDINGS ☐ COPY



1 ROOF PLAN A-1 SCALE: 1/8" = 1'-0"



2 BASEMENT EQUIPMENT PLAN A-1 SCALE: 1/4" = 1'-0"



3 GRAND STREET ELEVATION A-1 SCALE: 3/32" = 1'-0"

ARCNET ARCHITECTS, INC
• Telecommunications
• Architecture
• Engineering
• Planning
• Construction Administration
670 North Beers Street, Building 2
Holmdel, New Jersey 07733
Tel: 732.739.3200 Fax: 732.739.0440

4/30/01
NY # 010502-1
ROBERT P. JUENGERT, AIA

NO.	DATE	REVISIONS
1	5/30/00	PER CLIENT COMMENTS
2	6/8/00	PER CLIENT COMMENTS

NO.	DATE	SUBMISSIONS
3	6/9/00	ISSUED FOR FILING
2	5/30/00	RE-ISSUED FOR REVIEW
1	4/14/2K	ISSUED FOR REVIEW

RF ENGINEER DATE
SITE ACQUISITION DATE
OWNER DATE

Metricom

384 GRAND STREET
384 GRAND STREET
NEW YORK, NY

SITE#NYC2C02A

ROOF PLAN & EQUIPMENT ROOM

OCT 30 2000

10-848893-

RJo	AS NOTED
DDe	4/12/00
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A-1

PLUMBING SPECIFICATIONS

1) GENERAL

A. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF PIPING ONLY. PROVIDE ALL NECESSARY SUPPORTS, PIPE, FITTINGS AND VALVES THAT ARE REQUIRED FOR COORDINATION OF THIS WORK WITH ALL OTHER TRADES AND THE EXISTING STRUCTURE.

B. CONFIRM SIZES AND LOCATIONS OF ALL EXISTING PIPING PRIOR TO START OF WORK.

C. CONNECTIONS TO EXISTING WORK: AT ODD HOURS TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. OBTAIN APPROVAL OF BUILDING MANAGEMENT PRIOR TO INSPECTION OR COMMENCING WORK.

D. PROVIDE WORKMANSHIP OF HIGHEST GRADE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT BUILDING CODE.

E. PROVIDE ONE YEAR GUARANTEE AGAINST DEFECTIVE WORKMANSHIP AND MATERIAL.

F. ALL MATERIAL, PLUMBING ITEMS, ETC., SHALL BE NEW AND BEST OF ITS KIND, UNLESS OTHERWISE NOTED.

2) SCOPE OF WORK

A. ALL REQUIRED LABOR, MATERIALS AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE SAFE INSTALLATION OF WORK IN FULL CONFORMITY WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND/OR HEREIN SPECIFIED, INCLUDING THE FOLLOWING:

1. SANITARY DRAINAGE AND VENT SYSTEM, INCLUDING CONNECTIONS TO EXISTING PIPING, PLUMBING FIXTURES EQUIPMENT AND INDIRECT WASTE PIPING.
2. DOMESTIC WATER SUPPLY SYSTEM, INCLUDING CONNECTIONS TO EXISTING PIPING, VALVES, PLUMBING FIXTURES AND EQUIPMENT
4. PLUMBING FIXTURE ROUGHING.
5. PLUMBING EQUIPMENT
6. INSULATION.
7. ROUGH CUTTING AND PATCHING.
8. SHOP DRAWINGS.
9. ACCESS DOORS
10. TESTING.
11. DISINFECTION OF POTABLE WATER SYSTEM.

3) GENERAL ITEMS

A. AIR CHAMBERS: 12 INCHES HIGH, PROVIDE ON INDIVIDUAL HOT AND COLD WATER BRANCHES TO FIXTURES.

B. SHOCK ABSORBERS: PROVIDE ON INDIVIDUAL HOT AND COLD WATER BRANCHES TO EQUIPMENT AND ON WATER LINES EQUIPPED WITH SOLENOID VALVES. J.R. SMITH SERIES 5000.

C. ESCUTCHEONS: PROVIDE EXPOSED PIPING BOTH BARE AND COVERED, WITH CP CAST BRASS ESCUTCHEONS ON BOTH SIDES WHERE PASSING THROUGH CEILINGS, WALLS OR PARTITIONS.

D. VACUUM BREAKERS: PROVIDE VACUUM BREAKERS SIMILAR TO ZURN.

E. VALVE TAGS AND CHARTS: PROVIDE 2 INCH SQUARE, 18B AND S GAUGE ALUMINUM WITH STAMPED NUMBERED TAGS, FILL IN WITH BLACK PAINT. PROVIDE ON CONTROL VALVES EXCEPT THOSE CONTROLLING A SINGLE FIXTURE AND LOCATED ADJACENT TO FIXTURES. FASTEN WITH BRASS HOOK OR CHAIN. PROVIDE FRAMED CHARTS LISTING OPERATION OF EACH SYSTEM, LOCATION AND PURPOSE OF VALVES. COORDINATE WITH EXISTING BUILDING VALVE CHARTS.

F. SLEEVES: PROVIDE NO. 22 USSG GALVANIZED IRON SLEEVES EXTENDED THROUGH CONSTRUCTION IN CEILINGS, WALLS AND PARTITIONS. FOR INSULATED PIPING, SIZED TO ALLOW INSULATION TO PASS THROUGH SLEEVE. PROVIDE 1/2 INCH SPACE BETWEEN PIPE AND/OR INSULATION AND SLEEVE. SEAL ALL SLEEVES IN ACCORDANCE WITH BUILDING CODE AND FIRE DEPARTMENT REQUIREMENTS.

G. SUPPORTS:

1. SUPPORT PIPING AT DISTANCES AS REQUIRED BY CODE.
2. ALL PIPING SHALL BE INDEPENDENTLY SUPPORTED FROM STRUCTURE. PIPE SUPPORTED FROM PIPE, CHAIN, STRAP, PERFORATED BAR, OR WIRE HANGERS AND ARE NOT PERMITTED. SUPPORT PIPING FROM WALL BRACKETS WHERE REQUIRED.
3. FOR HORIZONTAL PIPING 3 INCH AND LARGER, GALVANIZED "CLEVIS" HANGERS, GRINNELL 260. TRAPEZE FOR MULTIPLE LINES.
4. PIPING 2 INCH OR LESS PROVIDE ELECTROPLATED SOLID BAND HANGER, GRINNELL AUTO GRIP F730.
5. SUPPORT HORIZONTAL BRANCH PIPING IN PIPE CHASES FROM WALL BRACKETS SUPPORTED FROM STRUCTURE.
6. SUPPORT MATERIALS: SAME AS PIPING MATERIAL, EXCEPT AS NOTED

H. ACCESS DOORS

1. 12 IN. X 12 IN. NO. 4 FINISH STAINLESS STEEL FLUSH TYPE, LOCATE AND SET AFTER REVIEW. DOOR AND FRAME WITH METAL WINGS FOR KEYING INTO CONSTRUCTION WITH CONCEALED HINGES AND SCREWDRIVER OPERATED STAINLESS STEEL CAM LOCK. KARP STYLE DSC-214M OR KRP-150-FR IN FIRE RATED CONSTRUCTION.

I. LABELING

1. ON ALL PIPING IN CEILING, 10 FT. ON CENTERS, INDICATING SYSTEM, SIZE AND DIRECTION OF FLOW.

J. DISSIMILAR METALS

1. PROVIDE BRASS OR COPPER WATER PIPING CONNECTED TO GALVANIZED PIPE AND FOR ANY OTHER DISSIMILAR METALS WITH DIELECTRIC FITTINGS.

K. SUBMITTALS

1. SHOP DRAWINGS: BEFORE COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT A LIST OF MANUFACTURE SUBSTITUTIONS, FOR REVIEW AND ACCEPTANCE. SUBSTITUTION WILL NOT BE ACCEPTED AT ANY OTHER TIME.
   A) AFTER VERIFYING ALL FIELD CONDITIONS CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL.
   B) LAYOUT OF DRAWINGS SHOWING DEVIATIONS SHALL HAVE BEEN COORDINATED WITH THE OTHER TRADES AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION FOR APPROVAL.
   C) AT THE TIME OF EACH SUBMISSION CONTRACTOR IS TO IDENTIFY ANY DEVIATION FROM THE CONTRACT DOCUMENTS. DETERMINE DEVIATIONS FROM SPECIFICATIONS AND DRAWINGS AND INDICATE BY 'CLOUDING' ON SHOP DRAWINGS.
   D) SUBMIT THE FOLLOWING:
      (1) PIPE, FITTINGS AND JOINTS.
      (2) VALVES.
      (3) SUPPORTS.
      (4) PLUMBING FIXTURES, TRIM, TRAPS, ETC.
      (5) INSULATION.
      (6) SLEEVES.
      (7) SOLDER.

4) MATERIALS

A. SANITARY DRAINAGE AND VENT PIPING

1. SANITARY DRAINAGE AND VENT PIPING: IRON NO-HUB WITH COUPLINGS SIMILAR TO HUSKY SERIES AS PER SISPI 301 OR ASTM A888.

B. WATER PIPING

1. COPPER TUBING TYPE 'L' AND WROUGHT COPPER OR CAST BRONZE FITTINGS WITH 95-5 SOLDERED JOINTS AS PER ASTM B88
2. ALL EXPOSED WATER PIPING TO PLUMBING FIXTURES (AND KITCHEN/BAR EQUIPMENT) SHALL BE CHROME PLATED.

C. VALVES-DOMESTIC WATER

1. SHUT-OFF VALVES: BRONZE RISING STEM GATE TYPE 125 PSI WSP, SOLDER JOINT END, STOCKHAM NO. B-109 OR BALL VALVES SIMILAR TO APOLLO SERIES.

D. NON-LUBRICATED GAS COCKS

1. BRONZE, 175 PSI WOG, SIMILAR TO CRANE # 252.

5) INSULATION

A. INSULATE WATER PIPING, VALVES: 4 LB. DENSITY FIBERGLASS ONE PIECE MOLDED SECTIONAL PIPE COVERING. MAXIMUM K FACTOR 0.26 AT 75 DEG F MEAN

B. FIRE RETARDANT ALL SERVICE JACKET ON PIPE INSULATION. MAXIMUM FLAMESPREAD AND SMOKE RATING 25/50.

C. VALVES AND FITTINGS: PREMOLDED FIBERGLASS FITTINGS OR RADIAL MITERED SEGMENTS OF PIPE INSULATION TAPED ON, INSULATING CEMENT, FIBERGLASS REINFORCING CLOTH, AND MASTIC. VAPOR SEAL INSULATION ON CW PIPING. THICKNESS, SAME AS REQUIRED ON PIPING.

D. CW PIPING: 1/2 INCH THICK FIBERGLASS SECTIONAL PIPE COVERING WITH VAPOR BARRIER JACKET. NO STAPLES PERMITTED.

E. HW PIPING: 1 INCH FIBERGLASS SECTIONAL PIPE COVERING.

F. HEAT TRACING IS PROVIDED BY ELECTRICAL CONTRACTOR.

6) TESTS

A. TEST ALL SYSTEMS AS REQUIRED BY BUILDING CODE.

7) DISINFECTION OF POTABLE WATER SUPPLY SYSTEM

A. DISINFECT DOMESTIC WATER PIPING AS REQUIRED BY BUILDING CODE.

8) WORK NOT INCLUDED

A. FINAL PATCHING AND PAINTING.

9) PLUMBING FIXTURES

A. ALL PLUMBING FIXTURES WILL BE SPECIFIED BY ARCHITECT.
B. PROVIDE CHAIR CARRIER SUPPORT FOR NEW HANDICAPPED WATER CLOSET. WALL HUNG LAVATORY- SIMILAR TO J.R. SMITH

ADDITIONAL CONSIDERATIONS:

1. ANY EXISTING PIPING SYSTEMS REQUIRING MODIFICATIONS AND/OR ALTERATIONS WILL REQUIRE FIELD VERIFICATION PRIOR TO WORK STARTING. THE NEW INSTALLED PIPING SHALL BE ISOLATED FROM THE EXIST'G SYSTEM DURING THE PERFORMANCE OF REQUIRED FIELD TEST.
2. PRIOR TO FINAL PIPING CONNECTIONS TO EXIST'G PIPING, ALL NEW PIPING SHALL BE THOROUGHLY BLOWN OUT AND FLUSHED AT LEAST TWICE, TO REMOVE ALL ACCUMULATION OF DIRT AND DEBRIS.
4. PROVIDE WATER HAMMER ARRESTOR ON EQUIPMENT WITH QUICK CLOSING VALVES.
5. PROVIDE AND INSTALL REQUIRED AIR VENTS AT HIGH SPOTS IN THE PIPING SYSTEM.
6. SANITARY/GREASE LINES SHALL BE PERIODICALLY TREATED WITH A BACTERIA ENZYMES TO KEEP THE LINES FREE FLOWING.
7. PROVIDE SUITABLE SIGN INDICATING LOCATION WHERE CONTROL VALVES ARE LOCATED.
8. PROVIDE SECONDARY CONTAINMENT PAN FOR HOT WATER HEATER AND PIPE RELIEF TO MOP SINK.

GREASE TRAPS SHALL BE COMPLETELY ACCESSIBLE FOR CLEANING AND MAINTENANCE

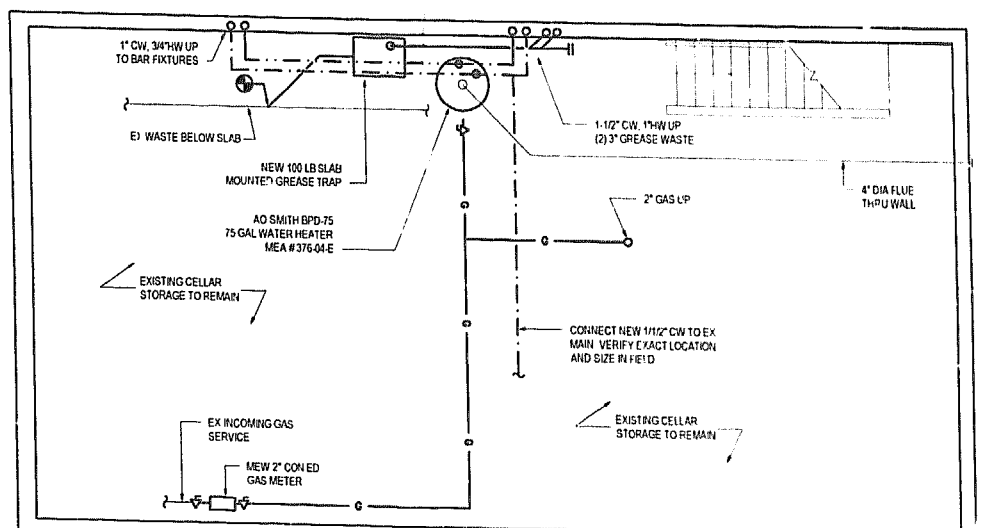
FLOOR DRAIN (FD) – J.R. SMITH OR APPROVED EQUAL. PROVIDE 3" DRAIN, BRONZE STRAINER. PROVIDE FLASHING TO EX. FLR SLAB.

FLOOR SINK (FS) – J.R. SMITH OR APPROVED EQUAL. 8"x6"x8" PORCELAIN, WITH 3" WASTE LINE. PROVIDE FLASHING TO EXIST'G FLR SLAB.

FLOOR DRAINS/SINKS SHALL BE VISIBLE AND EASILY ACCESSIBLE FOR CLEANING AND MAINTENANCE

WATER CONNECTION NOTE:

1. PROVIDE STOP VALVES AT ALL WATER CONNECTIONS TO FIXTURE AND EQUIPMENT.
2. PROVIDE VACUUM BREAKERS AT WATER SUPPLY CONN. TO ICE MAKER, COFFEE MAKERS AND MOP SINK.
3. PROVIDE HOT WATER MIXING VALVE AT ALL HAND SINKS. HW DISCHARGE TEMPERATURE TO BE SET AT 110 DEGREES F.
4. DOMESTIC HOT WATER HEATER SHALL BE SET TO 140 DEGREES F.



1 CELLAR PLUMBING PLAN
SCALE: 1/4"=1'-0"

RECEIVED 06 2006

PROFESSIONAL CERTIFICATION
DEPARTMENT OF BUILDINGS
STATE OF NEW YORK

TWO BOOTS

OWNER
PHILIP HARTMAN
Avenue A
10003
Tel 212-xxx-xxxx

334 GRAND STREET
NEW YORK, NY 10002

DESIGN ARCHITECT
GLEN COBEN ARCHITECTURE + DESIGN PLLC
13 East 37th Street 7th floor
new york ny 10016
TEL 212 685 2775
FAX 212 689 1033
email glen@glencobencompany.com

CONSULTANTS
MEP
Rakshan Malek Associates
26 Oak Road
Saddle River NJ 07458
TEL 201 818 2263
email rmalek@optonline.com

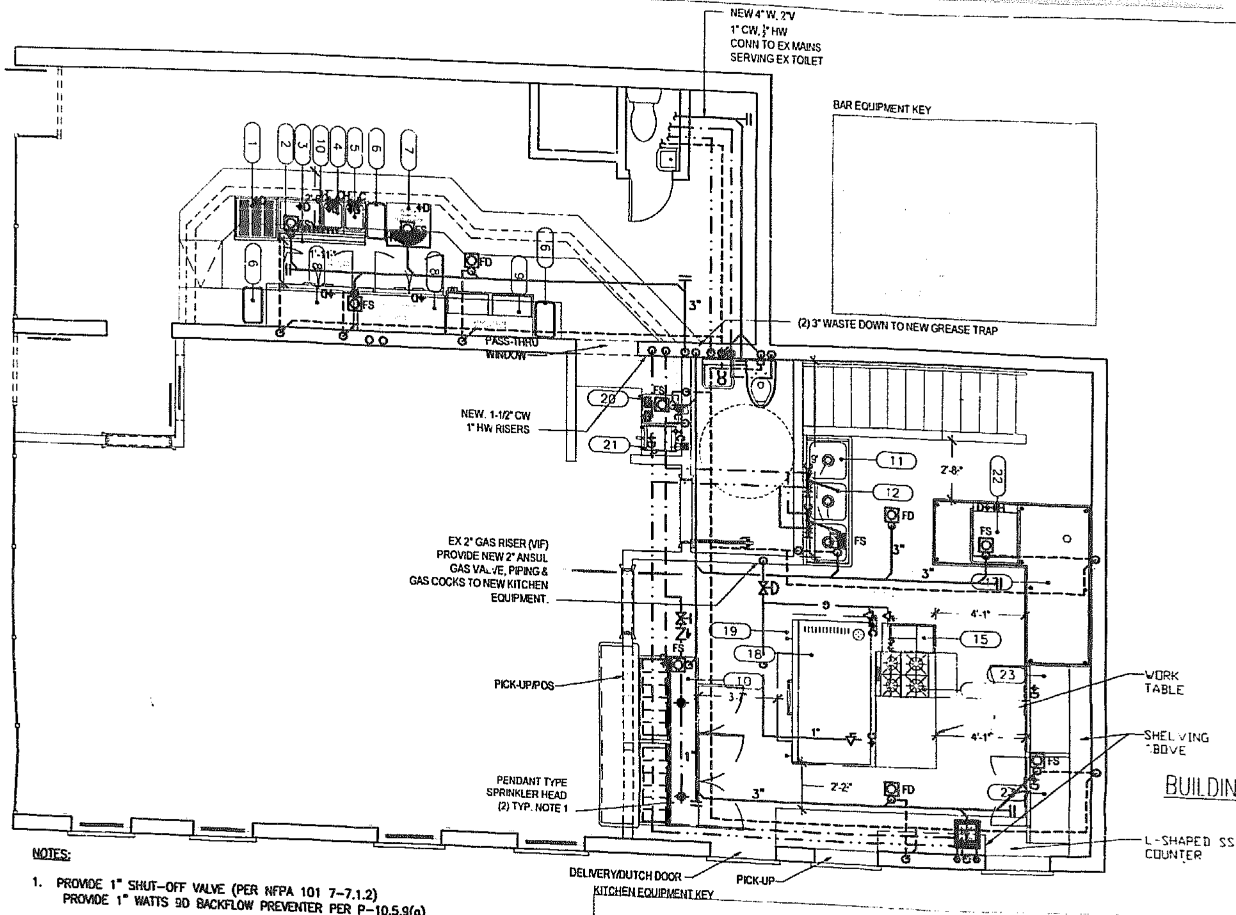
LOCATION PLAN

STAMP

SHEET TITLE
CELLAR PLUMBING PLAN & NOTES

	03-17-06
	1/4"=1'-0"
	12
	MM
	03-17-06
	0023

P-02



NOTES:

