818 LEXINGTON AVENUE

BROOKLYN, NEW YORK

Remedial Action Work Plan

NYC VCP Site Number: 14CVCP260K

OER Site Number: 14EHAN582K

Prepared for:

Allan Lebovits PC

266 Broadway Suite 304

Brooklyn, NY 11211

Prepared by:

EBC

Environmental Business Consultants

1808 Middle Country Road

Ridge, NY 11961

JULY 2014

REMEDIAL ACTION WORK PLAN
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LIST OF ACRONYMS

Acronym	Definition
AOC	Area of Concern
BOA	Brownfield Opportunity Area
CAMP	Community Air Monitoring Plan
COC	Certificate of Completion
CSOP	Contractors Site Operation Plan
ECs/ICs	Engineering and Institutional Controls
HASP	Health and Safety Plan
VCA	Voluntary Cleanup Agreement
NOC	Notice of Completion
NYC VCP	New York City Voluntary Cleanup Program
NYC DEP	New York City Department of Environmental Protection
NYC DOHMH	New York State Department of Health and Mental Hygiene
NYCRR	New York Codes Rules and Regulations
NYC OER	New York City Office of Environmental Remediation
NYS DEC	New York State Department of Environmental Conservation
NYS DOH	New York State Department of Health
NYS DOT	New York State Department of Transportation
OSHA	United States Occupational Health and Safety Administration
PE	Professional Engineer
PID	Photo Ionization Detector
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RAOs	Remedial Action Objectives
RAR	Remedial Action Report
RAWP	Remedial Action Work Plan or Plan
RCA	Recycled Concrete Aggregate
RD	Remedial Design
RI	Remedial Investigation
RMZ	Residual Management Zone
SCOs	Soil Cleanup Objectives
SCG	Standards, Criteria and Guidance
SMP	Site Management Plan
SPDES	State Pollutant Discharge Elimination System
SVOC	Semi-Volatile Organic Compound
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound

CERTIFICATION

I, Ariel Czemerinski, am a Professional Engineer licensed in the State of New York. I have primary direct responsibility for implementation of the remedial action for the Redevelopment Site located at 818 Lexington Avenue, Brooklyn, NY, OER Project No. 14EHAN582K and VCP Site number 14CVCP260K.

I certify that this Remedial Action Work Plan (RAWP) has a plan for handling, transport and disposal of soil, fill, fluids and other materials removed from the property in accordance with applicable City, State and Federal laws and regulations. Importation of all soil, fill and other material from off-Site will be in accordance with all applicable City, State and Federal laws and requirements. This RAWP has provisions to control nuisances during the remediation and all invasive work, including dust and odor suppression.

_____

Name

_____

NYS PE License Number

_____

Signature

_____

Date

PE Stamp

EXECUTIVE SUMMARY

Allan Lebovits PC has applied to enroll in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a 7,800-ft^2 Site located at 818 Lexington Avenue in the Stuyvesant Heights section of Brooklyn, New York. A remedial investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP). The remedial action described in this document provides for the protection of public health and the environment consistent with the intended property use, complies with applicable environmental standards, criteria and guidance and conforms with applicable laws and regulations.

Site Location and Current Usage

The Site is located at 818 Lexington Avenue in the Stuyvesant Heights section of Brooklyn, New York, and is currently identified as Block 1628, Lot 21 on the New York City Tax Map. Figure 1 shows the Site location. Lot 21 is a rectangular shaped lot consisting of 78 feet of street frontage on Lexington Avenue and a depth of approximately 100 feet for a total of approximately 7,800 ft^2. The Site is located on the south side of Lexington Avenue between Patchen Avenue and Ralph Avenue and is bordered by Lexington Avenue to the north, a thin vacant lot to the west (812 Lexington Avenue), the Jacquelyn Hernandez Adult Day Health Center facility to the east (822 Lexington Avenue), and multiple 2 and 3-story walk-ups (793-803 Quincy Street) to the south. A map of the site boundary is shown on Figure 2.

The Site currently is vacant and undeveloped, with the exception of a 2 foot thick concrete slab approximately 50 ft by 68 feet wide located approximately 5’ below sidewalk grade for a foundation that was being constructed in 2012 as part of a new commercial building. The building was not finished and construction was terminated. The remainder of the Site outside of the concrete slab consists of exposed soil. A soil stockpile is located behind the foundation in the rear of the lot.

Summary of Proposed Redevelopment Plan

The proposed future use of the Site will consist of a 6-story apartment building with a full cellar. A cellar level parking area will be constructed behind the building which will be accessed by a

ramp along the west side of the building. The cellar will be used for water, electric, trash compactor, and bicycle storage rooms, as well as accessory space for the apartments above. The residential lobby will be at ground level, but the first floor will be approximately 5 feet above sidewalk grade.

The top of the existing foundation slab is approximately 5 feet below grade, and the rear and front of the Site will be excavated to approximately 7 feet below sidewalk grade to add additional foundation to meet the same height. Excavation ranging from 1 to 7 feet below sidewalk grade will be performed along the west side of the existing foundation to create a ramp to the rear cellar level parking area. The entire Site will be capped with the concrete ramp and the concrete building foundation. An estimated 500 cubic yards will be excavated to construct the concrete slab around the existing foundation slab.

Layout of the redevelopment plans for the cellar, lobby level and first floor is presented in Figure 3. The current zoning designation is R6A with a C2-4 commercial overlay. The proposed use is consistent with existing zoning for the property.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

Summary of the Remedy

The proposed remedial action achieves protection of public health and the environment for the intended use of the property. The proposed remedial action achieves all of the remedial action objectives established for the project and addresses applicable standards, criterion, and guidance; is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants; is cost effective and implementable; and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile

organic carbon compounds.

3. Establishment of Site-Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Installation and sampling of one groundwater well prior to start construction.
6. Excavation and removal of soil/fill exceeding Track 4 Site-Specific SCOs. For development purposes, the area of the Site outside of the footprint of the existing foundation will be excavated to depths of 1 to 7 feet for the new building's cellar level. Approximately 750 tons of soil will be removed.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
8. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
9. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
10. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
11. Installation of a vapor barrier system below the concrete slab of the building to be constructed behind and along side the existing concrete foundation slab as well as behind foundation walls of the proposed building. The vapor barrier will consist of Raven Industries' VaporBlock 20 Plus, which is a seven layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins;
12. Installation of an active Sub-Slab Depressurization System (SSDS) below the concrete slab to be constructed behind and along the side of the existing foundation slab.
13. Construction and maintenance of foundation slab, 24 inch thick concrete foundation slab to be constructed behind and along side the existing foundation slab, and the 6 inch thick concrete vehicle ramp to be constructed along the side of the building to prevent human exposure to residual soil/fill remaining under the Site.

14. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
15. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations.
16. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.
17. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
18. The property will continue to be registered with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

COMMUNITY PROTECTION STATEMENT

The Office of Environmental Remediation created the New York City Voluntary Cleanup Program (NYC VCP) to provide governmental oversight for the cleanup of contaminated property in NYC. This Remedial Action Work Plan ("cleanup plan") describes the findings of prior environmental studies that show the location of contamination at the Site, and describes the plans to clean up the Site to protect public health and the environment.

This cleanup plan provides a very high level of protection for neighboring communities and also includes many other elements that address common community concerns, such as community air monitoring, odor, dust and noise controls, hours of operation, good housekeeping and cleanliness, truck management and routing, and opportunities for community participation. The purpose of this Community Protection Statement is to explain these community protection measures in non-technical language to simplify community review.

Remedial Investigation and Cleanup Plan. Under the NYC VCP, a thorough cleanup study of this property (called a remedial investigation) has been performed to identify past property usage, to sample and test soils, groundwater and soil vapor, and identify contaminant sources present on the property. The cleanup plan has been designed to address all contaminant sources that have been identified during the study of this property.

Identification of Sensitive Land Uses. Prior to selecting a cleanup, the neighborhood was evaluated to identify sensitive land uses nearby, such as schools, day care facilities, hospitals and residential areas. The cleanup program was then tailored to address the special conditions of this community.

Qualitative Human Health Exposure Assessment. An important part of the cleanup planning for the Site is the performance of a study to find all of the ways that people might come in contact with contaminants at the Site now or in the future. This study is called a Qualitative Human Health Exposure Assessment (QHHEA). A QHHEA was performed for this project. This assessment has considered all known contamination at the Site and evaluated the potential for people to come in contact with this contamination. All identified public exposures will be addressed under this cleanup plan.

Construction Health and Safety Plan. This cleanup plan includes a Construction Health and Safety Plan (CHASP) that is designed to protect community residents and on-Site workers. The elements of this plan are in compliance with safety requirements of the United States Occupational Safety and Health Administration (OSHA). This plan includes many protective elements including those discussed below.

Site Safety Coordinator. This project has a designated Site Safety Coordinator to implement the CHASP. The Site Safety Coordinator maintains an emergency contact sheet and protocol for management of emergencies. The Site Safety Coordinator is Mr. Kevin Waters of Environmental Business Consultants. Mr. Waters can be reached at (631) 504-6000.

Worker Training. Workers participating in cleanup of contaminated material on this project are required to be trained in a 40-hour hazardous waste operators training course and to take annual refresher training. This pertains only to workers performing specific tasks including removing hazardous material and installing cleanup systems in contaminated areas.

Community Air Monitoring Plan. Community air monitoring will be performed during this cleanup project to ensure that the community is properly protected from contaminants, dust and odors. Air samples will be tested in accordance with a detailed plan called the Community Air Monitoring Plan (CAMP). Results will be regularly reported to the NYC OER. This cleanup plan also has a plan to address any unforeseen problems that might occur during the cleanup (called a 'Contingency Plan').

Odor, Dust and Noise Control. This cleanup plan includes actions for odor and dust control. These actions are designed to prevent off-Site odor and dust nuisances and includes steps to be taken if nuisances are detected. Generally, dust is managed by application of physical covers and by water sprays. Odors are controlled by limiting the area of open excavations, physical covers, spray foams and by a series of other actions (called operational measures). The project is also required to comply with NYC noise control standards. If you observe problems in these areas, please contact the on-Site Project Manager, Mr. Kevin Waters at (631) 504-6000 or NYC Office of Environmental Remediation Project Manager, Sarah Pong at (212) 442-8342.

Quality Assurance. This cleanup plan requires that evidence be provided to illustrate that all cleanup work required under the plan has been completed properly. This evidence will be summarized in the final report, called the Remedial Action Report. This report will be submitted to the NYC Office of Environmental Remediation and will be thoroughly reviewed.

Storm-Water Management. To limit the potential for soil erosion and discharge, this cleanup plan has provisions for storm-water management. The main elements of the storm water management include physical barriers such as tarp covers and erosion fencing, and a program for frequent inspection.