1. PROVIDE 1" SHUT-OFF VALVE (PER NFPA 101 7-7.1.2)
   PROVIDE 1" WATTS 9D BACKFLOW PREVENTER PER P-10.5.9(a)

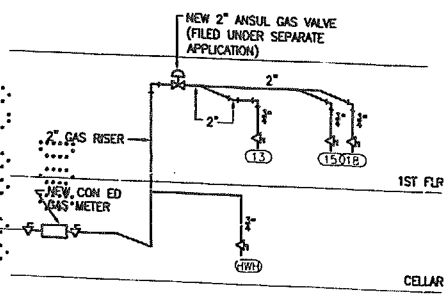
PLUMBING PLAN

PLUMBING SYMBOL LIST

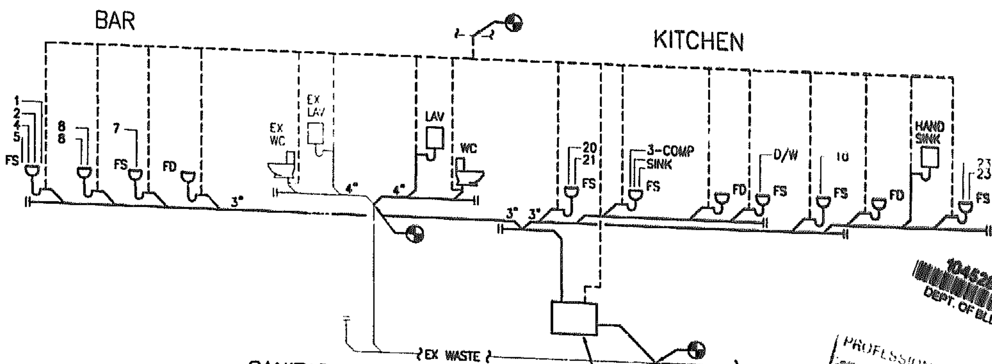
- COLD WATER
- HOT WATER
- HOT WATER RETURN
- VENT
- WASTE
- UNDERGROUND WASTE
- SD — STORM DRAIN
- IW — INDIRECT WASTE
- G — GAS
- GAS COCK
- ANSUL GAS VALVE
- CODP — CLEAN OUT DECK PLATE
- FS / FD — FLOOR SINK/FLOOR DRAIN
- NON-FREEZE WALL HYDRANT
- SHUT OFF VALVE
- BACKFLOW PREVENTER
- SPRINKLER SHUT OFF VALVE

BUILDING DEPARTMENT NOTES FOR PLUMBING

1. ALL PLUMBING WORK SHALL BE IN STRICT ACCORDANCE WITH THE N.Y.C. BUILDING CODE, LOCAL LAW NO. 76 OF THE CITY OF NEW YORK, EFFECTIVE DECEMBER 6, 1968, AND ALL CURRENT AMENDMENTS.
2. CHANGES IN DIRECTION IN DRAINAGE PIPING SHALL BE MADE WITH THE APPROPRIATE USE OF 45 DEGREE WYES, LONG SWEEPS, SHORT SWEEPS, SIXTH, QUARTER, EIGHTH OR SIXTEENTH BENDS, OR BY A COMBINATION OF THESE OR EQUIVALENT FITTINGS.
3. SANITARY TEES AND QUARTER BENDS MAY BE USED IN DRAINAGE LINES ONLY WHERE THE DIRECTION OF FLOW IS FROM THE HORIZONTAL TO THE VERTICAL.
4. SHORT SWEEPS WILL BE PERMITTED IN DRAINAGE PIPING 3 INCHES DIAMETER OR LARGER FOR ANY OFFSETS EITHER HORIZONTAL OR VERTICAL.
5. SANITARY DRAINAGE AND VENT PIPING UNLESS OTHERWISE NOTED CAST IRON HUB AND SPIGOT SOIL PIPE AND DRAINAGE FITTINGS, OR CAST IRON NO HUB WITH STAINLESS STEEL COUPLINGS.



GAS RISER DIAGRAM



SANITARY RISER DIAGRAM

104528236
DEPT. OF BLDGS

PROFESSIONAL CERTIFICATION
DEPARTMENT OF BUILDINGS
STAMP NUMBER 8 OF 12
SEP 06 2006

TWO BOOTS

OWNER
PHILIP HARTMAN

384 GRAND STREET
NEW YORK, NY 10002

DESIGN ARCHITECT
GLEN COBEN ARCHITECTURE + DESIGN PLLC

CONSULTANTS
MEP
Rakshan Malek Associates

LOCATION PLAN

STAMP

FIRST FLR. PLUMBING PLAN & RISERS

P-01

APPENDIX C

BHH Synagogue Stabilization Drawings

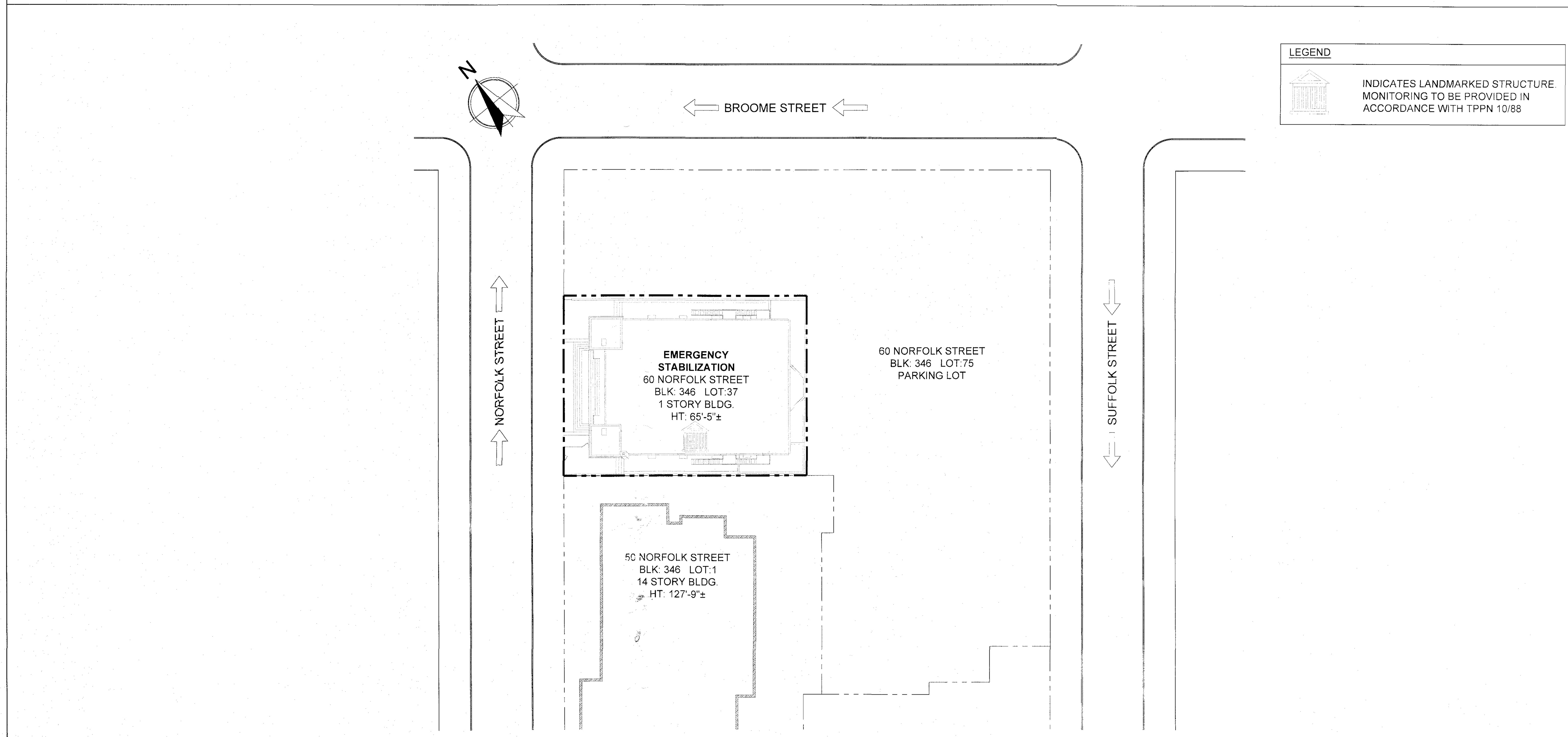
EMERGENCY STABILIZATION

(DOB JOB #: 123199653)

60 NORFOLK STREET
NEW YORK, NY 10002

03/05/19 △1

PLOT PLAN SCALE: 1/32"=1'-0"



DRAWING INDEX

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3	OT-002.00	NYC BLDG. CODE	•	
SURVEYING AND MONITORING				
4	OT-003.00	MONITORING PROTOCOL	•	
EXISTING CONDITIONS				
5	OT-004.00	EXISTING LOGISTICS PLAN	•	
DEMOLITION				
6	OT-100.00	SITE LOGISTICS PLAN	•	
7	OT-101.00	SITE LOGISTICS ELEVATIONS A & B	•	
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GENERAL NOTES

SITE INFORMATION

1. THE PLANS ENCLOSED DEPICT THE EXTENT, SEQUENCE, MEANS AND METHODS FOR THE PROPOSED EMERGENCY STABILIZATION OF THE SYNAGOGUE BUILDING LOCATED AT 60 NORFOLK STREET, NEW YORK, NY. THE OBJECTIVE OF THE WORK IS TO REMOVE UNSTABLE AND STRUCTURAL UNSOUND PORTIONS OF THE BUILDING TO A SAFE LEVEL.
2. BUILDING/PROPERTY DESCRIPTION
   - 2.1. BLOCK: 346; LOT: 37; BIN: 1004155
   - 2.2. ZONING DISTRICT: R8; MAP 12C
   - 2.3. BUILDING HEIGHT: 1 STORY 66 FT ± HIGH
   - 2.4. LOT SIZE: 7,438 SF; LOT FRONTAGE: 100.75 FT; GROSS FLOOR AREA: 4,600 SF
   - 2.5. LAND USE: PUBLIC FACILITIES AND INSTITUTIONS
   - 2.6. THE BUILDING IS CURRENT VACANT.
   - 2.7. STRUCTURE DESCRIPTION: THE BUILDING IS CONSTRUCTED OF MASONRY LOAD BEARING WALLS/PIERS; A WOOD FRAME ROOF STRUCTURE; WOOD FRAME MEZZANINE AND GROUND FLOOR; AND MASONRY OR CONCRETE FOUNDATION.
   - 2.8. **BUILDING CONDITION**. THE BUILDING EXPERIENCED A 3X ALARM FIRE ON MAY 14, 2017 RENDERING PORTIONS OF THE BUILDING UNSTABLE AND STRUCTURAL UNSOUND. DEMOLITION OPERATIONS SHALL BE PERFROMED AS EMERGENCY WORK ORDER ORDER OF DOB PER CLASS 1 VIOLATION CONTROL No. 334695.
3. BASE DRAWINGS REPRODUCED FROM AS-BUILT PLANS PREPARED BY LI SALTZMAN ARCHITECTS, P.C. ARCHITECTURE AND RESERVATION, 62 WHITE STREET, NEW YORK, NY 10013.3598. DATED (-). ALL LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO VERIFICATION IN THE FIELD.

SPECIAL INSPECTIONS

1. THE NYC BUILDING CODE REQUIRES A SPECIAL INSPECTOR TO PERFORM A MINIMUM OF THREE (3) SPECIAL INSPECTIONS, ONE BEFORE, DURING AND AFTER DEMOLITION
2. CONTRACTOR SHALL NOTIFY ENGINEER 72 HOURS PRIOR TO START OF WORK AND SHALL PROVIDE ENGINEER WITH REGULAR PROGRESS NOTIFICATION UNTIL STRUCTURAL WORKS IS COMPLETED
3. ALL WORK CONTAINED HEREIN SHALL BE SUBJECT TO SPECIAL INSPECTION IN ACCORDANCE WITH CHAPTER 17 OF THE NEW YORK CITY BUILDING CODE.
4. REQUIRED SPECIAL INSPECTIONS INCLUDE:
   - 4.1. STRUCTURAL STABILITY - EXISTING BUILDINGS (BC 1704.20.1)
   - 4.2. MECHANICAL DEMOLITION (BC 1704.20.4 & BC 3306.6)
   - 4.3. FINAL (28-116.2.4.2, BC 110.5, DIRECTIVE 14 OF 1975, AND 1 RCNY §101-10)
   - 4.4. POST-INSTALLED ANCHORS (BB# 2014-018, 2014-019, BC 1704.32)

AMENDED PLAN

Accepted for OPPN #1/04 Professional Certification MANHATTAN Date: MAR 0 7 2019

ENGINEER / DESIGNER
ANCORA ENGINEERING
494 8TH AVENUE, PH
NEW YORK, NY 10001
(212) 461-1987

OWNER
BETH HAMEDRASH HAGADOL (BHH) SYNAGOGUE
60 NORFOLK STREET
NEW YORK, NY 10002

GENERAL CONTRACTOR
TITAN INDUSTRIAL SERVICES
66-00 LONG ISLAND EXPRESSWAY
MASPETH, NEW YORK 11378
718-424-0300

EMERGENCY STABILIZATION
60 NORFOLK STREET
NEW YORK, NY 10002

REVISIONS

	DATE:	DESCRIPTION
△1	02/28/19	LPC NEW LIMITS

LOCATION INFO
DOB ADDRESS: 60 NORFOLK STREET NEW YORK, NY 10002
BLOCK: 346
LOT: 37
ZONING DISTRICT: R8
MAP: 12C
BIN #: 1004155
HEIGHT: 1 STORY @ 65'-5"±

DOB USE ONLY

COVER SHEET

APPLICANT: JAMES M. PATTERSON, P.E.

SEAL

DATE: 3/5/19
PROJECT NO: BETHAM1827
DRAWN BY: R.F.
CHECKED BY: J.P.
DWG NUMBER: OT-000.01
CADD FILE NAME: T:\CURRENT PROJECTS\60 NORFOLK STREET\DWGS\EMERGENCY STABILIZATION - DMP\60 NORFOLK STREET - DM - 201900305 - RF - DRAFT.DWG

MEANS AND METHODS

SCOPE

THE PLANS ENCLOSED DEPICT THE EMERGENCY STABILIZATION OF THE 1 STORY BUILDING LOCATED AT 60 NORFOLK STREET, BLOCK: 346, LOT: 37, BIN: 1004155. DEMOLITION BY HAND MEANS. THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR OF ANY DEVIATION FROM THE APPROVED PLAN OR UNEXPECTED CONDITIONS.

PRE-STABILIZATION

THE FOLLOWING MEASURES SHALL BE COMPLETED PRIOR TO THE START OF DEMOLITION:

1. PROVIDE CONSTRUCTION SIGNAGE, SOLID CONSTRUCTION FENCE, SIDEWALK SHED, PIPE SCAFFOLDING, PIPE SCAFFOLDING ON NEEDLE, DEBRIS NETTING AND OTHER SAFETY PROTECTION TO ESTABLISH A SAFETY ZONE AROUND THE DEMOLITION AREA AS SHOWN IN THE PLANS.

DEMOLITION SEQUENCE

1. PROVIDE CONTROLLED ACCESS SAFETY ZONE AS SHOWN.
   - 1.1. MAINTAIN CONTROLLED ACCESS SAFETY ZONE AT A MINIMUM HORIZONTAL DISTANCE EQUAL TO ONE HALF THE HEIGHT OF THE BUILDING (2V:1H).
   - 1.2. DELINEATE BOUNDARY OF CONTROLLED ACCESS SAFETY ZONE BY USE OF SOLID CONSTRUCTION FENCE, MOVEABLE BARRIERS, OR STANDARD GUARDRAIL AND A FLAG MAN DIRECTING PERSONNEL.
   - 1.3. NO PERSONNEL PERMITTED WITHIN CONTROLLED ACCESS SAFETY ZONE DURING MECHANICAL DEMOLITION EXCEPT ESSENTIAL PERSONNEL,.E.G, CONTRACTORS PERFORMING DEMOLITION.
2. CLEAR BUILDING AND CONTROLLED ACCESS SAFETY ZONE OF ALL PERSONNEL EXCEPT WORKERS PERFORMING DEMOLITION.
3. DEMOLITION
   - 3.1. DEMOLITION SHALL PROGRESS FROM THE TOP DOWN, STARTING AT THE HIGHEST POINT OF THE STRUCTURE.
   - 3.2. DEMOLITION SHALL BE PERFORMED BY HAND, OPERATING BY ARTICULATED BOOM LIFT, UTILIZING CONVENTIONAL HAND TOOLS. WORKERS ARE PROHIBITED FROM WORKING BELOW STRUCTURALS TO TO BE DEMOLISHED.
   - 3.3. EXCAVATORS MAY BE USED TO ASSISTING HAND DEMOLITION BY GRASPING STRUCTUAL MEMBERS, .E.G., WOOD /STEEL, TO FACILIATE CUTTING BY HAND; AND LOWERING CUT STRUCTUAL MEMBERS. STRUCTURAL MEMBERS SHALL NOT BE PULLED OR TWISTED BY THE EXCAVATOR.
4. DEBRIS
   - 4.1. DEBRIS SHALL BE FALL TO GRADE; AND WHERE POSSIBLE AT THE EXTERIOR OF THE BUILDING.
   - 4.2. ALL DEBRIS SHALL BE CLEARED FROM THE SITE.
5. UPON COMPLETION OF DEMOLITITION OPERATIONS THE ENGINEER OF RECORD SHALL PERFORM A STRUCTURAL STABILITY ASSESSMENT AND DETERMINE STABILIZATON MEASURES, E.G., SHORING AND BRACING, NECESSARY TO MAINTIN STRUCTURAL STABILITY.
4. THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR OF ANY DEVIATION FROM THE APPROVED PLAN OR UNEXPECTED CONDITIONS

DEMOLITION REQUIREMENTS

1. NOTIFICATIONS. PRIOR TO THE COMMENCEMENT OF DEMOLITION OPERATIONS, AND NOT LESS THAN 72 HOURS IN ADVANCE, THE PERMIT HOLDER SHALL NOTIFY THE FOLLOWING:
   - 1.1. DOB, FORESNIC ENGINEERING UNIT, 280 BROADWAY, 4TH FLOOR, NEW YORK, NY, 10007, ATTN: ANTHONY DEVITO, 212-393-2137; EMAIL: ADEVITO@BUILDINGS.NYC.GOV.
   - 1.2. FDNY, BUREAU OF FIRE INVESTIGATION
   - 1.3. LANDMARKS PRESERVATION COMMISSION (LPC).
   - 1.4. ENGINEER OF RECORD, DOMANI TECHNICAL & DESIGN SERVICES.
2. ALL ALTERATION, DEMOLITION AND STABILIZATION WORK SHALL BE PERFORMED UNDER FULL TIME SUPERVSION OF A PROFESSIONAL ENGINEER AS PER NYC DOB CONTROL NO. 334695 DATED 11/03/2017.

FINAL CONDITIONS

1. THE REMAINING STRUCTURE WILL REMAIN IN PLACE TO BE INCORPORATED INTO THE PROPOSED NEW CONSTRUCTION WHICH IS CURRENTLY IN PRELIMANRY DESIGN PHASES.
1. STRUCTURE(S) LEFT-IN-PLACE
   - 1.1. PERIMETER BRICK WALLS AND TOWER WALLS.
   - 1.2. CONCRETE SLAB-ON-GRADE
   - 1.3. SUB-GRADE FOOTINGS AND FOUNDATIONS.
2. ALL DEBRIS SHALL BE CLEARED FROM THE SITE.
3. BACKFILL REQUIREMENTS
   - 3.1. BACKFILL SHALL BE COMPRISED OF CONCRETE/MASONRY DEMOLITION DEBRIS (FREE OF ORGANIC MATERIAL) AND/OR CLEAN SOIL
   - 3.2. PROVIDE 1V:3H BERM AGAINST PERIMETER WALLS AS SHOWN AT INTERIOR OF BUILDING FROM CELLAR SLAB-ON-GRADE UP TO MATCH EXTERIOR GRADE ELEVATION.
   - 3.3. GRADE TO MATCH EXISTING CONTOURS, DRAIN THE LOT, ELIMINATE POCKETS IN THE FILL AND PREVENT THE ACCUMULATION OF WATER.
4. CONTRACTOR TO PROVIDE GUARDRAIL AT LEADING EDGE, AT LIMITS OF CONTROLLED ACCESS ZONE; AND AT TOP OF BERMS LESS THAN A THIRTY-THREE PERCENT SLOPE (1V:3H) NYC BC 3304.4.4.
5. SITE DRAINAGE
   - 5.1. PRIOR TO BACKFILL, THE CONTRACTOR MUST CRACK/PERFORATE THE CONCRETE SLAB-ON-GRADE TO PERMIT FREE DRAINAGE AND PREVENT THE ACCUMULATION OF WATER.
6. EGRESS
   - 6.1. PROVIDE A 1V:4H EARTH RAMP, IN ACCORDANCE WITH NYC BC REQUIREMENTS, FROM CELLAR SLAB-ON-GRADE TO EXTERIOR GRADE.
7. WATERPROOFING
   - 7.1. EXPOSED TOP OF WALLS SHALL BE WATERPROOFED.
   - 7.2. CLEAR DEBRIS, DUST AND LOOSE MATERIAL FROM TOP OF WALL.
   - 7.3. APPLY SELF ADHESIVE BITUTHENE MEMBRANE ALONG TOP OF ALL MASONRY WALLS.
8. INSPECTIONS.
   - 8.1. IF THE PROPOSED NEW CONSTRUCTION DOES NOT BEGIN WITHIN THREE MONTHS OF COMPLETION OF DEMOLITION OPERATIONS A REGISTERED DESIGN PROFESSIONAL MUST PERFORM PERIODIC INSPECTIONS OF STRUTCTURAL STABILITY AS PER NYC BC 3303.13.3.
9. THE APPROVED DM PLANS WILL BE PROVIDED TO THE OWNER, ILLUSTRATING SITE CONDITIONS AT THE COMPLETION OF DEMOLITION, TO BE INCORPORATED INTO THE SUPPORT-OF-EXCAVATION DESIGN FOR NEW DEVELOPMENT.

MECHANICAL EQUIPMENT USE RESTRICTIONS

1. PROFESSIONAL ENGINEER OR REPRESENTATIVE MUST BE ON SITE AT START OF WORK TO OBSERVE STRUCTURE'S BEHAVIOR DURING MECHANICAL EQUIPMENT OPERATIONS.
2. MECHANICAL EQUIPMENT OF SIMILAR WEIGHT AND DIMENSIONS OF THOSE LISTED ABOVE MAY BE SUBSTITUTED FOR USE AS APPROVED BY THE ENGINEER OF RECORD.
3. MECHANICAL EQUIPMENT MUST BE OPERATED BY A QUALIFIED OPERATOR EXPERIENCED IN THE USE OF THE MACHINE.
4. NO MECHANICAL EQUIPMENT OPERATION PERMITTED WITHIN "NO LOAD ZONE" AS SHOWN IN PLANS
5. MECHANICAL EQUIPMENT SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE OF 1 COLUMN BAY OR 20 FT BETWEEN MACHINES AT ALL TIMES, WHICHEVER IS GREATER
6. MECHANICAL EQUIPMENT SHALL NOT BE OPERATED IN A MANNER THAT A WHEEL IS UPLIFTED OR IN A MANNER THAT IMPARTS EXTREME DYNAMIC LOADING ON THE DECK.
7. ANY EVENT, CHANGE OF METHOD OR CONDITION THAT PROMPTS THE CONCERN ABOUT THE INTEGRITY OF THE STRUCTURE TO SUPPORT THE EQUIPMENT SHALL BE REPORTED TO THE ENGINEER OF RECORD IMMEDIATELY AND WORK SHALL NOT PROCEED IN SUSPECT AREA(S)
8. ARTICULATED BOOM LIFTS
   - 8.1. SHALL BE OPERATED IN STRICT ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS AND BY TRAINED AND COMPETENT OPERTORS.
   - 8.2. SHALL BE USED TO FACILITATE HAND DEMOLITION OPERATIONS.
   - 8.3. ARE STRICTLY PROHIBITED FOR LOWERING DEBRIS TO GRADE.
9. EXCAVATOR(S) MAY BE USED FOR THE FOLLOWING OPERATIONS
   - 9.1. OPERATIION ON GRADE/BACKFILL ONLY
   - 9.2. LOAD OUT OF DEBRIS, EQUIPMENT OR OTHER MATERIALS
   - 9.3. ASSISTING HAND DEMOLITION BY GRASPING STRUCTUAL MEMBERS, .E.G., WOOD /STEEL BEAMS/COLUMNS, TO FACILIATE CUTTING BY HAND; AND LOWERING CUT STRUCTUAL MEMBERS. STRUCTURAL MEMBERS SHALL NOT BE PULLED OR TWISTED BY THE EXCAVATOR.
   - 9.4. CRACKING CONCRETE SLAB-ON-GRADE
   - 9.5. BACKFILL AND GRADING
   - 9.6. OTHER OPERATIONS APPROVED BY PROFESSIONAL ENGINEER ON-SITE.
10. SKID STEER(S) MAY BE USED FOR THE FOLLOWING OPERATIONS
    - 10.1. OPERATION ON GRADE/BACK FILL ONLY
    - 10.2. LOAD OUT OF DEBRIS, EQUIPMENT OR OTHER MATERIALS
    - 10.3. BACKFILL AND GRADING
11. ANY EVENT, CHANGE OF METHOD OR CONDITION THAT PROMPTS THE CONCERN ABOUT THE INTEGRITY OF THE STRUCTURE TO SUPPORT THE EQUIPMENT SHALL BE REPORTED TO THE ENGINEER OF RECORD IMMEDIATELY AND WORK SHALL NOT PROCEED IN SUSPECT AREA(S)

LONG/HIGH REACH EXCAVATOR USE RESTRICTIONS

1. SHALL BE OPERATED IN STRICT ACCORDANCE WITH THE MANUFACTURE'S RECOMMENDATIONS AND BY TRAINED AND COMPETENT OPERTORS.
2. HIGH REACH EXCAVATORS SHOULD BE OPERATED FACING IN FRONT OF THE TRACKS, NOT SIDE-ON. SIDE-ON WILL RESULT IN ROLLOVER OR OVERLOADING. OPERATOR MUST AVOID OVERLOADING WORKING TOOL AS THIS CAN CAUSE A ROLLOVER.SOME LONG-REACH EXCAVATORS ARE FITTED WITH A BOOM ANGLE WARNING SYSTEM TO ALERT OF THIS POSSIBILITY.
3. MACHINES ARE TO BE FITTED WITH ROPS/FOPS. FULL WRITTEN INSPECTION CHECKS MUST BE PERFORMED DAILY BY A COMPETENT PERSON BEFORE USE.
4. ANY EVENT, CHANGE OF METHOD OR CONDITION THAT PROMPTS THE CONCERN ABOUT THE INTEGRITY OF THE STRUCTURE TO SUPPORT THE EQUIPMENT SHALL BE REPORTED TO THE ENGINEER OF RECORD IMMEDIATELY AND WORK SHALL NOT PROCEED IN SUSPECT AREA(S)
5. HIGH REACH MACHINES ARE NOT DESIGNED AS CRANES, NOR SHOULD THEY BE USED TO CARRY OUT ANY FORM OF LIFTING DUTIES EXCEPT WHERE THEY ARE REQUIRED TO GRAB ELEMENTS OF THE STRUCTURE BEING DEMOLISHED.
   - 5.1. ATTACHMENTS SHOULD BE MATCHED TO THE WEIGHT AND TYPE OF WORK CARRIED OUT.
   - 5.2. MACHINES HAVE SAFE OPERATING LIMITS AND DISTANCES WHICH MUST BE ADHERED TO IN ORDER TO CARRY OUT DEMOLITION.
6. WORKING PLATFORM MUST BE CHECKED FOR STABILITY BEFORE ANY WORK CAN BE PERFORMED TO PREVENT ROLLOVERS. ANY RAMPS OR WORKING PLATFORMS CONSTRUCTED FROM RECYCLED MATERIAL, SUCH AS CONCRETE AND STONE, SHOULD BE INSPECTED BY THE OPERATOR REGULARLY TO IDENTIFY ANY PROTRUDING STEEL OR REINFORCING THAT MAY OBSTRUCT OR LOCK UP IN THE EXCAVATOR TRACKS.
7. THE OPERATOR MUST ENSURE THAT THE MACHINE REMAINS WITHIN THE PRESCRIBED SAFE WORKING RADIUS AT ALL TIMES. RADIUS CHARTS SHOULD BE AVAILABLE FOR THE OPERATOR TO REFER TO AT ALL TIMES WITHIN THE CABIN OF THE EXCAVATOR.
8. THE OPERATOR MUST WATCH THE FALL ZONE, AS FALLING DEBRIS/STEEL CAN SPEAR OR BOUNCES TOWARDS OPERATING POSITION.
   - 8.1. IT IS IMPORTANT TO WORK WITHIN THE SAFE DISTANCES OF THE MACHINE AND ALSO MAINTAIN A FALL ZONE FOR THE DEBRIS TO TRAVEL TO THE GROUND.
   - 8.2. A TIER SYSTEM AND PERIODIC CLEANING OF DEBRIS FROM FALL

EQUIPMENT LIST - HAND TOOLS

MACHINE MAY BE REQUIRED.

1. ELECTRIC CHIPPING GUN
2. JACK-HAMMER
3. OXY-ACETYLENE BURNING OUTFIT
4. ELECTRICAL GRINDER
5. GAS-POWERED DEMOLITION SAW
6. CHAINSAW
7. GENERATOR
8. COMPRESSOR
9. CHAIN FALL
10. CONCRETE SAW
11. HAND GANTRY
12. DRILL
13. MISC. HANDTOOLS

EQUIPMENT LIST - MECHANICAL EQUIPMENT

TYPE	MAKE/MODEL	OPERATING WEIGHT (LBS)	FLOOR LEVEL PLACEMENT	MIN. SEPARATION DISTANCE	USE DESCRIPTION		
					TRANSPORTATION OF DEBRIS, EQUIPMENT OR OTHER MATERIALS	FULL MECHANICAL MEANS	ASSIST HAND DEMOLITION
MINI EXCAVATOR	BOBCAT 325	6,145	GRADE ONLY	NA	•		
MINI EXCAVATOR	BOBCAT 329	7,098	GRADE ONLY	NA	•		
MINI EXCAVATOR	BOBCAT 331	7,185	GRADE ONLY	NA	•		
SKID STEER LOADER	BOBCAT S70	2,795	GRADE ONLY	NA	•		
SKID STEER LOADER	BOBCAT S100	4,091	GRADE ONLY	NA	•		
SKID STEER LOADER	BOBCAT 226B	5,822	GRADE ONLY	NA	•		
SKID STEER LOADER	BOBCAT S150	5,935	GRADE ONLY	NA	•		
MINI EXCAVATOR	CAT 301.8C	3,936	GRADE ONLY	NA	•		•
MINI EXCAVATOR	CAT 303.5D CR	7,800	GRADE ONLY	NA	•		•
MINI EXCAVATOR	CAT 304E CR	8,838	GRADE ONLY	NA	•		•
EXCAVATOR	KOMATSU PC70	15,829	GRADE ONLY	NA	•		•
EXCAVATOR	KOMATSU PC200	44,114	GRADE ONLY	NA	•		•
BOOM LIFT	GENIE S-120	44,340	GRADE ONLY	NA			•
BOOM LIFT	GENIE S-125	44,640	GRADE ONLY	NA			•

AMENDED PLAN

Accepted for OPTN ... Professional Certification MANHATTAN Date: MAR 0 7 2019

ENGINEER / DESIGNER

ANCORA ENGINEERING
494 8TH AVENUE, PH
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(212) 461-1987

OWNER

BETH HAMEDRASH HAGADOL (BHH) SYNAGOGUE
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NEW YORK, NY 10002

GENERAL CONTRACTOR

TITAN INDUSTRIAL SERVICES
66-00 LONG ISLAND EXPRESSWAY
MASPETH, NEW YORK 11378
718-424-0300

EMERGENCY STABILIZATION

60 NORFOLK STREET NEW YORK, NY 10002

REVISIONS

	DATE:	DESCRIPTION
1	02/28/19	LPC NEW LIMITS

LOCATION INFO

DOB ADDRESS: 60 NORFOLK STREET NEW YORK, NY 10002
BLOCK: 346
LOT: 37
ZONING DISTRICT: R8
MAP: 12C
BIN #: 1004155
HEIGHT: 1 STORY @ 65'-5"±

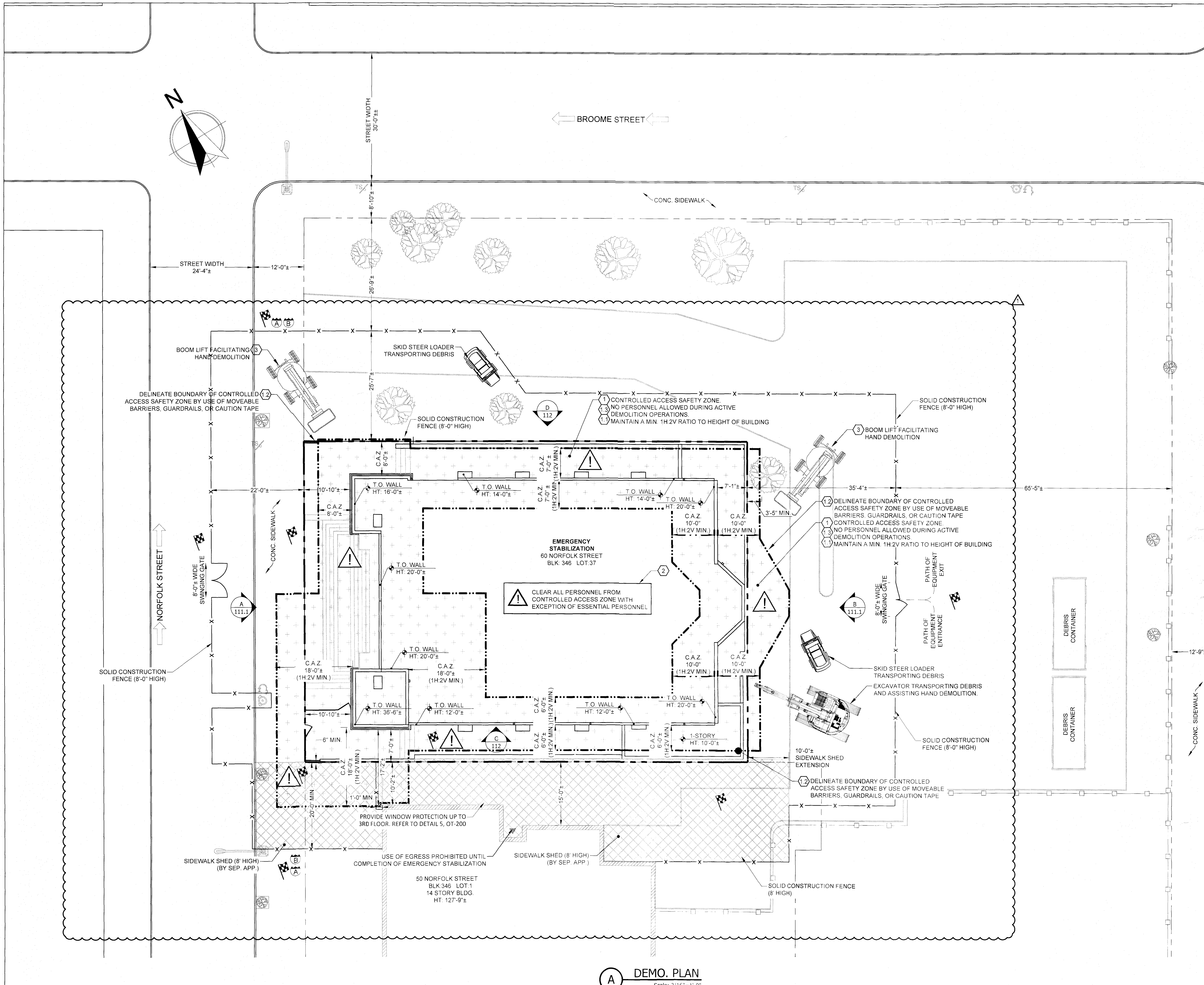
DOB USE ONLY

PLOT PLAN & NOTES

APPLICANT: JAMES M. PATTERSON, P.E.