Hours of Operation. The hours for operation of cleanup will comply with the NYC Department of Buildings construction code requirements or according to specific variances issued by that agency. For this cleanup project, the hours of operation are 7:00AM to 6:00PM Monday through Friday.

Signage. While the cleanup is in progress, a placard will be prominently posted at the main entrance of the property with a laminated project Fact Sheet that states that the project is in the NYC Voluntary Cleanup Program, provides project contact names and numbers, and locations of project documents can be viewed.

Complaint Management. The contractor performing this cleanup is required to address all complaints. If you have any complaints, you can call the facility Project Manager, Ms. Kristen DiScenza (EBC) at (631) 504-6000, the NYC Office of Environmental Remediation Project Manager, Sarah Pong at (212) 442-8342, or call 311 and mention the Site is in the NYC Voluntary Cleanup Program.

Utility Mark-outs. To promote safety during excavation in this cleanup, the contractor is required to first identify all utilities and must perform all excavation and construction work in compliance with NYC Department of Buildings regulations.

Soil and Liquid Disposal. All soil and liquid material removed from the Site as part of the cleanup will be transported and disposed of in accordance with all applicable City, State and Federal regulations and required permits will be obtained.

Soil Chemical Testing and Screening. All excavations will be supervised by a trained and properly qualified environmental professional. In addition to extensive sampling and chemical testing of soils on the Site, excavated soil will be screened continuously using hand-held instruments, by sight, and by smell to ensure proper material handling and management, and community protection.

Stockpile Management. Soil stockpiles will be kept covered with tarps to prevent dust, odors and erosion. Stockpiles will be frequently inspected. Damaged tarp covers will be promptly replaced. Stockpiles will be protected with silt fences. Hay bales will be used, as needed to protect storm water catch basins and other discharge points.

Trucks and Covers. Loaded trucks leaving the Site will be covered in compliance with applicable laws and regulations to prevent dust and odor. Trucks will be properly recorded in logs and records and placarded in compliance with applicable City, State and Federal laws, including those of the New York State Department of Transportation. If loads contain wet material that can leak, truck liners will be used. All transport of materials will be performed by licensed truckers and in compliance with all laws and regulations.

Imported Material. All fill materials proposed to be brought onto the Site will comply with rules outlined in this cleanup plan and will be inspected and approved by a qualified worker located on-Site. Waste materials will not be brought onto the Site. Trucks entering the Site with imported clean materials will be covered in compliance with applicable laws and regulations.

Equipment Decontamination. All equipment used for cleanup work will be inspected and washed, if needed, before it leaves the Site. Trucks will be cleaned at a truck inspection station on the property before leaving the Site.

Housekeeping. Locations where trucks enter or leave the Site will be inspected every day and cleaned regularly to ensure that they are free of dirt and other materials from the Site.

Truck Routing. Truck routes have been selected to: (a) limit transport through residential areas and past sensitive nearby properties; (b) maximize use of city-mapped truck routes; (c) limit total distance to major highways; (d) promote safety in entry to highways; (e) promote overall safety

in trucking; and (f) minimize off-Site line-ups (queuing) of trucks entering the property. Operators of loaded trucks leaving the Site will be instructed not to stop or idle in the local neighborhood.

Final Report. The results of all cleanup work will be fully documented in a final report (called a Remedial Action Report) that will be available for you to review in the public document repositories located at the Brooklyn Public Library - Dekalb Branch (790 Bushwick Avenue, Brooklyn, NY 11211).

Long-Term Site Management. To provide long-term protection after the cleanup is complete, the property owner will be required to comply with an ongoing Site Management Plan that calls for continued inspection of protective controls, such as Site covers. The Site Management Plan is evaluated and approved by the NYC OER. Requirements that the property owner must comply with are established through a city environmental designation. A certification of continued protectiveness of the cleanup will be required from time to time to show that the approved cleanup is still effective.

REMEDIAL ACTION WORK PLAN

1.0 SITE BACKGROUND

Allan Lebovits PC has applied to enroll in the New York City Voluntary Cleanup Program (NYC VCP) to investigate and remediate a property located at 818 Lexington Avenue in the Stuyvesant Heights section of Brooklyn, New York (the Site). A Remedial Investigation (RI) was performed to compile and evaluate data and information necessary to develop this Remedial Action Work Plan (RAWP) in a manner that will render the Site protective of public health and the environment consistent with the contemplated end use. This RAWP establishes remedial action objectives, provides remedial alternatives analysis that includes consideration of a permanent cleanup, and provides a description of the selected remedial action. The remedial action described in this document provides for the protection of public health and the environment, complies with applicable environmental standards, criteria and guidance and applicable laws and regulations.

1.1 Site Location and Current Usage

The Site is located at 818 Lexington Avenue in the Stuyvesant Heights section of Brooklyn, New York, and is currently identified as Block 1628, Lot 21 on the New York City Tax Map. Figure 1 shows the Site location. Lot 21 is a rectangular shaped lot consisting of 78 feet of street frontage on Lexington Avenue and a depth of approximately 100 feet for a total of approximately 7,800 ft^2. The Site is located on the south side of Lexington Avenue between Patchen Avenue and Ralph Avenue and is bordered by Lexington Avenue to the north, a thin vacant lot to the west (812 Lexington Avenue), the Jacquelyn Hernandez Adult Day Health Center facility to the east (822 Lexington Avenue), and multiple 2 and 3-story walk-ups (793-803 Quincy Street) to the south. A map of the site boundary is shown on Figure 2.

The Site currently is vacant and undeveloped, with the exception of a 2 foot thick concrete slab approximately 50 ft by 68 feet wide located approximately 5’ below sidewalk grade for a foundation that was being constructed in 2012 as part of a new commercial building. The building was not finished and construction was terminated. The remainder of the Site outside of the concrete slab consists of exposed soil. A soil stockpile is located behind the foundation in the

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rear of the lot.

1.2 Proposed Redevelopment Plan

The proposed future use of the Site will consist of a 6-story apartment building with a full cellar. A cellar level parking area will be constructed behind the building which will be accessed by a ramp along the west side of the building. The cellar will be used for water, electric, trash compactor, and bicycle storage rooms, as well as accessory space for the apartments above. The residential lobby will be at ground level, but the first floor will be approximately 5 feet above sidewalk grade.

The top of the existing foundation slab is approximately 5 feet below grade, and the rear and front of the Site will be excavated to approximately 7 feet below sidewalk grade to add additional foundation to meet the same height. Excavation ranging from 1 to 7 feet below sidewalk grade will be performed along the west side of the existing foundation to create a ramp to the rear cellar level parking area. The entire Site will be capped with the concrete ramp and the concrete building foundation. An estimated 200 cubic yards will be excavated to construct the concrete slab around the existing foundation slab.

Layout of the redevelopment plans for the cellar, lobby level and first floor is presented in Figure 3. The current zoning designation is R6A with a C2-4 commercial overlay. The proposed use is consistent with existing zoning for the property.

The remedial action contemplated under this RAWP may be implemented independently of the proposed redevelopment plan.

1.3 Description of Surrounding Property

The area immediately surrounding Site consists of multi-family walk-ups to the south and west, industrial/manufacturing buildings to the north and east. Figure 4 shows the surrounding land usage of the adjacent properties listed below as well as additional properties located up to 500 feet away from the Site. The Jacquelyn Hernandez Adult Day Health Center facility is located adjacent to the east of the Site at 822 Lexington Avenue. No other hospitals, schools or daycare

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facilities are located within a 250 ft radius of the Site.

Surrounding Property Usage

Direction	Property Description
North – Opposite side of Lexington Avenue	Block 1623, Lot 70 - 853 Lexington Avenue A 7,358 ft^2 lot developed with a vacant 2-story industrial/manufacturing building. The Site is currently enrolled in the NYSDEC Brownfield Cleanup Program, and will be redeveloped with a new six-story residential apartment building. Block 1623, Lot 67 - 857 Lexington Avenue A 5,058 ft^2 lot developed with a vacant 2-story industrial/manufacturing building. Block 1623, Lot 63 - 869 Lexington Avenue A 14,000 ft^2 lot developed with a 1 and 2-story building occupied by the Christ Apostolic Church.
South – Adjacent Property	Block 1628, Lot 74 - 793 Quincy Street A 2,000 ft^2 lot developed with a 3-story multi-family walk-up. Block 1628, Lot 73 - 795 Quincy Street A 2,000 ft^2 lot developed with a 3-story multi-family walk-up. Block 1628, Lot 72 - 797 Quincy Street An 1,800 ft^2 lot developed with a 3-story multi-family walk-up. Block 1628, Lot 71 - 799 Quincy Street An 1,800 ft^2 lot developed with a 3-story multi-family walk-up. Block 1628, Lot 69 - 803 Quincy Street A 3,050 ft^2 lot developed with a 3-story 1&2 family building.
East – Adjacent Property	Block 1628, Lot 24 - 822 Lexington Avenue A 15,000 ft^2 lot developed with a 2-story building occupied by the Jacquelyn Hernandez Adult Day Health Center, Long Term Home Health Care Program.
West – Adjacent Property	Block 194, Lot 23 - 812 Lexington Avenue A 1,800 ft^2 vacant lot capped with concrete, and surrounded by an 8-ft high chain link fence. The lot is likely used for parking.

1.4 Remedial Investigation

A remedial investigation was performed and the results are documented in a companion document called "*Remedial Investigation Report, 818 Lexington Avenue, Brooklyn, NY*", dated July 2014 (RIR).

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Summary of Past Uses of Site and Areas of Concern

Historic Sanborn maps of the Site were reviewed to identify the historic uses of the Site. Digital copies of the Sanborn maps are included in Appendix A.

Prior to 1888, the Site consisted of three separate undeveloped lots. By 1908, the Site was merged into two lots with a one-story wagon house and a small barn constructed on each lot. By 1932, the Site was redeveloped with a one-story garage building and a two-story building utilized as a printing operation. The 1951 through 1978 Sanborn maps show the two buildings as being part of Sunshine Quaker Laundry Service, Inc. The former garage building on the eastern side of the Site is labeled as the washing and shipping rooms while the former printing building on the western side of the Site is labeled as laundry supplies on the first floor, and offices on the second floor. All Sanborn maps after 1978 show both 814-816, and 818 Lexington Avenue as vacant and undeveloped.

The AOCs identified for this Site include:

1. the presence of historic fill material to depths as great as 6 feet, and
2. the former use of the Site and adjacent properties as a laundry facility.

Summary of the Work Performed under the Remedial Investigation

EBC performed the following scope of work in May of 2014:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed five soil borings across the Site, and collected 13 soil samples and one duplicate soil sample for chemical analysis from the soil borings to evaluate soil quality;
3. Installed 3 groundwater monitoring wells throughout the Site to establish groundwater flow and collected 3 groundwater samples and one duplicate groundwater sample for chemical analysis to evaluate groundwater quality; and
4. Installed four soil gas implants and collected four soil gas samples for chemical analysis.