SEAL

DATE: 3/5/19
PROJECT NO: BETHAM1827
DRAWN BY: R.F.
CHECKED BY: J.P.
DWG NUMBER: OT-001.01
CADD FILE NAME: T:\CURRENT PROJECTS\60 NORFOLK STREET\DWGS\EMERGENCY STABILIZATION - DMP\60 NORFOLK STREET - DM - 201900305 - RF - DRAFT.DWG



A DEMO. PLAN
Scale: 3/16"=1'-0"

LEGEND:

- FLAGMAN DIRECTING PEDESTRIAN TRAFFIC DURING LOAD IN/LOAD OUT
- STRUCTURE TO REMAIN
- STRUCTURE TO BE REMOVED
- CONTROLLED ACCESS SAFETY ZONE
- CONTROLLED ACCESS ZONE

DEMOLITION SEQUENCE

1. PROVIDE CONTROLLED ACCESS SAFETY ZONE AS SHOWN.
   1.1. MAINTAIN CONTROLLED ACCESS SAFETY ZONE AT A MINIMUM HORIZONTAL DISTANCE EQUAL TO ONE HALF THE HEIGHT OF THE BUILDING (2V:1H).
   1.2. DELINEATE BOUNDARY OF CONTROLLED ACCESS SAFETY ZONE BY USE OF SOLID CONSTRUCTION FENCE, MOVEABLE BARRIERS, OR STANDARD GUARDRAIL AND A FLAG MAN DIRECTING PERSONNEL.
   1.3. NO PERSONNEL PERMITTED WITHIN CONTROLLED ACCESS SAFETY ZONE DURING MECHANICAL DEMOLITION EXCEPT ESSENTIAL PERSONNEL, E.G. CONTRACTORS PERFORMING DEMOLITION.
2. CLEAR BUILDING AND CONTROLLED ACCESS SAFETY ZONE OF ALL PERSONNEL EXCEPT WORKERS PERFORMING DEMOLITION.
3. DEMOLITION
   3.1. DEMOLITION SHALL PROGRESS FROM THE TOP DOWN, STARTING AT THE HIGHEST POINT OF THE STRUCTURE.
   3.2. DEMOLITION SHALL BE PERFORMED BY HAND, OPERATING BY ARTICULATED BOOM LIFT, UTILIZING CONVENTIONAL HAND TOOLS. WORKERS ARE PROHIBITED FROM WORKING BELOW STRUCTURALS TO TO BE DEMOLISHED.
   3.3. EXCAVATORS MAY BE USED TO ASSISTING HAND DEMOLITION BY GRASPING STRUCTURAL MEMBERS, .E.G., WOOD /STEEL, TO FACILIATE CUTTING BY HAND; AND LOWERING CUT STRUCTURAL MEMBERS. STRUCTURAL MEMBERS SHALL NOT BE PULLED OR TWISTED BY THE EXCAVATOR.
4. DEBRIS
   4.1. DEBRIS SHALL BE FALL TO GRADE; AND WHERE POSSIBLE AT THE EXTERIOR OF THE BUILDING.
   4.2. ALL DEBRIS SHALL BE CLEARED FROM THE SITE.
5. UPON COMPLETION OF DEMOLITITION OPERATIONS THE ENGINEER OF RECORD SHALL PERFORM A STRUCTURAL STABILITY ASSESSMENT AND DETERMINE STABILIZATON MEASURES, E.G., SHORING AND BRACING, NECESSARY TO MAINTIN STRUCTURAL STABILITY.
4. THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR OF ANY DEVIATION FROM THE APPROVED PLAN OR UNEXPECTED CONDITIONS.

AMENDED PLAN

Accepted for OPPN #1/04 Professional Certification MANHATTAN Date: MAR 0 7 2019

ENGINEER / DESIGNER

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NEW YORK, NY 10002

GENERAL CONTRACTOR

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MASPETH, NEW YORK 11378
718-424-0300

EMERGENCY STABILIZATION

60 NORFOLK STREET NEW YORK, NY 10002

REVISIONS

	DATE:	DESCRIPTION
1	02/28/19	LPC NEW LIMITS

LOCATION INFO

DOB ADDRESS: 60 NORFOLK STREET NEW YORK, NY 10002
BLOCK: 346
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HEIGHT: 1 STORY @ 65'-5"±

DOB USE ONLY

DEMO. PLAN

APPLICANT: JAMES M. PATTERSON, P.E.

SEAL

DATE: 3/5/19
PROJECT NO: BETHAM1827
DRAWN BY: R.F.
CHECKED BY: J.P.
DWG NUMBER: OT-110.01

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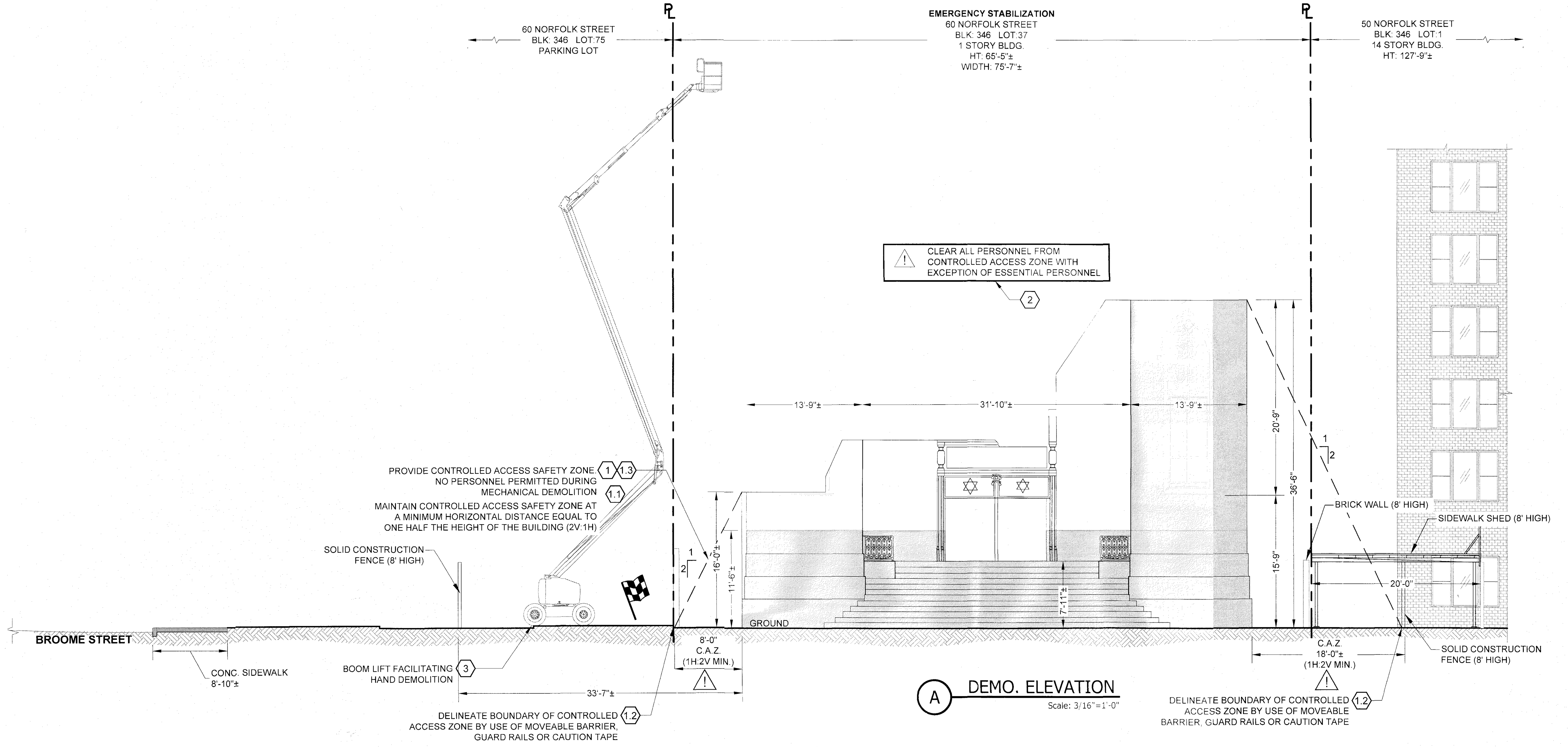
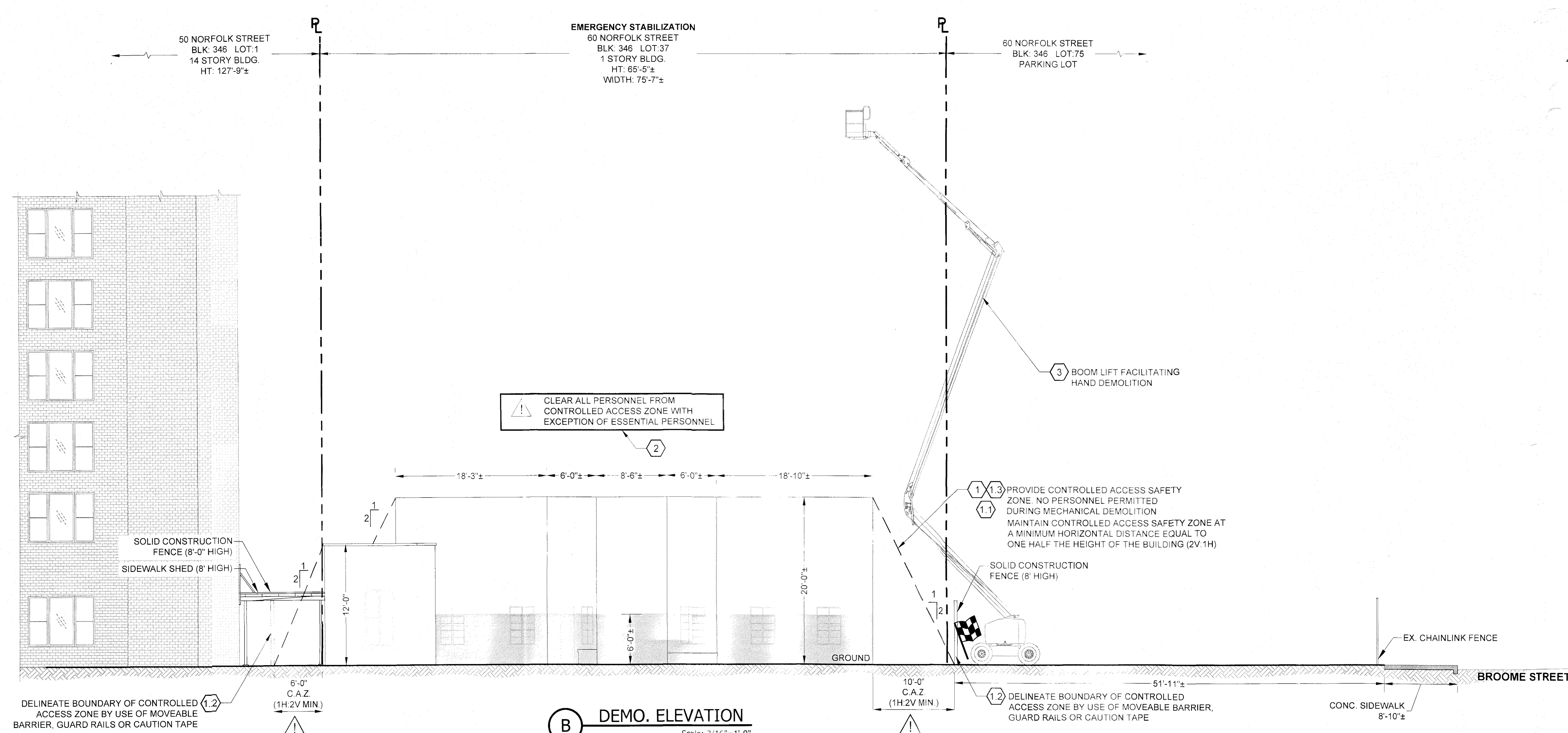


A DEMO. ELEVATION

Scale: 3/16"=1'-0"



B DEMO. ELEVATION

Scale: 3/16"=1'-0"

LEGEND:

- FLAGMAN DIRECTING PERSONNEL DURING DEMOLITION OPERATIONS
- STRUCTURE TO REMAIN
- STRUCTURE TO BE REMOVED
- (#) DEMOLITION SEQUENCE STEP. PROCEED IN NUMERICAL ORDER IN DIRECTION/PROGRESSION SHOWN
- CONTROLLED ACCESS ZONE

DEMOLITION SEQUENCE

1. PROVIDE CONTROLLED ACCESS SAFETY ZONE AS SHOWN.
   1.1. MAINTAIN CONTROLLED ACCESS SAFETY ZONE AT A MINIMUM HORIZONTAL DISTANCE EQUAL TO ONE HALF THE HEIGHT OF THE BUILDING (2V:1H).
   1.2. DELINEATE BOUNDARY OF CONTROLLED ACCESS SAFETY ZONE BY USE OF SOLID CONSTRUCTION FENCE, MOVEABLE BARRIERS, OR STANDARD GUARDRAIL AND A FLAG MAN DIRECTING PERSONNEL.
   1.3. NO PERSONNEL PERMITTED WITHIN CONTROLLED ACCESS SAFETY ZONE DURING MECHANICAL DEMOLITION EXCEPT ESSENTIAL PERSONNEL, E.G. CONTRACTORS PERFORMING DEMOLITION.
2. CLEAR BUILDING AND CONTROLLED ACCESS SAFETY ZONE OF ALL PERSONNEL EXCEPT WORKERS PERFORMING DEMOLITION.
3. DEMOLITION
   3.1. DEMOLITION SHALL PROGRESS FROM THE TOP DOWN, STARTING AT THE HIGHEST POINT OF THE STRUCTURE.
   3.2. DEMOLITION SHALL BE PERFORMED BY HAND, OPERATING BY ARTICULATED BOOM LIFT, UTILIZING CONVENTIONAL HAND TOOLS. WORKERS ARE PROHIBITED FROM WORKING BELOW STRUCTURALS TO TO BE DEMOLISHED.
   3.3. EXCAVATORS MAY BE USED TO ASSISTING HAND DEMOLITION BY GRASPING STRUCTUAL MEMBERS, E.G., WOOD /STEEL, TO FACILIATE CUTTING BY HAND; AND LOWERING CUT STRUCTURAL MEMBERS. STRUCTURAL MEMBERS SHALL NOT BE PULLED OR TWISTED BY THE EXCAVATOR.
4. DEBRIS
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   4.2. ALL DEBRIS SHALL BE CLEARED FROM THE SITE.
5. UPON COMPLETION OF DEMOLITITION OPERATIONS THE ENGINEER OF RECORD SHALL PERFORM A STRUCTURAL STABILITY ASSESSMENT AND DETERMINE STABILIZATON MEASURES, E.G., SHORING AND BRACING, NECESSARY TO MAINTIN STRUCTURAL STABILITY.
4. THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR OF ANY DEVIATION FROM THE APPROVED PLAN OR UNEXPECTED CONDITIONS

AMENDED PLAN

Accepted for OPPN #1704 Professional Certification MANHATTAN

MAR 0 7 2019

ENGINEER / DESIGNER

ANCORA ENGINEERING
494 8TH AVENUE, PH
NEW YORK, NY 10001
(212) 461-1987

OWNER

BETH HAMEDRASH HAGADOL (BHH) SYNAGOGUE
60 NORFOLK STREET
NEW YORK, NY 10002

GENERAL CONTRACTOR

TITAN INDUSTRIAL SERVICES
66-00 LONG ISLAND EXPRESSWAY
MASPETH, NEW YORK 11378
718-424-0300

EMERGENCY STABILIZATION
60 NORFOLK STREET NEW YORK, NY 10002

REVISIONS

	DATE:	DESCRIPTION
△	02/28/19	LPC NEW LIMITS

LOCATION INFO

DOB ADDRESS: 60 NORFOLK STREET NEW YORK, NY 10002
BLOCK: 346
LOT: 37
ZONING DISTRICT: R8
MAP: 12C
BIN #: 1004155
HEIGHT: 1 STORY @ 65'-5"±

DOB USE ONLY

DEMO. ELEVATIONS A & B

APPLICANT: JAMES M. PATTERSON, P.E.

SEAL

DATE:	3/5/19
PROJECT NO:	BETHAM1827
DRAWN BY:	R.F.
CHECKED BY:	J.P.
DWG NUMBER:	OT-111.01

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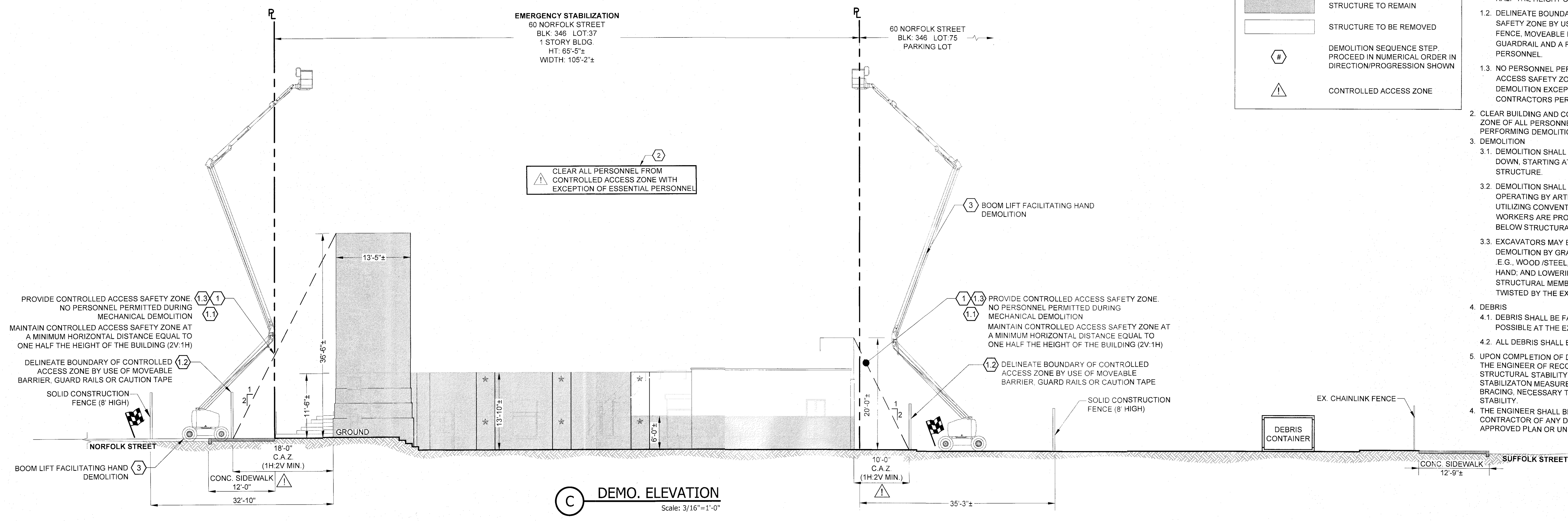
Scan Code ESHS3191396