Summary of Environmental Findings

1. The elevation of the Site is approximately 54 feet.

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2. Depth to groundwater is estimated to be approximately 46 feet below sidewalk grade.
3. Groundwater flow is generally northwest.
4. Depth to bedrock is at the Site is greater than 100 feet.
5. The stratigraphy of the Site surrounding the existing foundation slab from the surface down consists of 4 to 6 feet of historic fill, underlain by native brown silty sand.
6. Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives and Restricted Residential Soil Cleanup Objectives as presented in 6NYCRR Part 375-6.8 and CP51. Soil/fill samples detected no PCBs in any of the soil samples. Trace concentrations of the VOCs acetone, 1,2,4-trimethylbenzene, naphthalene, and methylene chloride were noted but none above Unrestricted Use SCOs. Six SVOCs consisting of the polycyclic aromatic hydrocarbons (PAHs), benz(a)anthracene (max. of 28,000 µg/kg), benzo(a)pyrene (max. of 23,000 µg/kg), benzo(b)fluoranthene (max. of 30,000 µg/kg), benzo(k)fluoranthene (max. of 10,000 µg/kg), chrysene (max. of 26,000 µg/kg), and indeno(1,2,3-cd)pyrene (max. of 9,000 µg/kg), were found within all shallow samples exceeding Restricted Residential Use SCOs. The pesticides 4,4'-DDE (max. of 22 µg/kg), 4,4'-DDT (max. of 180 µg/kg) and dieldrin (max. of 170 µg/kg) were found in all shallow samples exceeding Unrestricted Use SCOs. Several metals including chromium (max. of 109 mg/kg), copper (max. of 290 mg/kg), lead (max. of 891 mg/kg), mercury (max. of 0.89 mg/kg), nickel (max. of 169 mg/kg) and zinc (max. of 331 mg/kg) exceeded Unrestricted Use SCOs. Of these metals, lead, copper, and mercury also exceeded Restricted Residential Use SCOs. Overall, the soil results were consistent with data identified at sites with historic fill material in NYC.
7. Groundwater samples results were compared to New York State 6NYCRR Part 703.5 Class GA groundwater quality standards (GQS). Groundwater samples showed no SVOCs, PCBs or pesticides at detectable concentrations in any sample. Four VOCs including cis-1,2-dichloroethene (max. of 22 µg/L), methyl t-butyl ether (max. of 29 µg/L), tetrachloroethene (max. of 7 µg/L), and trichloroethene (max. of 6.8 µg/L) exceeded their respective GQS. Two metals, manganese (max. of 21.8 mg/L) and sodium (max. of 87.4 mg/L) (dissolved) exceeded their respective GQS in all three samples. Based on the Site history, the lack of chlorinated VOCs in on-Site soil, and the known

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source of contamination coming from the NYS Brownfield Cleanup Program Site across Lexington Avenue, an on-Site source of groundwater contamination is not suspected.

8. Soil vapor results collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Total concentrations of petroleum-related VOCs (BTEX) ranged from 13.18 µg/m^3 to 71.52 µg/m^3. Chlorinated VOCs including 1,1,1-trichloroethane (TCA) detected at 1.14 µg/m^3, carbon tetrachloride detected between 0.503 µg/m^3 and 1.07 µg/m^3, and tetrachloroethene (PCE) detected between 1.36 and 38.1 µg/m^3 were all at concentrations below guidance matrix established by NYSDOH. However, trichloroethene (TCE) was detected within the monitoring/mitigation range at 32.3 µg/m^3. Other compounds including acetone (6,150 µg/m^3) and propylene (2,220 µg/m^3) were also detected at high concentrations.

For more detailed results, consult the RIR. Based on an evaluation of the data and information from the RIR and this RAWP, disposal of significant amounts of hazardous waste is not suspected at this Site.

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2.0 REMEDIAL ACTION OBJECTIVES

Based on the results of the RI, the following Remedial Action Objectives (RAOs) have been identified for this Site:

Soil

- Prevent direct contact with contaminated soil.
- Prevent migration of contaminants that would result in groundwater contamination.

Soil Vapor

- Prevent exposure to contaminants in soil vapor.
- Prevent migration of soil vapor into dwelling and other occupied structures.

Groundwater

- Prevent direct exposure to contaminated groundwater.
- Prevent exposure to contaminants volatilizing from contaminated groundwater.

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3.0 REMEDIAL ALTERNATIVES ANALYSIS

The goal of the remedy selection process under is to select a remedy that is protective of human health and the environment taking into consideration the current, intended and reasonably anticipated future use of the property. The remedy selection process begins by establishing RAOs for media in which chemical constituents were found in exceedance of applicable standards, criteria and guidance values (SCGs). A remedy is then developed based on the following ten criteria:

- Protection of human health and the environment;
- Compliance with SCGs;
- Short-term effectiveness and impacts;
- Long-term effectiveness and permanence;
- Reduction of toxicity, mobility, or volume of contaminated material;
- Implementability;
- Cost effectiveness;
- Community Acceptance;
- Land use; and
- Sustainability.

The following is a detailed description of the alternative analysis and remedy selection to address impacted media at the Site. As required, a minimum of two remedial alternatives (including a Track 1 Unrestricted Use scenario) are evaluated, as follows:

Alternative 1 involves:

- Establishment of Unrestricted Use (Track 1) Soil Cleanup Objectives (SCOs);
- Removal of all soil/fill exceeding Track 1 Unrestricted Use SCOs throughout the Site and confirmation that Track 1 Unrestricted Use SCOs have been achieved with post-excavation endpoint sampling. This remedial alternative would likely require removal of the existing foundation and soil below the foundation to ensure complete removal of soil that does not meet Track 1 Unrestricted Use SCO. In addition, the remainder of the Site

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outside of the existing foundation would require excavation to depths as great as 12 feet to removal all soil containing analytes at concentrations above Track 1 Unrestricted Use SCOs;

- No Engineering or Institutional Controls are required for a Track 1 Unrestricted Use cleanup, but a vapor barrier would be installed beneath the basement foundation and behind foundation sidewalls of the new building as a part of development to prevent any potential future exposures from off-Site soil vapor; and
- Placement of a composite cover over the entire Site as part of new development.

Alternative 2 involves:

- Establishment of Site-Specific (Track 4) SCOs;
- Removal of all soil/fill exceeding Track 4 Site-Specific SCOs and confirmation that Track 4 Site-Specific SCOs have been achieved with post-excavation endpoint sampling. Excavation for construction of the new building's cellar level to be constructed behind and along the side of the existing foundation would take place to depths ranging from 1 to 7 feet. If soil/fill containing analytes at concentrations above Track 4 Site-Specific SCOs is still present at the base of the excavation after removal of all soil required for construction of the new building's cellar is complete, additional excavation will be performed to ensure complete removal of soil that does not meet Track 4 Site-Specific SCOs;
- Placement of a final cover over the entire Site to prevent exposure to remaining soil/fill;
- Installation of a soil vapor barrier system beneath the building's cellar slab, and along foundation sidewalls to prevent any potential future exposures from off-Site soil vapor;
- Installation of active Sub-Slab Depressurization system (SSDS) below the cellar's concrete slab to be constructed behind and along side the existing foundation slab;
- Establishment of use restrictions including prohibitions on the use of groundwater from the Site; prohibitions of sensitive Site uses, such as farming or vegetable gardening, to prevent future exposure pathways; and prohibition of a higher level of land use without OER approval;

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- Establishment of an approved Site Management Plan (SMP) to ensure long-term management of these Engineering and Institutional Controls including the performance of periodic inspections and certification that the controls are performing as they were intended; and
- Continued registration as an E-designated property to memorialize the remedial action and the Engineering and Institutional Controls required by the RAWP.

3.1 Threshold Criteria

Protection of Public Health and the Environment

This criterion is an evaluation of the remedy's ability to protect public health and the environment, and an assessment of how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through removal, treatment, and implementation of Engineering Controls or Institutional Controls. Protection of public health and the environment must be achieved for all approved remedial actions.

Alternative 1 would be protective of human health and the environment by removing contaminated soil/fill exceeding Track 1 Unrestricted Use SCOs and groundwater protection standards, thus eliminating potential for direct contact with contaminated soil/fill once construction is complete and eliminating the risk of contamination leaching into groundwater.

Alternative 2 would achieve comparable protections of human health and the environment by excavating the historic fill at the Site and by ensuring that remaining soil/fill on-Site meets Track 4 Site-Specific SCOs, as well as by placement of Institutional and Engineering Controls, including a composite cover system. The composite cover system would prevent direct contact with any remaining on-Site soil/fill. Implementing Institutional Controls including a Site Management Plan would ensure that the composite cover system remains intact and protective. Establishment of Track 4 Site-Specific SCOs would minimize the risk of contamination leaching into groundwater.

For both Alternatives, potential exposure to contaminated soils during construction would be minimized by implementing a Construction Health and Safety Plan (CHASP), an approved

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Soil/Materials Management Plan and Community Air Monitoring Plan (CAMP). Potential contact with contaminated groundwater would be prevented as its use is prohibited by city laws and regulations. Potential future migration of off-Site soil vapors into the new building would be prevented by installing a active sub-slab depressurization system and vapor barrier below the new concrete cellar slab to be constructed behind and along side the existing 2ft thick slab and continuing the vapor barrier around all foundation walls.

3.2. Balancing Criteria

Compliance with Standards, Criteria and Guidance (SCGs)

This evaluation criterion assesses the ability of the alternative to achieve applicable standards, criteria and guidance.

Alternative 1 would achieve compliance with the remedial goals, chemical-specific SCGs and RAOs for soil through removal of soil to achieve Track 1 Unrestricted Use SCOs and Groundwater Protection Standards. Compliance with SCGs for soil vapor would also be achieved by installing a sub-slab depressurization system and vapor barrier below the concrete cellar slab to be constructed behind and along side the existing 2ft thick slab and continuing the vapor barrier around all foundation walls, as part of development.

Alternative 2 would achieve compliance with the remedial goals, chemical-specific SCGs and RAOs for soil through removal of soil to meet Track 4 Site-Specific SCOs. Compliance with SCGs for soil vapor would also be achieved by installing a sub-slab depressurization system and vapor barrier below the concrete cellar slab to be constructed behind and along side the existing 2ft thick slab and continuing the vapor barrier around all foundation walls. A Site Management Plan would ensure that these controls remained protective for the long term.

Health and safety measures contained in the CHASP and Community Air Monitoring Plan (CAMP) that comply with the applicable SCGs shall be implemented during Site redevelopment under this RAWP. For both Alternatives, focused attention on means and methods employed during the remedial action would ensure that handling and management of contaminated material would be in compliance with applicable SCGs. These measures would protect on-Site workers

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and the surrounding community from exposure to Site-related contaminants.

Short-term effectiveness and impacts

This evaluation criterion assesses the effects of the alternative during the construction and implementation phase until remedial action objectives are met. Under this criterion, alternatives are evaluated with respect to their effects on public health and the environment during implementation of the remedial action, including protection of the community, environmental impacts, time until remedial response objectives are achieved, and protection of workers during remedial actions.

Both Alternatives 1 and 2 have similar short-term effectiveness during their respective implementations, as each requires excavation of historic fill material. Both alternatives would result in short-term dust generation impacts associated with excavation, handling, load out of materials, and truck traffic. Short term impacts would be higher for Alternative 1 because the alternative requires removal of the existing foundation slab and soil below the existing foundation slab. However, focused attention to means and methods during the remedial action, including community air monitoring and appropriate truck routing, would minimize or negate the overall impact of these activities.

An additional short-term adverse impact and risks to the community associated with both remedial alternatives is increased truck traffic. Approximately 20, 25-ton capacity truck trips would be necessary to transport fill and soil excavated during Site development. Truck traffic will be routed on the most direct course using major thoroughfares where possible and flaggers will be used to protect pedestrians at Site entrances and exits.

The effects of these potential adverse impacts to the community, workers and the environment will be minimized through implementation of corresponding control plans including a Construction Health and Safety Plan, a Community Air Monitoring Plan (CAMP) and a Soil/Materials Management Plan (SMMP), during all on-Site soil disturbance activities and would minimize the release of contaminants into the environment. Both alternatives provide short term effectiveness in protecting the surrounding community by decreasing the risk of

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contact with on-Site contaminants. Construction workers operating under appropriate management procedures and a Construction Health and Safety Plan (CHASP) would be protected from on-Site contaminants (personal protective equipment would be worn consistent with the documented risks within the respective work zones).

Long-term effectiveness and permanence

This evaluation criterion addresses the results of a remedial action in terms of its permanence and quantity/nature of waste or residual contamination remaining at the Site after response objectives have been met, such as permanence of the remedial alternative, magnitude of remaining contamination, adequacy of controls including the adequacy and suitability of ECs/ICs that may be used to manage contaminant residuals that remain at the Site and assessment of containment systems and ICs that are designed to eliminate exposures to contaminants, and long-term reliability of Engineering Controls.

Alternative 1 would achieve long-term effectiveness and permanence related to on-Site contamination by permanently removing all impacted soil/fill and enabling unrestricted usage of the property.

Alternative 2 would provide long-term effectiveness by removing most on-Site contamination and attaining Track 4 Site-Specific SCOs; establishing Engineering Controls including a composite cover system across the Site; establishing Institutional Controls to ensure long-term management including use restrictions, a Site Management Plan and maintaining continued registration as an E-designation property to memorialize these controls for the long term. The SMP would ensure long-term effectiveness of all ECs and ICs by requiring periodic inspection and certification that these controls and restrictions continue to be in place and are functioning as they were intended assuring that protections designed into the remedy will provide a continued high level of protection in perpetuity.

Both alternatives would result in removal of soil contamination exceeding the SCOs providing the highest level, most effective and permanent remedy over the long-term with respect to a remedy for contaminated soil, which would eliminate any migration to groundwater. Potential

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sources of soil vapor and groundwater contamination would also be eliminated as part of the remedy.

Reduction of toxicity, mobility, or volume of contaminated material

This evaluation criterion assesses the remedial alternative's use of remedial technologies that permanently and significantly reduce toxicity, mobility, or volume of contaminants as their principal element. The following is the hierarchy of source removal and control measures that are to be used to remediate a Site, ranked from most preferable to least preferable: removal and/or treatment, containment, elimination of exposure and treatment of source at the point of exposure. It is preferred to use treatment or removal to eliminate contaminants at a Site, reduce the total mass of toxic contaminants, cause irreversible reduction in contaminants mobility, or reduce of total volume of contaminated media.

Alternative 1 would permanently eliminate the toxicity, mobility, and volume of contaminants from on-Site soil by removing all soil in excess of Track 1 Unrestricted Use SCOs.

Alternative 2 would remove most of the historic fill at the Site thus would permanently eliminate the toxicity, mobility, and volume of contaminants, and any remaining on-Site soil beneath the new building would meet Track 4 Site-Specific SCOs. Alternative 1 would eliminate a greater total mass of contaminants on-Site if historic fill is encountered analytes at concentrations above Unrestricted Use SCOs is present below the existing foundation slab.

Implementability

This evaluation criterion addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation, including technical feasibility of construction and operation, reliability of the selected technology, ease of undertaking remedial action, monitoring considerations, administrative feasibility (e.g. obtaining permits for remedial activities), and availability of services and materials.

The proposed remedial action is both feasible and implementable. The techniques, materials and equipment to implement Alternatives 1 and 2 are readily available and have been proven

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effective in remediating the contaminants associated with the Site. They use standard materials and services that are well established technology. The reliability of each remedy is also high. However, removal of the existing foundation would be considered a special difficulty due to the concrete thickness and need to rebuild the foundation later for the proposed building.

Cost effectiveness

This evaluation criterion addresses the cost of alternatives, including capital costs (such as construction costs, equipment costs, and disposal costs, engineering expenses) and site management costs (costs incurred after remedial construction is complete) necessary to ensure the continued effectiveness of a remedial action.

The costs associated with Alternative 1 would be higher, as it requires removal and disposal of the existing building foundation, and removal and disposal of historic fill encountered below the existing foundation slab. The additional costs would also include import of clean fill to backfill the over-excavated areas and re-pour the foundation. However, long-term costs for Alternative 2 may be higher than Alternative 1 based on implementation of a Site Management Plan as part of Alternative 2.

The remedial plan creates an approach that combines the remedial action with the redevelopment of the Site, including the construction of the building foundation and subgrade structures. The remedial plan is also cost effective in that it will take into consideration the selection of the closest and most appropriate disposal facilities to reduce transportation and disposal costs during the excavation of historic fill and other soils during the redevelopment of the Site.

Community Acceptance

This evaluation criterion addresses community opinion and support for the remedial action. Observations here will be supplemented by public comment received on the RAWP.

Based on the overall goals of the remedial program and initial permitting associated with the proposed site development, no adverse community opinion is anticipated for either alternative. This RAWP will be subject to a public review under the NYC VCP and will provide the opportunity for detailed public input on the remedial alternatives and the selected remedy. This

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public comment will be considered by OER prior to approval of this plan. The Citizen Participation Plan for the project is provided in Attachment B.

Land use

This evaluation criterion addresses the proposed use of the property. This evaluation has considered reasonably anticipated future uses of the Site and takes into account: current use and historical and/or recent development patterns; applicable zoning laws and maps; NYS Department of State's Brownfield Opportunity Areas (BOA) pursuant to section 970-r of the general municipal law; applicable land use plans; proximity to real property currently used for residential use, and to commercial, industrial, agricultural, and/or recreational areas; environmental justice impacts, Federal or State land use designations; population growth patterns and projections; accessibility to existing infrastructure; proximity of the site to important cultural resources and natural resources, potential vulnerability of groundwater to contamination that might emanate from the site, proximity to flood plains, geography and geology; and current Institutional Controls applicable to the Site.

The proposed redevelopment of the Site is compatible with its current zoning and is consistent with recent development patterns. Following remediation, the Site will meet either Track 1 Unrestricted Use or Track 4 Site-Specific SCOs, both of which are appropriate for its planned residential and commercial use. Improvements in the current environmental condition of the property achieved by both alternatives are also consistent with the City's goals for cleanup of contaminated land and bringing such properties into productive reuse. Both alternatives are equally protective of natural resources and cultural resources.

Sustainability of the Remedial Action

This criterion evaluates the overall sustainability of the remedial action alternatives and the degree to which sustainable means are employed to implement the remedial action including those that take into consideration NYC's sustainability goals defined in *PlaNYC: A Greener, Greater New York*. Sustainability goals may include: maximizing the recycling and reuse of non-virgin materials; reducing the consumption of virgin and non-renewable resources; minimizing energy consumption and greenhouse gas emissions; improving energy efficiency; and promotion

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of the use of native vegetation and enhancing biodiversity during landscaping associated with Site development.

The remedial plan would take into consideration the shortest trucking routes during off-Site disposal of historic fill and other soils, which would reduce greenhouse gas emissions and conserve energy used to fuel trucks. New York City Clean Soil Bank program may be utilized for reuse of native soils. To the extent practicable, energy efficient building materials, appliances, and equipment will be utilized to complete the development. While Alternative 2 would potentially result in lower energy usage based on reducing the volume of material transported off-Site, both remedial alternatives are comparable with respect to the opportunity to achieve sustainable remedial action. A complete list of green remedial activities considered as part of the NYC VCP is included in the Sustainability Statement, included as Appendix C.

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4.0 REMEDIAL ACTION

4.1 Summary of Preferred Remedial Action

The preferred remedial action alternative is the Track 4 Alternative. The preferred remedial action alternative achieves protection of public health and the environment for the intended use of the property. The preferred remedial action alternative will achieve all of the remedial action objectives established for the project and addresses applicable SCGs. The preferred remedial action alternative is effective in both the short-term and long-term and reduces mobility, toxicity and volume of contaminants. The preferred remedial action alternative is cost effective and implementable and uses standards methods that are well established in the industry.

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Establishment of Site-Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Installation and sampling of one groundwater well prior to start construction.
6. Excavation and removal of soil/fill exceeding Track 4 Site-Specific SCOs. For development purposes, the area of the Site outside of the footprint of the existing foundation will be excavated to depths of 1 to 7 feet for the new building's cellar level. Approximately 750 tons of soil will be removed.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
8. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.

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9. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
10. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
11. Installation of an active Sub-Slab Depressurization System (SSDS) below the concrete slab to be constructed behind and along the side of the existing foundation slab.
12. Installation of a vapor barrier system below the concrete slab of the building to be constructed behind and along side the existing concrete foundation slab as well as behind foundation walls of the proposed building. The vapor barrier will consist of Raven Industries' VaporBlock 20 Plus, which is a seven layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins;
13. Construction and maintenance of an engineered composite cover consisting of the existing 24 inch thick concrete foundation slab, 24 inch thick concrete foundation slab to be constructed behind and along side the existing foundation slab, and the 6 inch thick concrete vehicle ramp to be constructed along the side of the building to prevent human exposure to residual soil/fill remaining under the Site;
14. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
15. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and regulations;
16. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.
17. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
18. The property will continue to be registered with an E-Designation by the NYC Buildings

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Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

4.2 Soil Cleanup Objectives and Soil/Fill Management

Track 4 Soil Cleanup Objectives (SCOs) are proposed for this project. The following Track 4 Site-Specific SCOs will be used:

Contaminant	Track 4 SCOs
Total SVOCs	250 ppm
Lead	800 ppm
Mercury	1.5 ppm

Soil and materials management on-Site and off-Site, including excavation, handling and disposal, will be conducted in accordance with the Soil/Materials Management Plan in Attachment D. The location of planned excavations is shown in Figure 5.