C DEMO. ELEVATION
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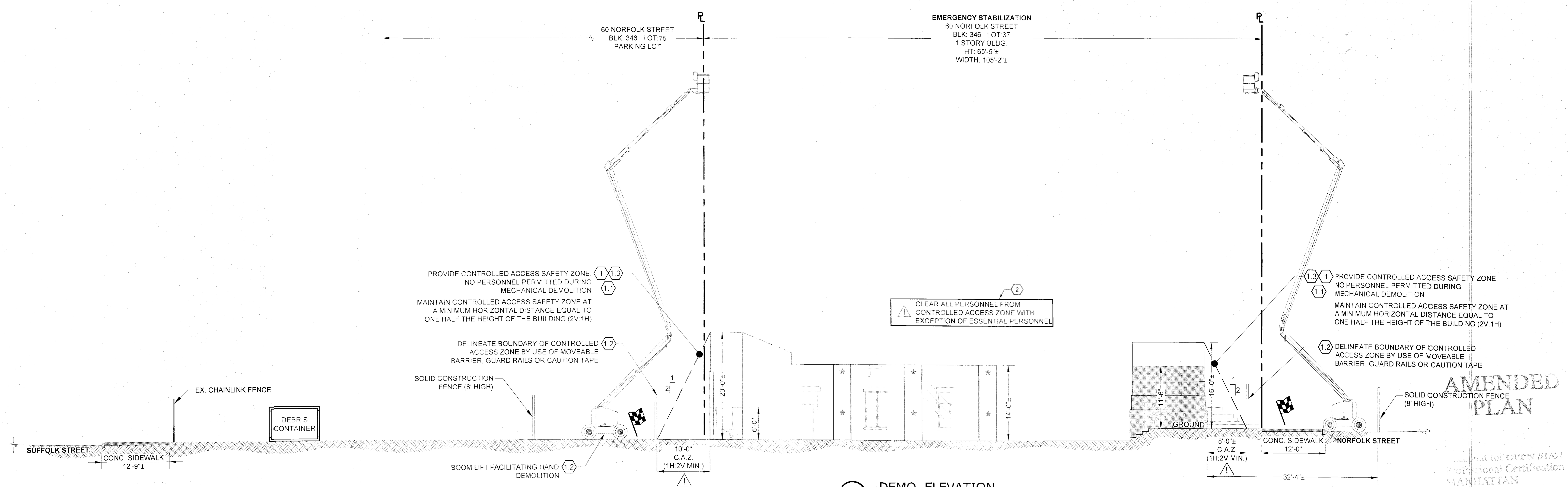

D DEMO. ELEVATION
Scale: 3/16"=1'-0"

AMENDED PLAN

Accepted for OTPN #1/0-1 Professional Certification MANHATTAN Date: MAR 0 7 2019

LEGEND

(flag)	FLAGMAN DIRECTING PERSONNEL DURING DEMOLITION OPERATIONS
(shaded)	STRUCTURE TO REMAIN
(unshaded)	STRUCTURE TO BE REMOVED
#	DEMOLITION SEQUENCE STEP. PROCEED IN NUMERICAL ORDER IN DIRECTION/PROGRESSION SHOWN
△	CONTROLLED ACCESS ZONE

DEMOLITION SEQUENCE

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6. THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR OF ANY DEVIATION FROM THE APPROVED PLAN OR UNEXPECTED CONDITIONS

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EMERGENCY STABILIZATION
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REVISIONS

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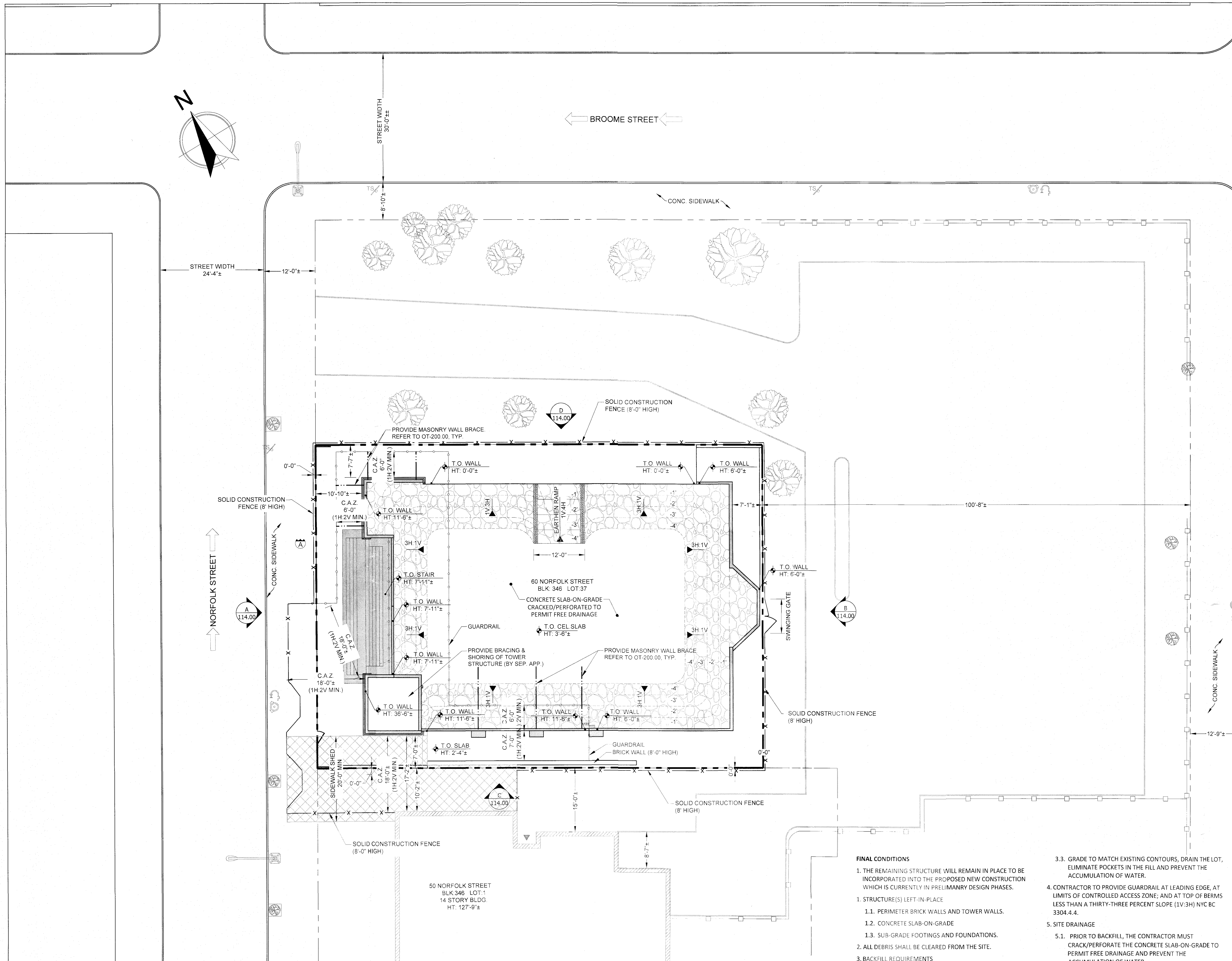
LPC

APPLICANT: JAMES M. PATTERSON, P.E.

SEAL

DATE:	3/5/19
PROJECT NO:	BETHAM1827
DRAWN BY:	R.F.
CHECKED BY:	J.P.
DWG NUMBER:	OT-112.00
CADD FILE NAME:	
	18 of 22



A FINAL CONDITION PLAN

Scale: 3/16"=1'-0"

LEGEND:

- REQUIRED CONSTRUCTION SIGNAGE
- PROPERTY LINE
- SOLID CONSTRUCTION FENCE (8' HIGH)
- MASONRY WALL BRACE
- STRUCTURE TO REMAIN
- SIDEWALK SHED
- 3H:1V BERM
- GUARDRAIL

FINAL CONDITIONS

1. THE REMAINING STRUCTURE WILL REMAIN IN PLACE TO BE INCORPORATED INTO THE PROPOSED NEW CONSTRUCTION WHICH IS CURRENTLY IN PRELIMANRY DESIGN PHASES.
1. STRUCTURE(S) LEFT-IN-PLACE
   - 1.1. PERIMETER BRICK WALLS AND TOWER WALLS.
   - 1.2. CONCRETE SLAB-ON-GRADE
   - 1.3. SUB-GRADE FOOTINGS AND FOUNDATIONS.
2. ALL DEBRIS SHALL BE CLEARED FROM THE SITE.
3. BACKFILL REQUIREMENTS
   - 3.1. BACKFILL SHALL BE COMPRISED OF CONCRETE/MASONRY DEMOLITION DEBRIS (FREE OF ORGANIC MATERIAL) AND/OR CLEAN SOIL
   - 3.2. PROVIDE 1V:3H BERM AGAINST PERIMETER WALLS AS SHOWN AT INTERIOR OF BUILDING FROM CELLAR SLAB-ON-GRADE UP TO MATCH EXTERIOR GRADE ELEVATION.
   - 3.3. GRADE TO MATCH EXISTING CONTOURS, DRAIN THE LOT, ELIMINATE POCKETS IN THE FILL AND PREVENT THE ACCUMULATION OF WATER.
4. CONTRACTOR TO PROVIDE GUARDRAIL AT LEADING EDGE, AT LIMITS OF CONTROLLED ACCESS ZONE; AND AT TOP OF BERMS LESS THAN A THIRTY-THREE PERCENT SLOPE (1V:3H) NYC BC 3304.4.4.
5. SITE DRAINAGE
   - 5.1. PRIOR TO BACKFILL, THE CONTRACTOR MUST CRACK/PERFORATE THE CONCRETE SLAB-ON-GRADE TO PERMIT FREE DRAINAGE AND PREVENT THE ACCUMULATION OF WATER.
6. EGRESS
   - 6.1. PROVIDE A 1V:4H EARTH RAMP, IN ACCORDANCE WITH NYC BC REQUIREMENTS, FROM CELLAR SLAB-ON-GRADE TO EXTERIOR GRADE.
7. WATERPROOFING
   - 7.1. EXPOSED TOP OF WALLS SHALL BE WATERPROOFED.
   - 7.2. CLEAR DEBRIS, DUST AND LOOSE MATERIAL FROM TOP OF WALL.
   - 7.3. APPLY SELF ADHESIVE BITUTHENE MEMBRANE ALONG TOP OF ALL MASONRY WALLS.
8. INSPECTIONS.
   - 8.1. IF THE PROPOSED NEW CONSTRUCTION DOES NOT BEGIN WITHIN THREE MONTHS OF COMPLETION OF DEMOLITION OPERATIONS A REGISTERED DESIGN PROFESSIONAL MUST PERFORM PERIODIC INSPECTIONS OF STRUCTURAL STABILITY AS PER NYC BC 3303.13.3.
9. THE APPROVED DM PLANS WILL BE PROVIDED TO THE OWNER, ILLUSTRATING SITE CONDITIONS AT THE COMPLETION OF DEMOLITION, TO BE INCORPORATED INTO THE SUPPORT-OF-EXCAVATION DESIGN FOR NEW DEVELOPMENT.

AMENDED PLAN

MAR 0 7 2019

ENGINEER / DESIGNER

ANCORA ENGINEERING
494 8TH AVENUE, PH
NEW YORK, NY 10001
(212) 461-1987

OWNER

BETH HAMEDRASH HAGADOL (BHH) SYNAGOGUE
60 NORFOLK STREET
NEW YORK, NY 10002

GENERAL CONTRACTOR

TITAN INDUSTRIAL SERVICES
66-00 LONG ISLAND EXPRESSWAY
MASPETH, NEW YORK 11378
718-424-0300

EMERGENCY STABILIZATION

60 NORFOLK STREET NEW YORK, NY 10002

REVISIONS

	DATE:	DESCRIPTION
1	02/28/19	LPC NEW LIMITS

LOCATION INFO

DOB ADDRESS: 60 NORFOLK STREET NEW YORK, NY 10002
BLOCK: 346
LOT: 37
ZONING DISTRICT: R8
MAP: 12C
BIN #: 1004155
HEIGHT: 1 STORY @ 65'-5"±

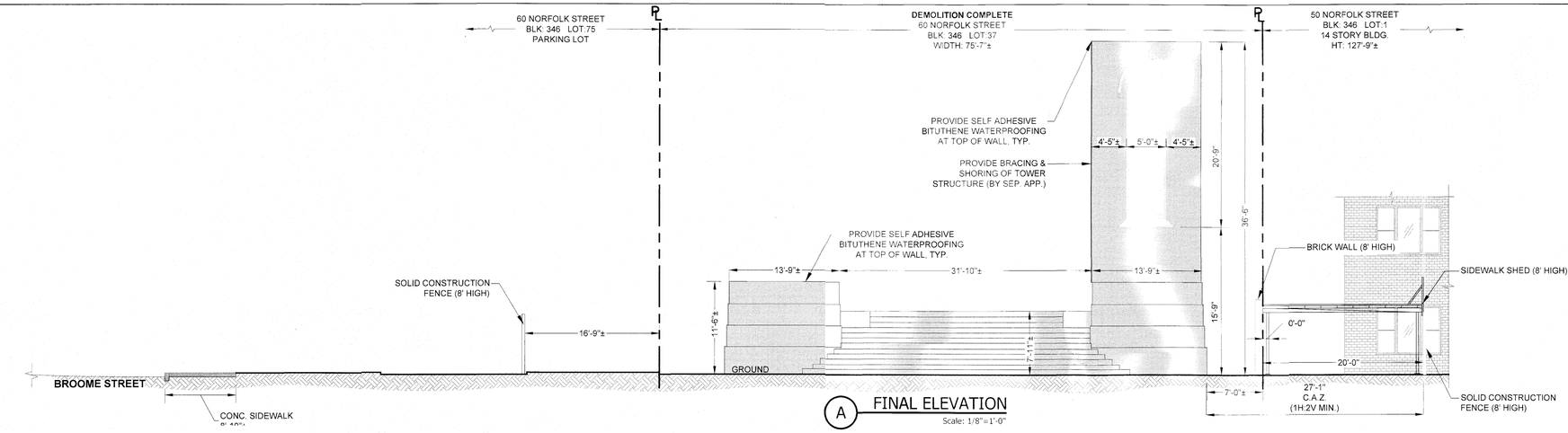
DOB USE ONLY

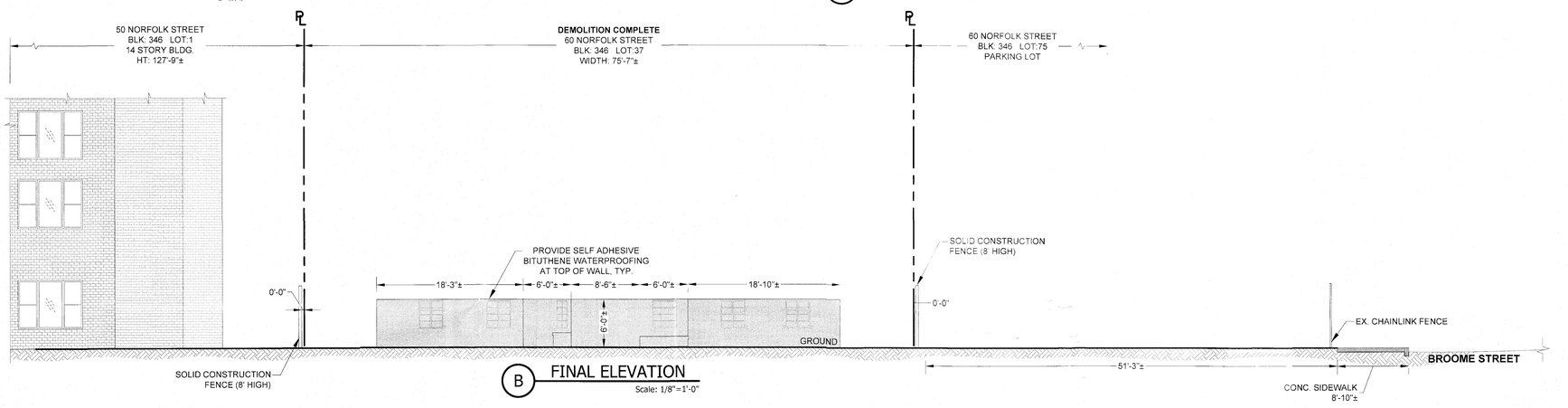
LPC

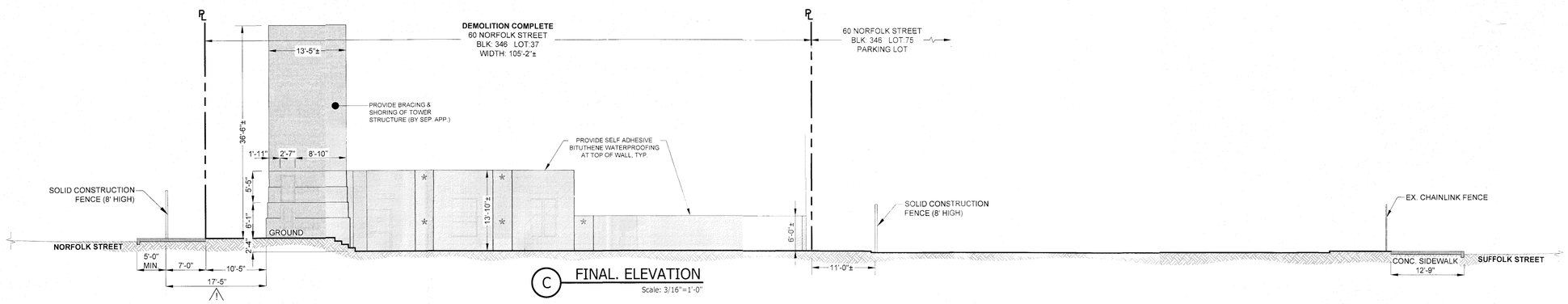
APPLICANT: JAMES M. PATTERSON, P.E.