No over-excavation beyond the development cut is anticipated. If any hot-spot areas are identified during development and remediation at the Site, they will be removed to the extent practical.

Discrete contaminant sources (such as hotspots) identified during the remedial action will be identified by GPR or survey. This information will be provided in the Remedial Action Report.

Estimated Soil/Fill Removal Quantities

The total quantity of soil/fill expected to be excavated and disposed off-Site is 750 tons.
Disposal location(s) will be reported promptly to the OER Project Manager prior to the start of the remedial action.

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End-Point Sampling

Removal actions under this plan will be performed in conjunction with remedial end-point sampling. Confirmation end-point sampling and testing will be performed following materials removal and completed proper to Site development activities. To evaluate attainment of Track 4 Site-Specific SCOs, three confirmation end-point samples will be collected and analyzed for the trigger compounds and elements established on the Track 4 Site-Specific SCOs list. The approximate collection location of the confirmation end-point soil samples is shown on Figure 6.

In addition, if hotspots are encountered, hotspot removal end-point sampling frequency will consist of the following:

1. For excavations less than 20 feet in total perimeter, at least one bottom sample and one sidewall sample biased in the direction of surface runoff.
2. For excavations 20 to 300 feet in perimeter:
    - For surface removals, one sample from the top of each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
    - For subsurface removals, one sample from each sidewall for every 30 linear feet of sidewall and one sample from the excavation bottom for every 900 square feet of bottom area.
3. For sampling of volatile organics, bottom samples should be taken within 24 hours of excavation, and should be taken from the zero to six-inch interval at the excavation floor. Samples taken after 24 hours should be taken at six to twelve inches.
4. For contaminated soil removal, post remediation soil samples for laboratory analysis should be taken immediately after contaminated soil removal. If the excavation is enlarged horizontally, additional soil samples will be taken pursuant to bullets 1-3 above.

Post-remediation sample locations and depth will be biased towards the areas and depths of highest contamination identified during previous sampling episodes unless field indicators such as field instrument measurements or visual contamination identified during the remedial action indicate that other locations and depths may be more heavily contaminated. In all cases, post-

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remediation samples should be biased toward locations and depths of the highest expected contamination.

New York State ELAP certified labs will be used for all end-point sample analyses. Labs for end-point sample analyses will be reported in the RAR. The RAR will provide a tabular and map summary of all end-point sample results and will include all data including non-detects and applicable standards and/or guidance values. End-point samples will be analyzed for trigger analytes (those for which SCO exceedence is identified) utilizing the following methodology:

Soil analytical methods will include:

- Volatile organic compounds by EPA Method 8260;
- Semi-volatile organic compounds by EPA Method 8270;
- Target Analyte List metals; and
- Pesticides/PCBs by EPA Method 8081/8082.

If either LNAPL and/or DNAPL are detected, appropriate samples will be collected for characterization and required regulatory reporting (i.e. spills hotline) will be performed.

Quality Assurance/Quality Control

The fundamental QA objective with respect to accuracy, precision, and sensitivity of analysis for laboratory analytical data is to achieve the QC acceptance of the analytical protocol. The accuracy, precision and completeness requirements will be addressed by the laboratory for all data generated.

One duplicate sample for every 20 samples collected will be submitted to the approved laboratory for analysis of the same parameters. One trip blank will be submitted to the laboratory with each shipment of soil samples.

Collected samples will be appropriately packaged, placed in coolers and shipped via overnight courier or delivered directly to the analytical laboratory by field personnel. Samples will be containerized in appropriate laboratory provided glassware and shipped in plastic coolers.

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Samples will be preserved through the use of ice or "cold-paks" to maintain a temperature of 4^{o}C.

Dedicated disposable sampling materials will be used for the collection endpoint samples, eliminating the need to prepare field equipment (rinsate) blanks. However, if non-disposable equipment is used, (stainless steel scoop, etc.) field rinsate blanks will be prepared at the rate of 1 for every eight samples collected. Decontamination of non-dedicated sampling equipment will consist of the following:

- Gently tap or scrape to remove adhered soil
- Rinse with tap water
- Wash with alconox® detergent solution and scrub
- Rinse with tap water
- Rinse with distilled or deionized water

Prepare field blanks by pouring distilled or deionized water over decontaminated equipment and collecting the water in laboratory provided containers. Trip blanks will be used whenever samples are transported to the laboratory for analysis of VOCs. Trip blanks will not be used for samples to be analyzed for metals, SVOCs or pesticides. One blind duplicate sample will be prepared and submitted for analysis every 20 samples.

Import and Reuse of Soils

Import of soils onto the property and reuse of soils already on-Site will be performed in conformance with the Soil/Materials Management Plan in Attachment D. The estimated quantity of soil to be imported into the Site for backfill and cover soil is 0 tons. The estimated quantity of onsite soil/fill expected to be reused/relocated on Site is 0 tons.

4.3 Engineering Controls

The excavation required for the proposed Site development will achieve Track 4 Site Specific SCOs. Engineering Controls were employed in the remedial action to address residual contamination remaining at the site. The Site has two primary Engineering Control Systems: composite cover system and vapor barrier system.

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Composite Cover System

Exposure to residual soil/fill will be prevented by an engineered, composite cover system to be built on the Site. This composite cover system is comprised of the existing 24 inch thick concrete foundation slab, 24 inch thick concrete foundation slab to be constructed behind and along side the existing foundation slab, and the 6 inch thick concrete vehicle ramp to be constructed along the side of the building. There will be no landscaped areas.

The composite cover system is a permanent engineering control for the Site. The system will be inspected and reported at specified intervals as required by this RAWP and the SMP. A Soil Management Plan will be included in the Site Management Plan and will outline the procedures to be followed in the event that the composite cover system and underlying residual soil/fill is disturbed after the remedial action is complete. Maintenance of this composite cover system will be described in the Site Management Plan in the RAR. Figure 5 shows the location of the composite cover system.

Vapor Barrier

Migration of potential soil vapor from onsite or offsite will be mitigated with a combination of building slab and vapor barrier. The vapor barrier will consist of Raven Industries' VaporBlock 20 Plus, which is a seven layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins. The vapor barrier will be installed prior to pouring the building's concrete slab behind and along side the existing foundation slab. The vapor barrier will up the foundation sidewalls in accordance with manufacturer specifications. The specifications for installation will be provided to the construction management company and the foundation contractor or installer of the liner. The specifications state that all vapor barrier seam, penetrations, and repairs will be sealed either by the tape method or weld method, according to the manufacturer's recommendations and instructions.

The project's Professional Engineer licensed by the State of New York will have primary direct responsibility for overseeing the implementation of the vapor barrier. The extent of the proposed vapor barrier membrane is provided in Figure 7. Product specification sheets are provided in Attachment F.

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The Remedial Action Report will include photographs (maximum of two photos per page) of the installation process, PE/RA certified letter (on company letterhead) from primary contractor responsible for installation oversight and field inspections, and a copy of the manufacturers certificate of warranty.

Active Sub-Slab Depressurization System

An active sub-slab depressurization system consisting of two zones will be installed behind and along side the existing foundation to address residual soil vapors.

Migration of soil vapor beneath the building will be mitigated with the construction of an active sub-slab depressurization system. The SSDS will consist of two separate lines installed within porous granular material beneath the basement foundation in the rear of the Site, and beneath the vehicle ramp to be constructed along the west side of the Site. The two SSDS lines will provide the correct coverage in accordance with USEPA sub-slab depressurization design specifications which recommend a separate vent loop for every 4,000 ft^2 of slab area. Each loop will be outfitted with a riser that will extend to the roof of the building and finished with a rain cap. The layout plan for the SSDS system is provided as Figure 8. Details of the SSD system are provided in Figure 9. The active system will be monitored for five years and depending on monitoring results, can be turned to passive SSDS.

Ventilated Garage

As shown on Figure 8, a portion of the cellar level will be a ventilated parking garage. The portion of the cellar utilized as a parking garage will not require an SSDS, as it will prevent vapors from entering the new development. The parking garage will be built and ventilated per requirements of NYC Building Department's codes.

4.4 Institutional Controls

Institutional Controls (IC) have been incorporated in this remedial action to manage residual soil/fill and other media and render the Site protective of public health and the environment. Institutional Controls are listed below. Long-term employment of EC/ICs will be established in a site-specific Site Management Plan (SMP) that will be included in the RAR.

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Institutional Controls for this remedial action are:

- The property will continue to be registered with an E-Designation at the NYC Buildings Department. This RAWP includes a description of all ECs and ICs and summarizes the requirements of the Site Management Plan which will note that the property owner and property owner's successors and assigns must comply with the approved SMP;
- Submittal of a Site Management Plan in the RAR for approval by OER that provides procedures for appropriate operation, maintenance, monitoring, inspection, reporting and certification of ECs. SMP will require that the property owner and property owner's successors and assigns will submit to OER a periodic written statement that certifies that: (1) controls employed at the Site are unchanged from the previous certification or that any changes to the controls were approved by OER; and, (2) nothing has occurred that impairs the ability of the controls to protect public health and environment or that constitute a violation or failure to comply with the SMP. OER retains the right to enter the Site in order to evaluate the continued maintenance of any controls. This certification shall be submitted annually and will comply with RCNY §43-1407(l)(3).
- Vegetable gardens and farming on the Site are prohibited;
- Use of groundwater underlying the Site is prohibited without treatment rendering it safe for its intended use;
- All future activities on the Site that will disturb residual material must be conducted pursuant to the soil management provisions in an approved SMP;
- The Site will be used for residential use and will not be used for a higher level of use without prior approval by OER.

4.5 Site Management Plan

Site Management is the last phase of remediation and begins with the approval of the Remedial Action Report and issuance of the Notice of Completion (NOC) for the Remedial Action. The Site Management Plan (SMP) describes appropriate methods and procedures to ensure implementation of all ECs and ICs that are required by this RAWP. The Site Management Plan is submitted as part of the RAR but will be written in a manner that allows its use as an independent document. Site Management continues until terminated in writing by OER. The

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property owner is responsible to ensure that all Site Management responsibilities defined in this RAWP and the Site Management Plan are implemented.

The SMP will provide a detailed description of the procedures required to manage residual soil/fill left in place following completion of the remedial action in accordance with the Voluntary Cleanup Agreement with OER. This includes a plan for: (1) implementation of EC's and ICs; (2) implementation of monitoring programs; (3) operation and maintenance of EC's; (4) inspection and certification of EC's; and (5) reporting.

Site management activities, reporting, and EC/IC certification will be scheduled on an periodic basis to be established in the SMP and will be subject to review and modification by OER. The Site Management Plan will be based on a calendar year and certification reports will be due for submission to OER by July 30 of the year following the reporting period.

4.6 Qualitative Human Health Exposure Assessment

Investigations reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA).

The objective of the qualitative exposure assessment is to identify potential receptors to the contaminants of concern (COC) that are present at, or migrating from, the Site. The identification of exposure pathways describes the route that the COC takes to travel from the source to the receptor. An identified pathway indicates that the potential for exposure exists; it does not imply that exposures actually occur.

Investigations reported in the Remedial Investigation Report (RIR) are sufficient to complete a Qualitative Human Health Exposure Assessment (QHHEA). As part of the VCP process, a QHHEA was performed to determine whether the Site poses an existing or future health hazard to the Site's exposed or potentially exposed population. The sampling data from the RI were evaluated to determine whether there is any health risk by characterizing the exposure setting, identifying exposure pathways, and evaluating contaminant fate and transport. This EA was prepared in accordance with Appendix 3B and Section 3.3 (b) 8 of the NYSDEC Draft DER-10 Technical Guidance for Site Investigation and Remediation.

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Known and Potential Sources

Based on the results of the Remedial Investigation Report the contaminants of concern found are:

Soil

- Metals, including copper, lead, and mercury exceeding Restricted Residential Use SCOs;
- SVOCs (PAH compounds) including benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene exceeding Restricted Residential Use SCOs; and
- Pesticides, including 4,4'-DDE, 4,4'-DDT, and dieldrin were identified but did not exceed Restricted Residential SCOs.

Groundwater

- Several metals were identified but only manganese and sodium exceeded Groundwater Quality Standards;
- Chlorinated VOCs including cis-1,2-dichloroethene, methyl ethyl ether (MTBE), tert-butyl benzene, and trichloroethene exceeding Groundwater Quality Standards;

Soil Vapor

- The chlorinated VOC, TCE was detected above NYSDOH mitigation thresholds;
- Petroleum VOCs detected at low concentrations including benzene, ethylbenzene, xylenes and toluene.

Nature, Extent, Fate and Transport of Contaminants

SVOCs, metals, and pesticides are present in the historic fill materials to depths as great as 7 feet below grade. Two metals (chromium and nickel) detected in two of the deep soil samples (10 to 12 feet below grade) at elevated concentrations. No metals or pesticides detected in soil were reported at a concentration within the groundwater samples that would indicate that contamination is mobilizing into groundwater or migrating off-Site. The chlorinated compound trichloroethene was detected at an elevated concentration within one of the four soil gas samples, and at relatively low concentrations within each of the three groundwater samples collected at the Site, but was not detected within any of the on-Site soil samples. The trichloroethene

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detected in soil gas and groundwater may be attributed to the NYSDEC Brownfield Cleanup Program Site located on the opposite side of Lexington Avenue.

Potential Routes of Exposure

The five elements of an exposure pathway are: (1) a contaminant source; (2) contaminant release and transport mechanisms; (3) a point of exposure; (4) a route of exposure; and (5) a receptor population. An exposure pathways is considered complete when all five elements of an exposure pathway are documented. A potential exposure pathway exists when any one or more of the five elements comprising an exposure pathway cannot be documented. An exposure pathway may be eliminated from further evaluation when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future. Three potential primary routes exist by which chemicals can enter the body:

- Ingestion of fill/soil;
- Inhalation of vapors and particulates; and
- Dermal contact with water, fill, soil, or building materials.

Potential Points of Exposure

Current Conditions: A portion of the Site is currently capped with a 2 ft thick concrete foundation slab, but the remainder of the Site consists of exposed soil. The Site is served by public water supply and groundwater use for potable supply is prohibited, groundwater is not used at the Site and there is no potential for exposure. There is no building currently constructed on the Site, therefore there is no potential for soil vapor to intrude into an on-Site building.

Construction/Remediation Activities: Once redevelopment activities begin, construction workers will come into direct contact with surface and subsurface soils, as a result of on-Site construction and excavation activities. On-Site construction workers potentially could ingest, inhale, or have dermal contact with any exposed impacted soil, and fill. Similarly, off-Site receptors could be exposed to dust and vapors from on-Site activities. During construction, on-Site and off-Site exposures to contaminated dust from on-Site will be addressed through the Soil/Materials Management Plan, dust controls, and through the implementation of the Community Air-Monitoring Program and a Construction Health and Safety Plan.

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Proposed Future Conditions: Under future remediated conditions, all soils in excess of Track 4 Site-Specific SCOs will be removed. The Site will be fully capped, limiting potential direct exposure to soil and groundwater remaining in place, and a vapor barrier system and passive SSDS will prevent exposure to potential off-Site soil vapors. The Site is served by a public water supply, and groundwater is not used at the Site for potable supply. There are no plausible off-Site pathways for ingestion, inhalation, or dermal exposure to contaminants derived from the Site under future conditions.

Receptor Populations

On-Site Receptors - The Site is currently a vacant lot surrounded with a construction fence which limits access to the Site to Site owner/representatives and tresspassers. During redevelopment of the Site, the on-Site potential receptors will include construction workers, site representatives, and visitors. Once the Site is redeveloped, the on-Site potential sensitive receptors will include adult and child building residents and visitors.

Off-Site Receptors - Potential off-Site receptors within a 0.25-mile radius of the Site include: adult and child residents, and commercial and construction workers, pedestrians, trespassers, and cyclists, based on the following:

1. Commercial Businesses (up to 0.25 mile) - existing and future
2. Residential Buildings (up to 0.25 mile) - existing and future
3. Building Construction/Renovation (up to 0.25 mile) - existing and future
4. pedestrians, Trespassers, Cyclists (up to 0.25 mile) - existing and future
5. Schools (up to 0.25 mile) - existing and future

Overall Human Health Exposure Assessment

Under current conditions, on-Site exposure pathways exist for site personnel. During remedial construction, on-Site and off-Site exposures to contaminated dust from historic fill material will be addressed through dust controls, and through the implementation of the Community Air Monitoring Program, the Soil/Materials Management Plan, and a Construction Health and Safety Plan. After the remedial action is complete, there will be no remaining exposure pathways to on-Site soil/fill, as all soil above Site-Specific SCOs will have been removed and a SSDS and vapor

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barrier system will have been installed as part of development. The SSDS and vapor barrier system will prevent potential vapor intrusion. The composite cover system and use restrictions will prevent contact with residual soil or groundwater and continued protection after the remedial action will be achieved by the implementation of site management including periodic inspection and certification of the performance of remedial controls. Potential post-construction use of groundwater is not considered an option because groundwater in this area of New York City is not used as a potable water source. There are no surface waters in close proximity to the Site that could be impacted or threatened.

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5.0 REMEDIAL ACTION MANAGEMENT

5.1 Project Organization and Oversight

Principal personnel who will participate in the remedial action include Kristen DiScenza, Project Manager-EBC and Kevin Waters, Field Operations Officer-EBC. The Professional Engineer (PE) and Qualified Environmental Professionals (QEP) for this project are Ariel Czemerinski P.E., AMC Engineering and Charles Sosik P.G. EBC.

5.2 Site Security

Site access will be controlled by a chain link or wooden construction fence, which will surround the property.

5.3 Work Hours

The hours for operation of remedial construction will be from 7:00AM to 6:00PM. These hours conform to the New York City Department of Buildings construction code requirements.

5.4 Construction Health and Safety Plan

The Health and Safety Plan is included in Appendix E. The Site Safety Coordinator will be Kevin Waters - EBC. Remedial work performed under this RAWP will be in full compliance with applicable health and safety laws and regulations, including Site and OSHA worker safety requirements and HAZWOPER requirements. Confined space entry, if any, will comply with OSHA requirements and industry standards and will address potential risks. The parties performing the remedial construction work will ensure that performance of work is in compliance with the HASP and applicable laws and regulations. The HASP pertains to remedial and invasive work performed at the Site until the issuance of the Notice of Completion.

All field personnel involved in remedial activities will participate in training required under 29 CFR 1910.120, including 40-hour hazardous waste operator training and annual 8-hour refresher training. Site Safety Officer will be responsible for maintaining workers training records.

Personnel entering any exclusion zone will be trained in the provisions of the HASP and be required to sign an HASP acknowledgment. Site-specific training will be provided to field

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personnel. Additional safety training may be added depending on the tasks performed. Emergency telephone numbers will be posted at the site location before any remedial work begins. A safety meeting will be conducted before each shift begins. Topics to be discussed include task hazards and protective measures (physical, chemical, environmental); emergency procedures; PPE levels and other relevant safety topics. Meetings will be documented in a log book or specific form.

An emergency contact sheet with names and phone numbers is included in the HASP. That document will define the specific project contacts for use in case of emergency.

5.5 Community Air Monitoring Plan

Real-time air monitoring for volatile organic compounds (VOCs) and particulate levels at the perimeter of the exclusion zone or work area will be performed. Continuous monitoring will be performed for all ground intrusive activities and during the handling of contaminated or potentially contaminated media. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pit excavation or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be performed during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection, for instance, will consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. Depending upon the proximity of potentially exposed individuals, continuous monitoring may be performed during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence. Exceedances of action levels observed during performance of the Community Air Monitoring Plan (CAMP) will be reported to the OER Project Manager and included in the Daily Report.

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VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis during invasive work. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities will resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and be available for OER personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate

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monitoring will be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work will continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings will be recorded and be available for OER personnel to review.

5.6 Agency Approvals

All permits or government approvals required for remedial construction have been or will be obtained prior to the start of remedial construction. Approval of this RAWP by OER does not constitute satisfaction of these requirements and will not be a substitute for any required permit.

5.7 Site Preparation

Pre-Construction Meeting

OER will be invited to attend the pre-construction meeting at the Site with all parties involved in the remedial process prior to the start of remedial construction activities.

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Mobilization

Mobilization will be conducted as necessary for each phase of work at the Site. Mobilization includes field personnel orientation, equipment mobilization (including securing all sampling equipment needed for the field investigation), marking/staking sampling locations and utility mark-outs. Each field team member will attend an orientation meeting to become familiar with the general operation of the Site, health and safety requirements, and field procedures.

Utility Marker Layouts, Easement Layouts

The presence of utilities and easements on the Site will be fully investigated prior to the performance of invasive work such as excavation or drilling under this plan by using, at a minimum, the One-Call System (811). Underground utilities may pose an electrocution, explosion, or other hazard during excavation or drilling activities. All invasive activities will be performed incompliance with applicable laws and regulations to assure safety. Utility companies and other responsible authorities will be contacted to locate and mark the locations, and a copy of the Markout Ticket will be retained by the contractor prior to the start of drilling, excavation or other invasive subsurface operations. Overhead utilities may also be present within the anticipated work zones. Electrical hazards associated with drilling in the vicinity of overhead utilities will be prevented by maintaining a safe distance between overhead power lines and drill rig masts.