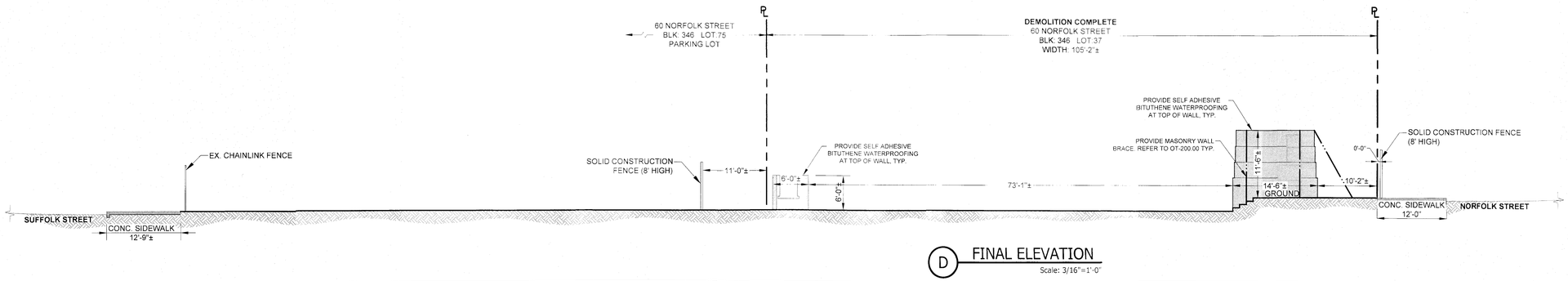
SEAL

DATE:	3/5/19
PROJECT NO:	BETHAM1827
DRAWN BY:	R.F.
CHECKED BY:	J.P.
DWG NUMBER:	OT-113.00
CADD FILE NAME:	T:\CURRENT PROJECTS\60 NORFOLK STREET\DWGS\EMERGENCY STABILIZATION - DMP\60 NORFOLK STREET - DM - 201900305 - RF - DRAFT.DWG









LEGEND:

STRUCTURE TO REMAIN

FINAL CONDITIONS

1. THE REMAINING STRUCTURE WILL REMAIN IN PLACE TO BE INCORPORATED INTO THE PROPOSED NEW CONSTRUCTION WHICH IS CURRENTLY IN PRELIMANRY DESIGN PHASES.
1. STRUCTURE(S) LEFT-IN-PLACE
   - 1.1. PERIMETER BRICK WALLS AND TOWER WALLS.
   - 1.2. CONCRETE SLAB-ON-GRADE
   - 1.3. SUB-GRADE FOOTINGS AND FOUNDATIONS.
2. ALL DEBRIS SHALL BE CLEARED FROM THE SITE.
3. BACKFILL REQUIREMENTS
   - 3.1. BACKFILL SHALL BE COMPRISED OF CONCRETE/MASONRY DEMOLITION DEBRIS (FREE OF ORGANIC MATERIAL) AND/OR CLEAN SOIL
   - 3.2. PROVIDE 1V:3H BERM AGAINST PERIMETER WALLS AS SHOWN AT INTERIOR OF BUILDING FROM CELLAR SLAB-ON-GRADE UP TO MATCH EXTERIOR GRADE ELEVATION.
   - 3.3. GRADE TO MATCH EXISTING CONTOURS, DRAIN THE LOT, ELIMINATE POCKETS IN THE FILL AND PREVENT THE ACCUMULATION OF WATER.
4. CONTRACTOR TO PROVIDE GUARDRAIL AT LEADING EDGE, AT LIMITS OF CONTROLLED ACCESS ZONE; AND AT TOP OF BERMS LESS THAN A THIRTY-THREE PERCENT SLOPE (1V:3H) NYC BC 3304.4.4.
5. SITE DRAINAGE
   - 5.1. PRIOR TO BACKFILL, THE CONTRACTOR MUST CRACK/PERFORATE THE CONCRETE SLAB-ON-GRADE TO PERMIT FREE DRAINAGE AND PREVENT THE ACCUMULATION OF WATER.
6. EGRESS
   - 6.1. PROVIDE A 1V:4H EARTH RAMP, IN ACCORDANCE WITH NYC BC REQUIREMENTS, FROM CELLAR SLAB-ON-GRADE TO EXTERIOR GRADE.
7. WATERPROOFING
   - 7.1. EXPOSED TOP OF WALLS SHALL BE WATERPROOFED.
   - 7.2. CLEAR DEBRIS, DUST AND LOOSE MATERIAL FROM TOP OF WALL.
   - 7.3. APPLY SELF ADHESIVE BITUTHENE MEMBRANE ALONG TOP OF ALL MASONRY WALLS.
8. INSPECTIONS.
   - 8.1. IF THE PROPOSED NEW CONSTRUCTION DOES NOT BEGIN WITHIN THREE MONTHS OF COMPLETION OF DEMOLITION OPERATIONS A REGISTERED DESIGN PROFESSIONAL MUST PERFORM PERIODIC INSPECTIONS OF STRUCTURAL STABILITY AS PER NYC BC 3303.13.3.
9. THE APPROVED DM PLANS WILL BE PROVIDED TO THE OWNER, ILLUSTRATING SITE CONDITIONS AT THE COMPLETION OF DEMOLITION, TO BE INCORPORATED INTO THE SUPPORT-OF-EXCAVATION DESIGN FOR NEW DEVELOPMENT.

AMENDED PLAN

MAR 07 2019

ENGINEER / DESIGNER

ANCORA ENGINEERING
494 8TH AVENUE, PH
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OWNER

BETH HAMEDRASH HAGADOL (BHH) SYNAGOGUE
60 NORFOLK STREET
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GENERAL CONTRACTOR

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66-00 LONG ISLAND EXPRESSWAY
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EMERGENCY STABILIZATION
60 NORFOLK STREET NEW YORK, NY 10002

REVISIONS

	DATE:	DESCRIPTION
1	02/28/19	LPC NEW LIMITS

LOCATION INFO

DOB ADDRESS: 60 NORFOLK STREET NEW YORK, NY 10002
BLOCK: 346
LOT: 37
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MAP: 12C
BIN #: 1004155
HEIGHT: 1 STORY @ 65'-5"±

DOB USE ONLY

LPC

APPLICANT: JAMES M. PATTERSON, P.E.

SEAL

DATE: 3/5/19
PROJECT NO: BETHAM1827
DRAWN BY: R.F.
CHECKED BY: J.P.
DWG NUMBER:

OT-114.00

CADD FILE NAME:
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DEPT BLDGS Job No. 123199653
Scan Code ESHS9992191

APPENDIX D

Boring Logs

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Log of Boring **LB-2** Sheet 1 of 5

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 32.5 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/13/19 — Date Finished: 2/13/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 102 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 25 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 14	Water Level (ft.): First ▽ 25 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Dave Cooke
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+32.5			0					10 20 30 40	Started drilling at 8:00 AM.
	+32.3		ASPHALT (APPROX. 2-INCHES-THICK) Brown f-c SAND, some fine gravel, some asphalt, some red brick, trace silt (moist) [FILL]	1	S-1	SS	6	30 12 6 7	18	SS 0' to 2'
			Brown to gray f-c SAND, some red brick, some fine gravel, trace silt (moist) [FILL]	2	S-2	SS	8	11 9 7 18	16	SS 2' to 4'
			Brown f-c SAND, some red brick, trace fine gravel, trace silt (moist) [FILL]	4	S-3	SS	10	7 13 9 3	22	Drilled to 4'. SS 4' to 6'
			Brown f-c SAND, trace fine gravel, trace silt, trace red brick (moist) [FILL]	6	S-4	SS	3	2 3 4 2	7	SS 6' to 8'
		Class 7	Dark gray f-c SAND and RED BRICK, trace silt, trace glass (moist)	8	S-5	SS	8	3 2 3 2	5	Installed casing to 8'. Drilled to 8'. SS 8' to 10'
			Gray f-c GRAVEL, some f-c sand, trace silt (moist)	10	S-6	SS	8	16 35 34 8	69	SS 10' to 12'
			Gray-brown f-c SAND, some fine gravel, trace silt, trace red brick (moist)	12	S-7	SS	6	14 61 50 26	111	SS 12' to 14'
	+17.5	Class 2b	Gray f-c GRAVEL (moist)	15	S-8A	SS	2	51 11	24	Drilled to 15'. SS 15' to 17' Re-drove with 3" O.D. spoon for additional recovery.
	+16.5		Brown SILT, trace fine sand (moist)	16	S-8B			13 13		
		Class 5b		17						
	+12.5			20						

LANGAN

Log of Boring **LB-2** Sheet 2 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.5 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+12.5			20					10 20 30 40	
			Brown f-c SAND, trace silt (moist)	21	S-9	SS	8	6 11 11 12	22	Installed casing to 14'. Drilled to 20'. SS 20' to 22'
				22						
				23						
				24						
			Brown f-c SAND, trace silt (wet)	25	S-10	SS	10	6 6 8 12	14	Drilled to 25'. SS 25' to 27'
		Class 3b		26						
				27						
				28						
				29						
	+2.5			30						
			Brown Silty f-m SAND (wet)	31	S-11	SS	16	7 8 8 9	16	Drilled to 30'. SS 30' to 32'
				32						
				33						
				34						
	-2.5			35						
			Brown SILT, some fine sand (wet)	36	S-12	SS	18	6 5 5 7	10	Drilled to 35'. SS 35' to 37'
				37						
				38						
				39						
		Class 5b	Brown SILT, some fine sand (wet)	40	S-13	SS	15	9 9 9 10	18	Drilled to 40'. SS 40' to 42'
				41						
				42						
				43						
				44						
				45						

LANGAN

Log of Boring **LB-2** Sheet 3 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.5 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-12.5		Brown SILT, trace clay (wet)	45	S-14	SS	24	5 5 8 7	13	Drilled to 45'. SS 45' to 47'
				46						
				47						
				48						
				49						
			Brown SILT, trace fine sand, trace clay (wet)	50	S-15	SS	20	4 7 9 11	16	Drilled to 50'. SS 50' to 52'
				51						
				52						
				53						
				54						
			Gray SILT, some clay, trace fine sand (wet)	55	S-16	SS	18	6 5 7 9	12	Drilled to 55'. SS 55' to 57'
				56						
		Class 5b		57						
				58						
				59						
	-27.5		Gray Clayey SILT (wet)	60	S-17	SS	18	5 9 15 16	24	Drilled to 60'. SS 60' to 62'
				61						
				62						
				63						
				64						
	-32.5		Brownish-gray SILT, some clay (wet)	65	S-18	SS	20	4 7 11 11	18	Drilled to 65'. SS 65' to 67'
				66						
				67						
				68						
				69						
				70						

N-Value (Blows/ft) scale: 10 20 30 40

\\LANGAN.COM\DATA\PAR\DATA8\100646801\ENGINEERING DATA\GEOTECHNICAL\GINTLOGS\100610001 - GO BROOME DEVELOPMENT.GPJ ... 3/13/2019 10:47:18 AM ... Report: Log - LANGAN

LANGAN

Log of Boring **LB-2** Sheet 4 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.5 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-37.5			70					10 20 30 40	
	-37.5		Bronwish-gray SILT, trace fine sand, trace clay (wet)	71	S-19	SS	18	6 11 22 21	33	Drilled to 70'. SS 70' to 72'
				72						
				73						
				74						
	-42.5	Class 5a		75	S-20	SS	6	33 70/2"	70/2"	Drilled to 75. SS 75' to 75'8"
			Brownish-gray Sandy SILT, trace fine gravel (wet)	76						
				77						
				78						
				79						
	-47.5			80						
			Brown Silty f-m SAND (wet)	81	S-21	SS	15	28 31 34 31	65	Drilled to 80'. SS 80' to 82'
		Class 3a		82						
				83						
				84						
	-52.5			85						
			Brown Clayey SILT, trace fine sand (wet)	86	S-22	SS	16	24 26 32 31	58	Drilled to 85'. SS 85' to 87'
				87						
				88						
				89						
	-57.5	Class 5a		90						
			Brown SILT, some clay, trace fine sand (wet)	91	S-23	SS	24	15 14 16 18	30	Drilled to 90'. SS 90' to 92'
				92						
				93						
				94						
	-62.5			95						

LANGAN

Log of Boring **LB-2** Sheet 5 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.5 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale
	-62.5	Class 3a	Brown f-c SAND, some f-c gravel, some silt, trace clay (wet)	95–120
	-67.5		Brown Silty f-m SAND (wet)	
	-69.6		End of Boring at 102'.	

Sample Data					Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	
S-24	SS	12	14, 19, 29, 52	48	Drilled to 95'. SS 95' to 97'
S-25	SS	18	56, 61, 72, 77	133	Drilled to 100'. SS 100' to 102'
					Finished drilling at 12:30PM. Backfilled boring with drill cuttings and patched surface with asphalt upon completion.

N-Value (Blows/ft) scale: 10 20 30 40

LANGAN

Log of Boring **LB-4** Sheet 1 of 4

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 32.5 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/14/19 — Date Finished: 2/14/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 77 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 19 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 10	Water Level (ft.): First ▽ 25 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Dave Cooke
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+32.5								10 20 30 40	
	+32.2		ASPHALT (APPROX. 3-INCH-THICK)	0						
			Light brown to dark gray f-c SAND, some red brick, trace fine gravel, trace silt (moist) [FILL]	1	S-1	SS	12	32 10 7 7	17	Started drilling at 7:55 AM on 2/14/2019. SS 0' to 2'
			Light brown f-c SAND & RED BRICK, trace fine gravel, trace silt (moist) [FILL]	2						
				3	S-2	SS	6	12 11 17 9	28	SS 2' to 4'
			Gray to brown f-c SAND, some red brick, some silt, trace fine gravel (moist) [FILL]	4						
		Class 7		5	S-3	SS	8	5 6 3 3	9	Drilled to 4'. SS 4' to 6'
			Brown f-c SAND, some red brick, trace fine gravel, trace silt (moist) [FILL]	6						
				7	S-4	SS	4	14 24 16 9	40	SS 6' to 8' Spoon broke off down the hole. Hole was offset approximately 1 foot and redrilled to 6'. Took sample from 6' to 8' with auto hammer.
			Brown f-c SAND, some fine gravel, some silt, some red brick (moist) [FILL]	8						
				9	S-5	SS	6	21 28 24 23	52	SS 8' to 10'
	+22.5			10						
			Brown Silty fine SAND (moist)	11	S-6	SS	12	9 11 11 11	22	Installed casing to 10'. Drilled to 10'. SS 10' to 12'
				12						
				13						
				14						
		Class 3b		15						
			Brown Silty fine SAND (moist)	16	S-7	SS	16	15 10 5 11	15	Drilled to 15'. SS 15' to 17'
				17						
				18						
				19						
	+12.5			20						

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Log of Boring **LB-4** Sheet 2 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.5 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+12.5			20					10 20 30 40	
	+12.5	Class 3b	Brown f-m SAND, some silt, trace fine gravel (moist)	21	S-8	SS	3	11 11 11 12	22	Drilled to 20'. SS 20' to 22'
				22						
				23						
				24						
			Brown f-c SAND, some silt (wet)	25	S-9	SS	10	10 7 8 13	15	Drilled to 25'. SS 25' to 27'
				26						
				27						
				28						
				29						
	+2.5		Brown Sandy SILT (wet)	30	S-10	SS	10	11 11 10 9	21	Drilled to 30'. SS 30' to 32'
				31						
				32						
				33						
				34						
	-2.5		Brown SILT, trace fine sand, trace clay (wet)	35	S-11	SS	18	7 8 8 11	16	Drilled to 35'. SS 35' to 37'
		Class 5b		36						
				37						
				38						
				39						
	-7.5		Brown Clayey SILT (wet)	40	S-12	SS	18	8 8 7 10	15	Drilled to 40'. SS 40' to 42'
				41						
				42						
				43						
				44						
				45						

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Log of Boring **LB-4** Sheet 3 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.5 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-12.5	Class 5b	Brown Clayey SILT (wet)	45	S-13	SS	20	6, 7, 6, 7	13	Drilled to 45'. SS 45' to 47'
	-17.5	Class 4b	Brownish-gray Silty CLAY (wet)	50	S-14	SS	22	5, 7, 9, 10	16	Drilled to 50'. SS 50' to 52'
	-22.5	Class 5a	Brownish-gray Clayey SILT (wet)	55	S-15	SS	15	18, 14, 20, 21	34	Drilled to 55'. SS 55' to 57'
	-27.5	Class 4b	Brownish-gray Silty CLAY (wet)	60	S-16	SS	20	7, 10, 12, 12	22	Drilled to 60'. SS 60' to 62'
	-32.5	Class 5a	Brownish-gray SILT, trace fine sand, trace clay (wet)	65	S-17	SS	16	19, 25, 33, 38	58	Drilled to 65'. SS 65' to 67'
	-37.5			70						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-4** Sheet 4 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.5 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-37.5	Class 3a	Brownish-gray f-c SAND, some silt, some clay, trace fine gravel (wet)	70	S-18	SS	16	9 13 18 27	31	Drilled to 70'. SS 70' to 72'
				71						
				72						
				73						
				74						
			Brown f-m SAND, some silt (wet)	75	S-19	SS	22	28 31 34 47	65	Drilled to 75'. SS 75' to 77'
	-44.5			76						
			End of boring at 77'.	77						Finished drilling at 10:50 AM. Backfilled boring with drill cuttings and patched surface with asphalt upon completion.
				78						
				79						
				80						
				81						
				82						
				83						
				84						
				85						
				86						
				87						
				88						
				89						
				90						
				91						
				92						
				93						
				94						
				95						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-5** Sheet 1 of 4

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 32 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/14/19 — Date Finished: 2/14/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 77 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 20 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 20	Water Level (ft.): First ▽ 30 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Mark Aquino
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+32.0			0						Started drilling at 7:49 AM on 2/14/2019.
	+31.7		ASPHALT (APPROX. 3-INCH-THICK)							
			Light gray f-c SAND, some fine gravel, trace silt, trace red brick (moist) [FILL]	1	S-1	SS	6	10, 9, 6, 3	15	SS 0' to 2'
			Brown Gravelly f-c SAND, trace silt, trace red brick (moist) [FILL]	2						SS 2' to 4'
				3	S-2	SS	2	2, 2, 1, 1	3	
			No Recovery	4						Installed casing to 4'. Drilled to 4'.
				5	S-3	SS	0	2, 3, 1, 4	4	SS 4' to 6'
			RED BRICK, some fine gravel, some f-c sand, trace silt (moist) [FILL]	6						SS 6' to 8'
				7	S-4	SS	4	5, 10, 11, 20	21	No Recovery with 2" O.D. split spoon, re-drove with 3" O.D. split spoon and obtained 4" recovery.
		Class 7	Gray fine GRAVEL, some f-c sand, trace silt, trace glass (moist [FILL]	8						Installed casing to 8'. Drilled to 8'.
				9	S-5	SS	2	22, 27, 22, 20	49	SS 8' to 10'
			Light brown f-c SAND, some silt (moist) [FILL]	10						SS 10' to 12'
				11	S-6	SS	12	10, 7, 8, 7	15	
			Light brown f-c SAND, some silt, trace fine gravel, trace red brick, trace glass (moist) [FILL]	12						SS 12' to 14'
				13	S-7	SS	10	11, 11, 11, 9	22	
				14						
	+17.0			15						Installed casing to 15'. Drilled to 15'.
			Brown f-m SAND, some silt (moist)	16	S-8	SS	8	7, 5, 6, 6	11	SS 15' to 17'
		Class 3b		17						
				18						
				19						
				20						

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Log of Boring **LB-5** Sheet 2 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+12.0		Brown f-m SAND, some silt, trace clay (moist)	20	S-9	SS	12	8 6 7 6	13	Installed casing to 20'. Drilled to 20'. SS 20' to 22'
				21						
				22						
				23						
				24						
			Brown f-m SAND, some silt (moist)	25	S-10	SS	10	11 8 12 11	20	Drilled to 25'. SS 25' to 27'
		Class 3b		26						
				27						
				28						
				29						
	+2.0		Brown Silty fine SAND (wet)	30	S-11	SS	14	6 8 8 8	16	Drilled to 30'. SS 30' to 32'
				31						
				32						
				33						
				34						
	-3.0		Brown SILT, some fine sand, trace clay (wet)	35	S-12	SS	14	7 10 10 10	20	Drilled to 35'. SS 35' to 37'
				36						
				37						
				38						
				39						
	-8.0	Class 5b	Brown Clayey SILT (wet)	40	S-13	SS	18	4 7 14 13	21	Drilled to 40'. SS 40' to 42'
				41						
				42						
				43						
				44						
	-13.0			45						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-5** Sheet 3 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-13.0	Class 5b	Brown SILT, some clay (wet)	45	S-14	SS	15	5, 6, 8, 11	14	Drilled to 45'. SS 45' to 47'
	-18.0	Class 5a	Gray SILT, some clay (wet)	50	S-15	SS	16	13, 13, 20, 22	33	Drilled to 50'. SS 50' to 52'
	-23.0	Class 5b	Gray SILT, some clay (wet)	55	S-16	SS	20	7, 7, 11, 15	18	Drilled to 55'. SS 55' to 57'
			Gray SILT, some clay, trace fine sand (wet)	60	S-17	SS	18	8, 11, 10, 13	21	Drilled to 60'. SS 60' to 62'
	-33.0	Class 5a	Brownish-gray SILT, trace fine sand, trace clay (wet)	65	S-18	SS	15	34, 26, 33, 51	59	Drilled to 65'. SS 65' to 67'
	-38.0			70						