Proper safety and protective measures pertaining to utilities and easements, and compliance with all laws and regulations will be employed during invasive and other work contemplated under this RAWP. The integrity and safety of on-Site and off-Site structures will be maintained during all invasive, excavation or other remedial activity performed under the RAWP.

Dewatering

Groundwater is present at approximately 50 feet below grade and dewatering is not expected. In the event that dewatering of groundwater during construction will be necessary, the water will be disposed into the New York City combined sanitary/storm sewer system. A permit to discharge will be obtained from the New York City Department of Environmental Protection (NYCDEP). As part of the permit to discharge, the location of discharge will be based on the Site-Specific

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requirements of the DEP. The need for pretreatment will be determined by DEP's requirements for the discharge permit. If pretreatment is required by the DEP, it will be performed in accordance with the requirements of the DEP.

Equipment and Material Staging

Equipment and materials will be stored and staged in a manner that complies with applicable laws and regulations. Staging locations will be reported to OER prior to the start of the remedial action.

Stabilized Construction Entrance

Steps will be taken to ensure that trucks departing the Site will not track soil, fill or debris off-Site. Such actions may include use of cleaned asphalt or concrete roads or use of stone or other aggregate-based egress paths between the truck inspection station and the property exit. Measures will be taken to ensure that adjacent roadways will be kept clean of project related soils, fill and debris.

Truck Inspection Station

An outbound-truck inspection station will be set up close to the Site exit. Before exiting the NYC VCP Site, trucks will be required to stop at the truck inspection station and will be examined for evidence of contaminated soil on the undercarriage, body, and wheels. Soil and debris will be removed. Brooms, shovels and potable water will be utilized for the removal of soil from vehicles and equipment, as necessary.

Extreme Storm Preparedness and Response Contingency Plan

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, the enrollee will undertake the following steps for site preparedness prior to the event and response after the event.

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Storm Preparedness

Preparations in advance of an extreme storm event will include the following: containerized hazardous materials and fuels will be removed from the property; lose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from holes, trenches and depressions on the property to high ground or removed from the property; an inventory of the property with photographs will be performed to establish conditions for the site and equipment prior to the event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be removed from the property; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, haybales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the property, a complete inspection of the property will be performed. A site inspection report will be submitted to OER at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911. Petroleum spills will be reported to NYS DEC within 2 hours of identification and consistent with State regulations. Emergency and spill conditions will also be reported to OER. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed. Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Storm-water control systems

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and structures will be inspected and maintained as necessary. If soil or fill materials are discharged off-Site to adjacent properties, property owners and OER will be notified and corrective measure plan designed to remove and clean dislocated material will be submitted to OER and implemented following approval by OER and granting of site access by the property owner. Impacted offsite areas may require characterization based on site conditions, at the discretion of OER. If on-Site petroleum spills are identified, a qualified environmental professional will determine the nature and extent of the spill and report to NYS DEC's spill hotline at DEC 800-457-7362. If the source of the spill is ongoing and can be identified, it should be stopped it this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYS DEC.

Storm Response Reporting

A site inspection report will be submitted to OER at the completion of site inspection. An inspection report established by OER is available on OER's website (www.nyc.gov/oer) and will be used for this purpose. Site conditions will be compared to the inventory of site conditions and material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the OER project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number. Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and notice of plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the Site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYS DEC; description of corrective actions; schedule for corrective actions. This report should be completed and submitted to OER project manager with photographs within 24 hours of the time of safe entry to the property after the storm event.

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5.8 Traffic Control

Drivers of trucks leaving the NYC VCP Site with soil/fill will be instructed to proceed without stopping in the vicinity of the site to prevent neighborhood impacts. The planned route is shown on Figure 10.

5.9 Demobilization

Demobilization will include:

- As necessary, restoration of temporary access areas and areas that may have been disturbed to accommodate support areas (e.g., staging areas, decontamination areas, storage areas, temporary water management areas, and access area);
- Removal of sediment from erosion control measures and truck wash and disposal of materials in accordance with applicable laws and regulations;
- Equipment decontamination, and;
- General refuse disposal.

Equipment will be decontaminated and demobilized at the completion of all field activities. Investigation equipment and large equipment (*e.g.*, soil excavators) will be washed at the truck inspection station as necessary. In addition, all investigation and remediation derived waste will be appropriately disposed.

5.10 Reporting and Record Keeping

Daily Reports

Daily reports providing a general summary of activities for each day of *active remedial work* will be emailed to the OER Project Manager by the end of the following day. Those reports will include:

- Project number and statement of the activities and an update of progress made and locations of work performed;
- Quantities of material imported and exported from the Site;
- Status of on-Site soil/fill stockpiles;
- A summary of all citizen complaints, with relevant details (basis of complaint; actions taken; etc.);

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- A summary of CAMP excursions, if any;
- Photograph of notable Site conditions and activities.

The frequency of the reporting period may be revised in consultation with OER project manager based on planned project tasks. Daily email reports are not intended to be the primary mode of communication for notification to OER of emergencies (accidents, spills), requests for changes to the RAWP or other sensitive or time critical information. However, such information will be included in the daily reports. Emergency conditions and changes to the RAWP will be communicated directly to the OER project manager by personal communication. Daily reports will be included as an Appendix in the Remedial Action Report.

Record Keeping and Photo-Documentation

Job-site record keeping for all remedial work will be performed. These records will be maintained on-Site during the project and will be available for inspection by OER staff. Representative photographs will be taken of the Site prior to any remedial activities and during major remedial activities to illustrate remedial program elements and contaminant source areas. Photographs will be submitted at the completion of the project in the RAR in digital format (i.e. jpeg files).

5.11 Complaint Management

All complaints from citizens will be promptly reported to OER. Complaints will be addressed and outcomes will also be reported to OER in daily reports. Notices to OER will include the nature of the complaint, the party providing the complaint, and the actions taken to resolve any problems.

5.12 Deviations from the Remedial Action Work Plan

All changes to the RAWP will be reported to the OER Project Manager and will be documented in daily reports and reported in the Remedial Action Report. The process to be followed if there are any deviations from the RAWP will include a request for approval for the change from OER noting the following:

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- Reasons for deviating from the approved RAWP;
- Effect of the deviations on overall remedy; and
- Determination that the remedial action with the deviation(s) is protective of public health and the environment.

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6.0 REMEDIAL ACTION REPORT

A Remedial Action Report (RAR) will be submitted to OER following implementation of the remedial action defined in this RAWP. The RAR will document that the remedial work required under this RAWP has been completed and has been performed in compliance with this plan. The RAR will include:

- Information required by this RAWP;
- As-built drawings for all constructed remedial elements, required certifications, manifests and other written and photographic documentation of remedial work performed under this remedy;
- Site Management Plan;
- Description of any changes in the remedial action from the elements provided in this RAWP and associated design documents;
- Tabular summary of all end point sampling results and all material characterization results, QA/QC results for end-point sampling, and other sampling and chemical analysis performed as part of the remedial action and DUSR;
- Account of the source area locations and characteristics of all contaminated material removed from the Site including a map showing source areas;
- Account of the disposal destination of all contaminated material removed from the Site. Documentation associated with disposal of all material will include transportation and disposal records, and letters approving receipt of the material.
- Account of the origin and required chemical quality testing for material imported onto the Site.
- Continue registration of the property with an E-Designation by the NYC Department of Buildings.
- Reports and supporting material will be submitted in digital form.

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Remedial Action Report Certification

The following certification will appear in front of the Executive Summary of the Remedial Action Report. The certification will include the following statements:

I, _____, am currently a professional engineer licensed by the State of New York. I had primary direct responsibility for implementation of the remedial program for the Site name Site number.

I certify that the OER-approved Remedial Action Work Plan dated month day year and Stipulations in a letter dated month day, year; if any were implemented and that all requirements in those documents have been substantively complied with. I certify that contaminated soil, fill, liquids or other material from the property were taken to facilities licensed to accept this material in full compliance with applicable laws and regulations.

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7.0 SCHEDULE

The table below presents a schedule for the proposed remedial action and reporting. If the schedule for remediation and development activities changes, it will be updated and submitted to OER. Currently, a 2 month remediation period is anticipated.

Schedule Milestone	Weeks from Remedial Action Start	Duration (weeks)
OER Approval of RAWP	0	-
Fact Sheet 2 announcing start of remedy	0	-
Mobilization	1	1
Remedial Excavation	2	6
Demobilization	8	1
Submit Remedial Action Report	15	-