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Log of Boring **LB-5** Sheet 4 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-38.0	Class 3a	Brown f-m SAND, some silt (wet)	70	S-19	SS	14	52 44 53 45	97	Drilled to 70'. SS 70' to 72'
				71						
				72						
				73						
				74						
			Brown f-m SAND, some silt (wet)	75	S-20	SS	18	34 47 49 39	96	Drilled to 75'. SS 75' to 77'
	-45.0		End of boring at 77'.	76						
				77						Finished drilling at 10:31 AM. Backfilled boring with drill cuttings and patched surface with asphalt upon completion.
				78						
				79						
				80						
				81						
				82						
				83						
				84						
				85						
				86						
				87						
				88						
				89						
				90						
				91						
				92						
				93						
				94						
				95						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-6** Sheet 1 of 4

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 32 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/13/19 — Date Finished: 2/13/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 77 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 20 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 35	Water Level (ft.): First ▽ 25 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Mark Aquino
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+32.0			0						
	+31.9		ASPHALT (APPROX. 1-INCH-THICK)							
			Grayish-brown f-c SAND, some fine gravel, trace silt, trace asphalt (moist) [FILL]	1	S-1	SS	10	15, 22, 29, 22	51	Started drilling at 9:40 AM. SS 0' to 2' Started drilling at 9:40 AM.
			Brown to dark gray f-c SAND, some fine gravel, trace silt, trace red brick, trace asphalt (moist) [FILL]	2						SS 2' to 4'
				3	S-2	SS	10	20, 28, 15, 9	43	
			Gray f-c GRAVEL and RED BRICK, trace f-c sand, trace silt (moist) [FILL]	4						Installed casing to 4'. Drilled to 4'. SS 4' to 6'
				5	S-3	SS	4	4, 5, 5, 3	10	
			Brown fine GRAVEL, some f-c sand (moist) [FILL]	6						SS 6' to 8'
		Class 7		7	S-4	SS	2	4, 1, 1, 1	2	
			Light gray Gravelly f-c SAND, trace silt, trace wood, trace red brick (moist) [FILL]	8						Installed casing to 8'. Drilled to 8'. SS 8' to 10'
				9	S-5	SS	8	8, 12, 45, 6	57	
			Grayish-brown f-c SAND, some fine gravel, trace silt, trace red brick (moist) [FILL]	10						SS 10' to 12'
				11	S-6	SS	8	4, 4, 3, 2	7	
			Grayish-brown f-c SAND, trace fine gravel, trace silt, trace red brick (moist) [FILL]	12						SS 12' to 14'
				13	S-7	SS	3	3, 2, 3, 2	5	
	+18.0			14						
			Brown f-c SAND, trace silt, trace clay (moist)							Installed casing to 14'. Drilled to 14'. SS 14' to 16'
				15	S-8	SS	10	5, 7, 8, 6	15	
		Class 3b		16						
				17						
				18						
				19						
				20						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-6** Sheet 2 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+12.0			20					10 20 30 40	
	+12.0		Brown Silty fine SAND (moist)	21	S-9	SS	12	7 7 8 9	15	Installed casing to 20'. Drilled to 20'. SS 20' to 22'
				22						
				23						
				24						
	+7.0		Brown f-c SAND, some silt, trace fine gravel (wet)	25	S-10	SS	8	10 8 10 10	18	Installed casing to 25'. Drilled to 25'. SS 25' to 27'
		Class 3b		26						
				27						
				28						
				29						
	+2.0		Brown Silty f-m SAND (wet)	30	S-11	SS	10	6 5 8 9	13	Installed casing to 30'. Drilled to 30'. SS 30' to 32'
				31						
				32						
				33						
				34						
	-3.0		Brownish-gray Silty CLAY (wet)	35	S-12	SS	10	7 8 8 9	16	Installed casing to 35'. Drilled to 35'. SS 35' to 37'
		Class 4b		36						
				37						
				38						
				39						
	-8.0		Brown SILT, some clay (wet)	40	S-13	SS	18	5 6 10 7	16	Drilled to 40'. SS 40' to 42'
		Class 5b		41						
				42						
				43						
				44						
	-13.0			45						

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Log of Boring **LB-6** Sheet 3 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-13.0	Class 4b	Brown Silty CLAY (wet)	45	S-14	SS	20	5, 7, 7, 10	14	Drilled to 45'. SS 45' to 47'
	-18.0	Class 5b	Brownish-gray Clayey SILT, trace fine sand (wet)	50	S-15	SS	14	7, 7, 12, 12	19	Drilled to 50'. SS 50' to 52'
	-23.0	Class 4b	Grayish-brown Silty CLAY (wet)	55	S-16	SS	18	5, 6, 6, 9	12	Drilled to 55'. SS 55' to 57'
	-28.0	Class 5a	Brownish-gray SILT, some fine sand, trace fine gravel (wet)	60	S-17	SS	16	56, 46, 44, 47	90	Drilled to 60'. SS 60' to 62'
			Brown SILT, trace fine sand, trace clay (wet)	65	S-18	SS	8	17, 25, 31, 27	56	Drilled to 65'. SS 65' to 67'
				70						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-6** Sheet 4 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-38.0	Class 3a	Brown f-m SAND, some silt (wet)	70	S-19	SS	16	29 33 41 35	74	Drilled to 70'. SS 70' to 72'
				71						
				72						
				73						
				74						
			Brown f-m SAND, some silt (wet)	75	S-20	SS	16	35 40 40 46	80	Drilled to 75'. SS 75' to 77'
	-45.0		End of boring at 77'.	76						
				77						Finished drilling at 12:26PM. Backfilled boring with drill cuttings and patched surface with asphalt upon completion.
				78						
				79						
				80						
				81						
				82						
				83						
				84						
				85						
				86						
				87						
				88						
				89						
				90						
				91						
				92						
				93						
				94						
				95						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-7** Sheet 1 of 4

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 32 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/11/19 — Date Finished: 2/13/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 77 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 20 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 15	Water Level (ft.): First ▽ 25 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Mark Aquino
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+32.0			0						
	+31.8		ASPHALT (APPROX. 2-INCH-THICK)							
			Brown f-c SAND, some fine gravel, trace silt, trace red brick (moist) [FILL]	1	S-1	SS	12	48 8 9 12	17	Started drilling at 11:47 AM on 2/11/2019. SS 0' to 2'
			Brown to gray Gravelly f-c SAND, trace silt, trace asphalt fragments (moist) [FILL]	2						SS 2' to 4'
				3	S-2	SS	8	49 32 9 9	41	
			No Recovery	4						Installed casing to 4'. Drilled to 4'. SS 4' to 6'
				5	S-3	SS	0	3 2 1 1	3	
		Class 7	Brown f-c SAND and f-c GRAVEL, trace silt, trace red brick (moist) [FILL]	6						SS 6' to 8' No Recovery with 2" O.D. split spoon, re-drove with 3" O.D. split spoon and obtained 4" recovery.
				7	S-5	SS	4	1 1 1 1	2	
			Brown to dark gray f-c SAND, some fine gravel, trace silt, trace red brick (moist) [FILL]	8						Installed casing to 8'. Drilled to 8'. SS 8' to 10'
				9	S-5	SS	8	15 24 17 19	41	
			Brown f-c SAND, trace fine gravel, trace silt, trace red brick (moist) [FILL]	10						SS 10' to 12'
				11	S-6	SS	10	12 9 11 11	20	
	+20.0			12						Drilled to 12'. SS 12' to 14'
			Dark brown f-m SAND, some silt, trace fine gravel (moist)	13	S-7	SS	8	15 23 32 29	55	
	+17.0			14						
			Dark brown Silty f-c SAND, trace fine gravel (moist)	15						Installed casing to 15'. Drilled to 15'. SS 15' to 17'
		Class 3a		16	S-8	SS	6	15 25 29 30	54	
				17						
				18						
				19						
	+12.0			20						

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Log of Boring **LB-7** Sheet 2 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+12.0		Brown f-c SAND, some silt (moist)	20	S-9	SS	10	11 9 9 10	18	Installed casing to 20'. Drilled to 20'. SS 20' to 22'
	+7.0	Class 3b	Brown Silty fine SAND (wet)	25	S-10	SS	16	10 9 13 13	22	Drilled to 25'. SS 25' to 27' Stopped drilling for the day at 1:10 PM on 2/11/2019. Resumed drilling at 7:49 AM on 2/13/2019.
	+2.0		Brown SILT, some clay, trace fine sand (wet)	30	S-11	SS	8	4 4 6 5	10	Drilled to 30'. SS 30' to 32'
	-3.0	Class 5b	Brown Clayey SILT (wet)	35	S-12	SS	20	2 4 6 9	10	Drilled to 35'. SS 35' to 37'
	-8.0		Brown SILT, trace clay (wet)	40	S-13	SS	18	2 3 8 10	11	Drilled to 40'. SS 40' to 42'
				45						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-7** Sheet 3 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-13.0	Class 5b	Grayish-brown SILT, some clay, trace fine sand (wet)	45	S-14	SS	16	7 8 15 15	23	Drilled to 45'. SS 45' to 47'
	-18.0	Class 5a	Brown SILT, trace fine sand, trace clay (wet)	50	S-15	SS	18	14 20 25 19	45	Drilled to 50'. SS 50' to 52'
	-23.0	Class 3a	Brown to dark gray f-c SAND, some silt, trace clay (wet)	55	S-16	SS	18	23 28 29 34	57	Drilled to 55'. SS 55' to 57'
			Brown f-c SAND, some silt (wet)	60	S-17	SS	20	27 28 38 29	66	Drilled to 60'. SS 60' to 62'
			Brown f-m SAND, some silt (wet)	65	S-18	SS	16	17 22 33 27	55	Drilled to 65'. SS 65' to 67'
				70						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-7** Sheet 4 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-38.0	Class 3a	Brown f-c SAND, some silt (wet)	70	S-19	SS	15	10 25 25 30	50	Drilled to 70'. SS 70' to 72'
	-43.0	Class 4a	Grayish-brown Sandy CLAY, some fine gravel, some silt (wet)	75	S-20	SS	12	27 57 80 82	137	Drilled to 75'. SS 75' to 77'
	-45.0		End of boring at 77'.	77						Finished drilling at 9:20 AM. Backfilled boring with drill cuttings and patched surface with asphalt upon completion.

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-8** Sheet 1 of 5

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 33 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/8/19 — Date Finished: 2/8/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 102 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 24 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 15	Water Level (ft.): First ▽ 30 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Dave Cooke
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety/Automatic — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+33.0									Started drilling at 8:15 AM. Automatic hammer used due to rain.
	+32.9		ASPHALT (APPROX. 1-INCH-THICK)	0						
			Brown f-c SAND, some fine gravel, trace silt, trace red brick, trace tile (moist) [FILL]	1	S-1	SS	10	6, 7, 5, 4	12	SS 0' to 2'
			Brown f-c SAND & RED BRICK, trace silt (moist) [FILL]	2						
				3	S-2	SS	4	5, 3, 6, 6	9	SS 2' to 4'. Drilled to 4'.
			Light grayish-brown f-c SAND, trace fine gravel, trace silt, trace red brick (moist) [FILL]	4						
		Class 7		5	S-3	SS	8	3, 1, 1, 1	2	SS 4' to 6'
			Top 4": Light grayish-brown f-c SAND, some fine gravel, trace silt, trace red brick (moist) [FILL]	6						
			Bottom 4": ASPHALT	7	S-4	SS	8	3, 2, 60/5"	60/5"	SS 6' to 7'5". Drilled to 8'. Approx. 6" obstruction from 7.7' to 8'. Installed casing to 8'.
			Brown f-c SAND, trace fine gravel, trace silt, trace red brick (moist) [FILL]	8						Drilled to 8'. SS 8' to 10'
				9	S-5	SS	4	3, 1, 2, 3	3	
	+23.0			10						SS 10' to 12'
			Brown f-m SAND, some silt (moist)	11	S-6	SS	10	3, 3, 3, 3	6	
				12						
				13						
				14						
		Class 6	Brown f-c SAND, trace silt (moist)	15						Installed casing to 15'. Drilled to 15'.
				16	S-7	SS	8	3, 2, 4, 4	6	SS 15' to 17'
				17						
				18						
				19						
				20						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-8** Sheet 2 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 33 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+13.0			20					10 20 30 40	
	+13.0		Brown Silty f-m SAND (moist)	21	S-8	SS	14	4 4 4 5	8	Drilled to 20'. SS 20' to 22'
				22						
				23						
				24						
			Brown Silty f-m SAND (moist)	25	S-9	SS	15	5 4 5 4	9	Drilled to 25'. SS 25' to 27'
		Class 6		26						
				27						
				28						
				29						
			Brown Silty f-m SAND (moist)	30	S-10	SS	12	5 5 4 4	9	Drilled to 30' SS 30' to 32'
				31						
				32						
				33						
				34						
	-2.0		Reddish-brown Clayey SILT (wet)	35	S-11	SS	20	5 6 7 7	13	Drilled to 35'. SS 35' to 37'
				36						
				37						
				38						
				39						
	-7.0	Class 5b	Grayish-brown SILT, trace fine sand, trace clay (wet)	40	S-12	SS	22	6 8 9 12	17	Drilled to 40'. SS 40' to 42'
				41						
				42						
				43						
				44						
				45						

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Log of Boring **LB-8** Sheet 3 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 33 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-12.0			45					10 20 30 40	
	-12.0	Class 5a	Brown SILT, some f-m sand, some clay (wet)	46	S-13	SS	20	17 20 22 28	42	Drilled to 45'. SS 45' to 47'
				47						
				48						
				49						
	-17.0			50						
		Class 3b	Brown f-c SAND, some silt (wet)	51	S-14	SS	15	9 9 8 9	17	Drilled to 50'. SS 50' to 52'
				52						
				53						
				54						
			Brown f-c SAND, trace silt (wet)	55	S-15	SS	12	11 10 12 12	22	Drilled to 55'. SS 55' to 57'
				56						
				57						
				58						
				59						
	-27.0			60						
		Class 5a	Brown SILT, trace fine sand (wet)	61	S-16	SS	15	12 15 19 19	34	Drilled to 60'. SS 60' to 62'
				62						
				63						
				64						
	-32.0			65						
		Class 2a	Brown f-c GRAVEL, some f-c sand, trace silt (wet)	66	S-17	SS	10	23 19 20 23	39	Drilled to 65'. SS 65' to 67'
				67						
				68						
				69						
	-37.0			70						

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Log of Boring **LB-8** Sheet 4 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 33 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-37.0			70					10 20 30 40	
		Class 2a	Brown Sandy f-c GRAVEL, trace silt (wet)	71	S-18	SS	10	25 35 28 24	63	Drilled to 70'. Moderate rig chatter SS 70' to 72'
	-42.0			72						
				73						
				74						
			Brown f-c SAND, some f-c gravel, trace silt (wet)	75						
				76	S-19	SS	12	46 24 30 36	54	Drilled to 75'. Moderate rig chatter SS 75' to 77'
				77						
				78						
				79						
			Brown f-c SAND, some f-c gravel, trace silt (wet)	80						
				81	S-20	SS	12	74 70 100/5"	100/5"	Drilled to 80'. Moderate rig chatter Switched to safety hammer for SPT sampling. SS 80' to 81'5"
				82						
				83						
				84						
		Class 3a	Brown f-c SAND, some fine gravel, trace silt (wet)	85						
				86	S-21	SS	16	65 63 60 51	123	Drilled to 85'. SS 85' to 87'
				87						
				88						
				89						
			Brown f-c SAND, trace fine gravel, trace silt (wet)	90						
				91	S-22	SS	18	52 61 47 44	108	Drilled to 90'. SS 90' to 92'
				92						
				93						
				94						
				95						

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Log of Boring **LB-8** Sheet 5 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 33 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-62.0			95					10 20 30 40	
		Class 3a	Brown f-c SAND, trace silt (wet)	96	S-23	SS	16	55 80 68 50/1"	148	Drilled to 95'. SS 95' to 96'7"
				97						
				98						
				99						
			Brown f-m SAND, some silt (wet)	100						Drilled to 100'. SS 100' to 102'
				101	S-24	SS	18	67 63 58 54	121	
	-69.0			102						
			End of boring at 102'.	103						Finished drilling at 1:10 PM. Backfilled boring with soil cuttings and hole plug and patched surface with asphalt upon completion.
				104						
				105						
				106						
				107						
				108						
				109						
				110						
				111						
				112						
				113						
				114						
				115						
				116						
				117						
				118						
				119						
				120						

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Log of Boring **LB-11** Sheet 1 of 4

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 32.4 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/11/19 — Date Finished: 2/11/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 77 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 19 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 20	Water Level (ft.): First ▽ 30 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Mark Aquino
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+32.4									Started drilling at 8:35 AM.
	+32.3		ASPHALT (APPROX. 1-INCH-THICK)	0						
			Brown f-c SAND, some f-c gravel, some red brick, trace silt, trace asphalt (moist) [FILL]	1	S-1	SS	8	6 6 12 13	18	SS 0' to 2'
			No Recovery	2	S-2	SS	0	50/1"	50/1"	SS 2' to 4'
			No Recovery	3						
		Class 7		4	S-3	SS	0	5 4 7 7	11	Drilled to 4'; heavy rig chatter. Installed casing to 4'. Drilled to 4'. SS 4' to 6'
			Brown f-c SAND, some fine gravel, some silt, some red brick (moist) [FILL]	5						SS 6' to 8'
				6	S-4	SS	6	12 18 10 6	28	
			Brown f-c SAND, trace fine gravel, trace silt, trace red brick (moist) [FILL]	7						Installed casing to 8'. Drilled to 8'. SS 8' to 10'
				8	S-5	SS	2	3 4 5 8	9	
	+22.4		Brown f-m SAND, some silt (moist)	9						SS 10' to 12'
				10	S-6	SS	10	9 10 9 8	19	
				11						
				12						
				13						
				14						
		Class 3b	Brown f-m SAND, some silt (moist)	15						Installed casing to 15'. Drilled to 15'. SS 15' to 17'
				16	S-7	SS	10	5 6 6 7	12	
				17						
				18						
				19						
	+12.4			20						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-11** Sheet 2 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.4 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+12.4			20					10 20 30 40	
	+12.4		Brown Sandy SILT, trace fine gravel (moist)	21	S-8	SS	8	7 7 8 9	15	Installed casing to 20'. Drilled to 20'. SS 20' to 22'
				22						
				23						
				24						
	+7.4	Class 5b		25						
			Brown SILT, trace fine sand, trace clay (moist)	26	S-9	SS	10	8 5 6 6	11	Drilled to 25'. SS 25' to 27'
				27						
				28						
				29						
	+2.4			30						
			Brown SILT, trace fine sand, trace clay (wet)	31	S-10	SS	6	3 3 4 6	7	Drilled to 30'. SS 30' to 32'
		Class 6		32						
				33						
				34						
	-2.6			35						
			Brown SILT, some clay, trace fine sand (wet)	36	S-11	SS	14	4 8 11 13	19	Drilled to 35'. SS 35' to 37'
				37						
				38						
				39						
	-7.6	Class 5b		40						
			Brownish-gray Clayey SILT (wet)	41	S-12	SS	18	15 15 14 13	29	Drilled to 40'. SS 40' to 42'
				42						
				43						
				44						
	-12.6			45						

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Log of Boring **LB-11** Sheet 3 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.4 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-12.6	Class 3a	Brown f-c SAND, some silt, trace clay (wet)	45	S-13	SS	20	23 37 51 41	88	Drilled to 45'. SS 45' to 47'
	-17.6	Class 3b	Brown f-m SAND, trace silt (wet)	50	S-14	SS	18	12 13 14 13	27	Drilled to 50'. SS 50' to 52'
			Brown f-c SAND, trace silt (wet)	55	S-15	SS	16	10 12 15 16	27	Drilled to 55'. SS 55' to 57'
	-27.6	Class 3a	Brown f-m SAND, trace silt (wet)	60	S-16	SS	14	15 21 23 22	44	Drilled to 60'. SS 60' to 62'
	-32.6	Class 5a	Brown Sandy SILT, trace fine gravel (wet)	65	S-17	SS	16	36 42 52 50	94	Drilled to 65'. SS 65' to 67'
	-37.6			70						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-11** Sheet 4 of 4

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 32.4 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-37.6			70					10 20 30 40	
		Class 2a and 3a	Reddish-brown f-c SAND and f-c GRAVEL, trace silt (wet)	71	S-18	SS	10	50 48 30 38	78	Drilled to 70'. SS 70' to 72'
	-42.6			72						
		Class 3a	Brown SAND, some fine gravel, trace silt (wet)	73						
				74						
				75	S-19	SS	12	30 35 37 34	72	Drilled to 75; slight rig chatter. SS 75' to 77'
	-44.6		End of boring at 77'.	76						
				77						Finished drilling at 11:21 AM. Backfilled boring with drill cuttings and patched surface with asphalt upon completion.
				78						
				79						
				80						
				81						
				82						
				83						
				84						
				85						
				86						
				87						
				88						
				89						
				90						
				91						
				92						
				93						
				94						
				95						

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Log of Boring **LB-12** Sheet 1 of 5

Project: Go Broome Development	Project No.: 100646801
Location: 60 Norfolk Street, New York, New York	Elevation and Datum: Approx. el 31 NAVD88
Drilling Company: Craig Geotechnical Drilling Co., Inc.	Date Started: 2/11/19 — Date Finished: 2/11/19
Drilling Equipment: CME-75 Truck-Mounted Drill Rig	Completion Depth: 102 ft — Rock Depth: NE
Size and Type of Bit: 3-7/8" O.D. Tri-Cone Roller Bit	Number of Samples: Disturbed 26 — Undisturbed - — Core -
Casing Diameter (in): 4" I.D. Steel — Casing Depth (ft): 20	Water Level (ft.): First ▽ 30 — Completion ▼ - — 24 HR. ▼ -
Casing Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	Drilling Foreman: Dave Cooke
Sampler: 2" O.D. Split Spoon	Field Engineer: Patrick Lenihan
Sampler Hammer: Safety — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+31.0									
	+30.9		ASPHALT (APPROX. 1-INCH-THICK)	0						
			Gray to brown f-c SAND, some fine gravel, trace silt, trace red brick, trace asphalt (moist) [FILL]	1	S-1	SS	8	12 10 9 5	19	Started drilling at 8:16 AM. SS 0' to 2'
			Dark gray f-c SAND and RED BRICK, trace fine gravel, trace silt (moist) [FILL]	2						
				3	S-2	SS	6	7 7 5 6	12	SS 2' to 4'
			Brown to tan f-c SAND and RED BRICK, trace fine gravel, trace silt (moist) [FILL]	4						
				5	S-3	SS	8	7 3 3 11	6	Drilled to 4'. SS 4' to 6'
			Brown to tan f-c SAND and RED BRICK, trace fine gravel, trace silt, trace asphalt (moist) [FILL]	6						
				7	S-4	SS	8	8 4 5 4	9	SS 6' to 8'
		Class 7	Brown f-c SAND, some gravel, some red brick, trace silt, trace asphalt (moist) [FILL]	8						
				9	S-5	SS	4	9 7 8 6	15	Installed casing to 8'. Drilled to 8'. SS 8' to 10'
			RED BRICK, some fine gravel, trace silt (moist) [FILL]	10						
				11	S-6	SS	3	7 8 7 9	15	SS 10' to 12'
			Dark gray f-c SAND, some fine gravel, some red brick, trace silt (moist) [FILL]	12						
				13	S-7	SS	10	6 4 2 4	6	Drilled to 12'. SS 12' to 14'
			Brown f-c SAND, some red brick, trace silt (moist) [FILL]	14						
				15	S-8	SS	12	49 10 7 7	17	SS 14' to 16'
	+15.0			16						
			Brown f-m SAND, some silt (moist)	17	S-9	SS	10	5 6 7 8	13	Drilled to 16'. SS 16' to 18'
		Class 3b		18						
				19						
				20						

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Log of Boring **LB-12** Sheet 2 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 31 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description
	+11.0	Class 3b	Brown f-m SAND, some silt (moist)
	+6.0	Class 5b	Brown Sandy SILT (moist)
	+1.0	Class 6	Brown SILT, trace clay (wet)
	-4.0	Class 5b	Grayish-brown SILT, some clay (wet)
	-9.0		Grayish-brown Clayey SILT (wet)
	-14.0		

Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
20						Installed casing to 20'. Drilled to 20'. SS 20' to 22'
21	S-10	SS	12	5 6 8 8	14	
22						
23						
24						
25						Drilled to 25'. SS 25' to 27'
26	S-11	SS	18	8 9 9 10	18	
27						
28						
29						
30						Drilled to 30'. SS 30' to 32'
31	S-12	SS	20	3 4 4 5	8	
32						
33						
34						
35						Drilled to 35'. SS 35' to 37'
36	S-13	SS	18	5 6 9 17	15	
37						
38						
39						
40						Drilled to 40'. SS 40' to 42'
41	S-14	SS	20	10 10 10 16	20	
42						
43						
44						
45						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-12** Sheet 3 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 31 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-14.0		Grayish-brown SILT, some clay (wet)	45	S-15	SS	16	17 16 17 22	33	Drilled to 45'. SS 45' to 47'
		Class 5a	Grayish-brown SILT, some clay, trace fine sand (wet)	50	S-16	SS	18	11 16 18 27	34	Drilled to 50'. SS 50' to 52'
	-24.0		Brown f-c SAND, some silt (wet)	55	S-17	SS	18	35 28 29 32	57	Drilled to 55'. SS 55' to 57'
			Brown f-m SAND, some silt (wet)	60	S-18	SS	16	18 23 22 23	45	Drilled to 60'. SS 60' to 62'
		Class 3a	Brown f-c SAND, trace fine gravel, trace silt (wet)	65	S-19	SS	12	19 22 20 25	42	Drilled to 65'. SS 65' to 67'
				70						

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-12** Sheet 4 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 31 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description
	-39.0		Brown f-c SAND, some f-c gravel, trace silt (wet)
		Class 3a	Brown f-c SAND, trace fine gravel, trace silt (wet)
			Brown f-m SAND, some silt (wet)
	-54.0		Brown f-m SAND, some silt (wet)
		Class 3b	
	-59.0		Brown f-m SAND, some silt (wet)
		Class 3a	

Depth Scale: 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95

Sample Data

Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
S-20	SS	12	31 25 27 25	52	Drilled to 70'. SS 70' to 72'
S-21	SS	12	29 32 29 30	61	Drilled to 75; moderate rig chatter. SS 75' to 77'
S-22	SS	14	22 29 33 36	62	Drilled to 80'. SS 80' to 82'
S-23	SS	12	9 8 12 23	20	Drilled to 85'. SS 85' to 87'
S-24	SS	16	32 35 36 63	71	Drilled to 90'. SS 90' to 92'

N-Value (Blows/ft) scale: 10 20 30 40

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Log of Boring **LB-12** Sheet 5 of 5

Project	Project No.
Go Broome Development	100646801
Location	**Elevation and Datum**
60 Norfolk Street, New York, New York	Approx. el 31 NAVD88

Material Symbol	Elev. (ft)	Building Code	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	N-Value (Blows/ft)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	-64.0			95					10 20 30 40	
	-64.0	Class 4a	Gray CLAY, some silt (wet)	96	S-25	SS	16	20 30 32 36	62	Drilled to 95'. SS 95' to 97'
				97						
				98						
				99						
			Gray CLAY, trace silt (wet)	100	S-26	SS	20	55 51 67 60	118	Drilled to 100'. SS 100' to 102'
	-71.0			101						
			End of boring at 102'.	102						Finished drilling at 12:30PM. Backfilled boring with drill cuttings and patched surface with asphalt upon completion.
				103						
				104						
				105						
				106						
				107						
				108						
				109						
				110						
				111						
				112						
				113						
				114						
				115						
				116						
				117						
				118						
				119						
				120						

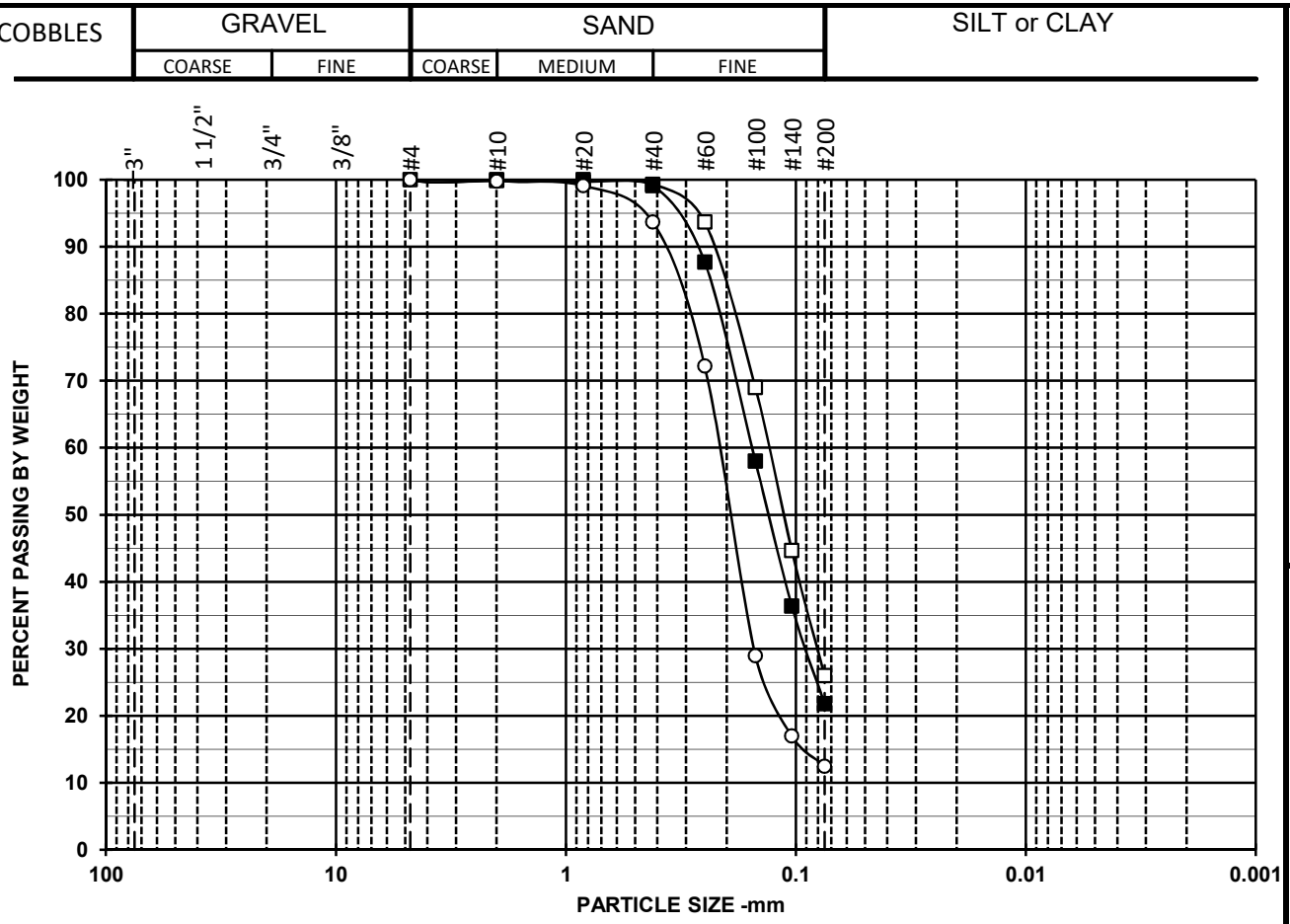
APPENDIX E

Laboratory Testing Results

Langan Engineering #100646801
50 Norfolk St
LABORATORY TESTING DATA SUMMARY

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS						REMARKS
			WATER CONTENT (%)	LIQUID LIMIT (-)	PLASTIC LIMIT (-)	PLAS. INDEX (-)	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	
LB-2	S-17	60-62	30.8	26	21	5	CL-ML		
LB-4	S-7	15-17	26.3				SM	26.0	
LB-5	S-11	30-32	23.4				SM	21.8	
LB-5	S-14	45-47	29.8	23	20	3	ML		
LB-6	S-19	70-72	20.6				SM	12.5	
LB-7	S-10	25-27	23.2				SM	22.6	
LB-8	S-8	20-22	25.6				SM	20.6	
LB-11	S-12	40-42	28.7	25	21	4	CL-ML		
LB-12	S-17	55-57	22.5				SP-SM	8.2	

Note: (1) USCS symbol based on visual observation and Sieve and Atterberg limits reported.



Symbol	□	■	○
Boring	LB-4	LB-5	LB-6
Sample	S-7	S-11	S-19
Depth	15-17	30-32	70-72
% +3"	0.0	0.0	0.0
% Gravel	0.0	0.0	0.0
% SAND	74.0	78.2	87.5
%C SAND	0.1	0.0	0.2
%M SAND	0.6	0.9	6.1
%F SAND	73.3	77.3	81.2
% FINES	26.0	21.8	12.5
D_{100} (mm)	4.750	2.000	4.750
D_{60} (mm)	0.131	0.155	0.216
D_{30} (mm)	0.080	0.090	0.152
D_{10} (mm)			
Cc			
Cu			

Sieve Size/ID #	Percent Finer Data		
6"			
4"			
3"			
1 1/2"			
1"			
3/4"			
1/2"			
3/8"			
#4	100.0		100.0
#10	99.9		99.8
#20	99.7	100.0	99.1
#40	99.3	99.1	93.7
#60	93.7	87.7	72.2
#100	69.0	58.0	29.0
#140	44.7	36.4	17.0
#200	26.0	21.8	12.5
5μ m			
2μ m			
1μ m			

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	26.3				SM		Brown, Silty sand	02/28/19
■	23.4				SM		Brown, Silty sand	02/28/19
○	20.6				SM		Brown, Silty sand	02/28/19

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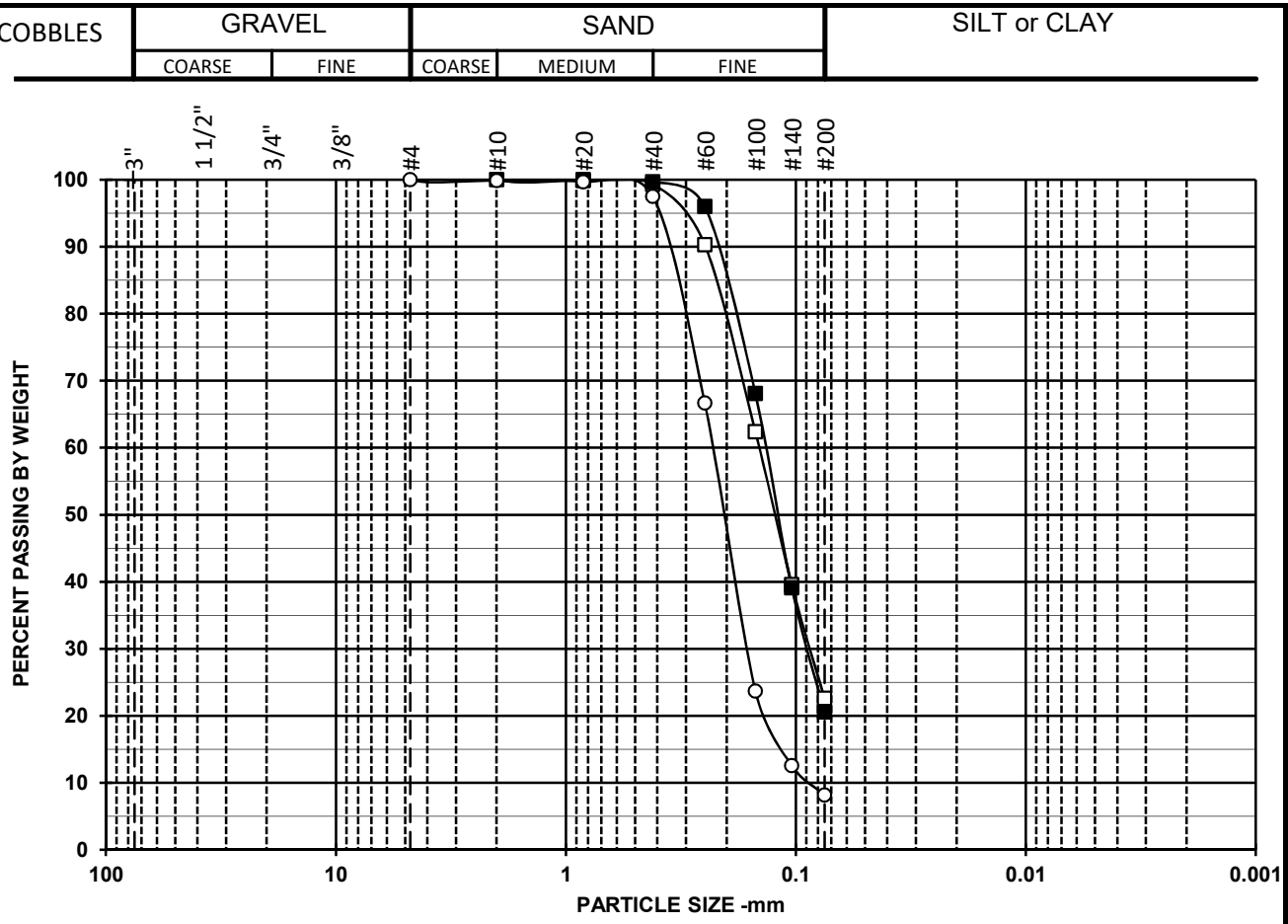

Symbol	□	■	○
Boring	LB-7	LB-8	LB-12
Sample	S-10	S-8	S-17
Depth	25-27	20-22	55-57
% +3"	0.0	0.0	0.0
% Gravel	0.0	0.0	0.0
% SAND	77.4	79.4	91.8
%C SAND	0.0	0.0	0.1
%M SAND	0.7	0.3	2.4
%F SAND	76.7	79.1	89.3
% FINES	22.6	20.6	8.2
D_{100} (mm)	2.000	2.000	4.750
D_{60} (mm)	0.144	0.135	0.230
D_{30} (mm)	0.087	0.089	0.161
D_{10} (mm)			0.086
Cc			1.300
Cu			2.7

Sieve Size/ID #	Percent Finer Data		
6"			
4"			
3"			
1 1/2"			
1"			
3/4"			
1/2"			
3/8"			
#4			100.0
#10		100.0	99.9
#20	100.0	99.9	99.7
#40	99.3	99.7	97.5
#60	90.3	96.0	66.7
#100	62.4	68.1	23.7
#140	39.6	39.1	12.6
#200	22.6	20.6	8.2
5μ m			
2μ m			
1μ m			

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	23.2				SM		Brown, Silty sand	02/28/19
■	25.6				SM		Brown, Silty sand	02/28/19
○	22.5				SP-SM		Brown, Poorly graded sand with silt	02/28/19

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