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TABLES

TABLE 1
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water	Unrestricted Use
		Residential	Restricted-Residential	Commercial	Industrial			
METALS								
Arsenic	7440-38 -2	16f	16f	16f	16f	13f	16f	13 [c]
Barium	7440-39 -3	350f	400	400	10,000 d	433	820	350 [c]
Beryllium	7440-41 -7	14	72	590	2,700	10	47	7.2
Cadmium	7440-43 -9	2.5f	4.3	9.3	60	4	7.5	2.5 [c]
Chromium, hexavalent [h]	18540-29-9	22	110	400	800	1e	19	1 [b]
Chromium, trivalent[h]	16065-83-1	36	180	1,500	6,800	41	NS	30 [c]
Copper	7440-50 -8	270	270	270	10,000 d	50	1,720	50
Total Cyanide [h]		27	27	27	10,000 d	NS	40	27
Lead	7439-92 -1	400	400	1,000	3,900	63f	450	63 [c]
Manganese	7439-96 -5	2,000f	2,000f	10,000 d	10,000 d	1600f	2,000f	1600 [c]
Total Mercury		0.81j	0.81j	2.8j	5.7j	0.18f	0.73	0.18 [c]
Nickel	7440-02 -0	140	310	310	10,000 d	30	130	30
Selenium	7782-49 -2	36	180	1,500	6,800	3.9f	4f	3.9[c]
Silver	7440-22 -4	36	180	1,500	6,800	2	8.3	2
Zinc	7440-66 -6	2200	10,000 d	10,000 d	10,000 d	109f	2,480	109 [c]
PESTICIDES / PCBs								
2,4,5-TP Acid (Silvex)	93-72-1	58	100a	500b	1,000c	NS	3.8	3.8
4,4'-DDE	72-55-9	1.8	8.9	62	120	0.0033 e	17	0.0033 [b]
4,4'-DDT	50-29-3	1.7	7.9	47	94	0.0033 e	136	0.0033 [b]
4,4'-DDD	72-54-8	2.6	13	92	180	0.0033 e	14	0.0033 [b]
Aldrin	309-00-2	0.019	0.097	0.68	1.4	0.14	0.19	0.005 [c]
alpha-BHC	319-84-6	0.097	0.48	3.4	6.8	0.04g	0.02	0.02
beta-BHC	319-85-7	0.072	0.36	3	14	0.6	0.09	0.036
Chlordane (alpha)	5103-71 -9	0.91	4.2	24	47	1.3	2.9	0.094
delta-BHC	319-86-8	100a	100a	500b	1,000c	0.04g	0.25	0.04
Dibenzofuran	132-64-9	14	59	350	1,000c	NS	210	7
Dieldrin	60-57-1	0.039	0.2	1.4	2.8	0.006	0.1	0.005[c]
Endosulfan I	959-98-8	4.8i	24i	200i	920i	NS	102	2.4
Endosulfan II	33213-65-9	4.8i	24i	200i	920i	NS	102	2.4
Endosulfan sulfate	1031-07 -8	4.8i	24i	200i	920i	NS	1,000c	2.4
Endrin	72-20-8	2.2	11	89	410	0.014	0.06	0.014
Heptachlor	76-44-8	0.42	2.1	15	29	0.14	0.38	0.042
Lindane	58-89-9	0.28	1.3	9.2	23	6	0.1	0.1
Polychlorinated biphenyls	1336-36 -3	1	1	1	25	1	3.2	0.1
SEMI-VOLATILES								
Acenaphthene	83-32-9	100a	100a	500b	1,000c	20	98	20
Acenapthylene	208-96-8	100a	100a	500b	1,000c	NS	107	100 [a]
Anthracene	120-12-7	100a	100a	500b	1,000c	NS	1,000c	100 [a]
Benz(a)anthracene	56-55-3	1f	1f	5.6	11	NS	1f	1[c]
Benzo(a)pyrene	50-32-8	1f	1f	1f	1.1	2.6	22	1[c]
Benzo(b) fluoranthene	205-99-2	1f	1f	5.6	11	NS	1.7	1[c]
Benzo(g,h,i) perylene	191-24-2	100a	100a	500b	1,000c	NS	1,000c	100
Benzo(k) fluoranthene	207-08-9	1	3.9	56	110	NS	1.7	0.8 [c]
Chrysene	218-01-9	1f	3.9	56	110	NS	1f	1[c]
Dibenz(a,h) anthracene	53-70-3	0.33e	0.33e	0.56	1.1	NS	1,000c	0.33 [b]
Fluoranthene	206-44-0	100a	100a	500b	1,000c	NS	1,000c	100 [a]
Fluorene	86-73-7	100a	100a	500b	1,000c	30	386	30
Indeno(1,2,3-cd) pyrene	193-39-5	0.5f	0.5f	5.6	11	NS	8.2	0.5 [c]
m-Cresol	108-39-4	100a	100a	500b	1,000c	NS	0.33e	0.33 [b]
Naphthalene	91-20-3	100a	100a	500b	1,000c	NS	12	12
o-Cresol	95-48-7	100a	100a	500b	1,000c	NS	0.33e	0.33 [b]
p-Cresol	106-44-5	34	100a	500b	1,000c	NS	0.33e	0.33 [b]
Pentachlorophenol	87-86-5	2.4	6.7	6.7	55	0.8e	0.8e	0.8[b]
Phenanthrene	85-01-8	100a	100a	500b	1,000c	NS	1,000c	100
Phenol	108-95-2	100a	100a	500b	1,000c	30	0.33e	0.33[b]
Pyrene	129-00-0	100a	100a	500b	1,000c	NS	1,000c	100

TABLE 1
Soil Cleanup Objectives

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water	Unrestricted Use
		Residential	Restricted-Residential	Commercial	Industrial			
VOLATILES								
1,1,1-Trichloroethane	71-55-6	100a	100a	500b	1,000c	NS	0.68	0.68
1,1-Dichloroethane	75-34-3	19	26	240	480	NS	0.27	0.27
1,1-Dichloroethene	75-35-4	100a	100a	500b	1,000c	NS	0.33	0.33
1,2-Dichlorobenzene	95-50-1	100a	100a	500b	1,000c	NS	1.1	1.1
1,2-Dichloroethane	107-06-2	2.3	3.1	30	60	10	0.02f	0.02[c]
cis-1,2-Dichloroethene	156-59-2	59	100a	500b	1,000c	NS	0.25	0.25
trans-1,2-Dichloroethene	156-60-5	100a	100a	500b	1,000c	NS	0.19	0.19
1,3-Dichlorobenzene	541-73-1	17	49	280	560	NS	2.4	2.4
1,4-Dichlorobenzene	106-46-7	9.8	13	130	250	20	1.8	1.8
1,4-Dioxane	123-91-1	9.8	13	130	250	0.1e	0.1e	0.1[b]
Acetone	67-64-1	100a	100b	500b	1,000c	2.2	0.05	0.05
Benzene	71-43-2	2.9	4.8	44	89	70	0.06	0.06
Butylbenzene	104-51-8	100a	100a	500b	1,000c	NS	12	12
Carbon tetrachloride	56-23-5	1.4	2.4	22	44	NS	0.76	0.76
Chlorobenzene	108-90-7	100a	100a	500b	1,000c	40	1.1	1.1
Chloroform	67-66-3	10	49	350	700	12	0.37	0.37
Ethylbenzene	100-41-4	30	41	390	780	NS	1	1
Hexachlorobenzene	118-74-1	0.33e	1.2	6	12	NS	3.2	0.33[b]
Methyl ethyl ketone	78-93-3	100a	100a	500b	1,000c	100a	0.12	0.12
Methyl tert-butyl ether	1634-04 -4	62	100a	500b	1,000c	NS	0.93	0.93
Methylene chloride	75-09-2	51	100a	500b	1,000c	12	0.05	0.05
n-Propylbenzene	103-65-1	100a	100a	500b	1,000c	NS	3.9	3.9
sec-Butylbenzene	135-98-8	100a	100a	500b	1,000c	NS	11	11
tert-Butylbenzene	98-06-6	100a	100a	500b	1,000c	NS	5.9	5.9
Tetrachloroethene	127-18-4	5.5	19	150	300	2	1.3	1.3
Toluene	108-88-3	100a	100a	500b	1,000c	36	0.7	0.7
Trichloroethene	79-01-6	10	21	200	400	2	0.47	0.47
1,2,4-Trimethylbenzene	95-63-6	47	52	190	380	NS	3.6	3.6
1,3,5-Trimethylbenzene	108-67-8	47	52	190	380	NS	8.4	8.4
Vinyl chloride	75-01-4	0.21	0.9	13	27	NS	0.02	0.02
Xylene (mixed)	1330-20 -7	100a	100a	500b	1,000c	0.26	1.6	0.26

All soil cleanup objectives (SCOs) are in parts per million (ppm). NS=Not specified. See Technical Support Document (TSD). Footnotes

a The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

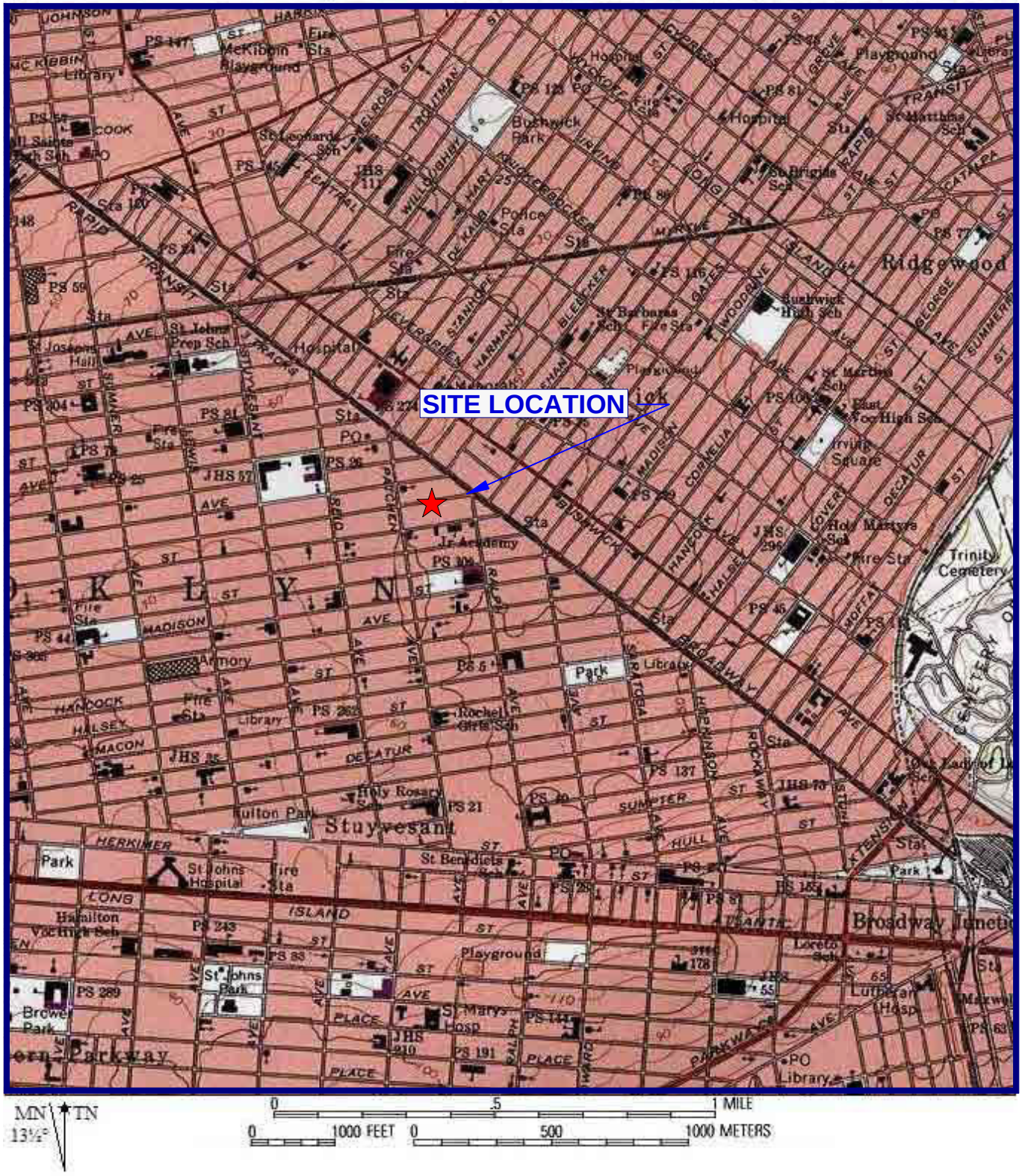
b The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

c The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

d The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

e For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

FIGURES



USGS Brooklyn Quadrangle 1995, Contour Interval = 10 feet

EBC
Environmental Business Consultants
Phone 631.504.6000
Fax 631. 924 .2870

818 Lexington Avenue
Brooklyn, NY

FIGURE 1 Site Location Map

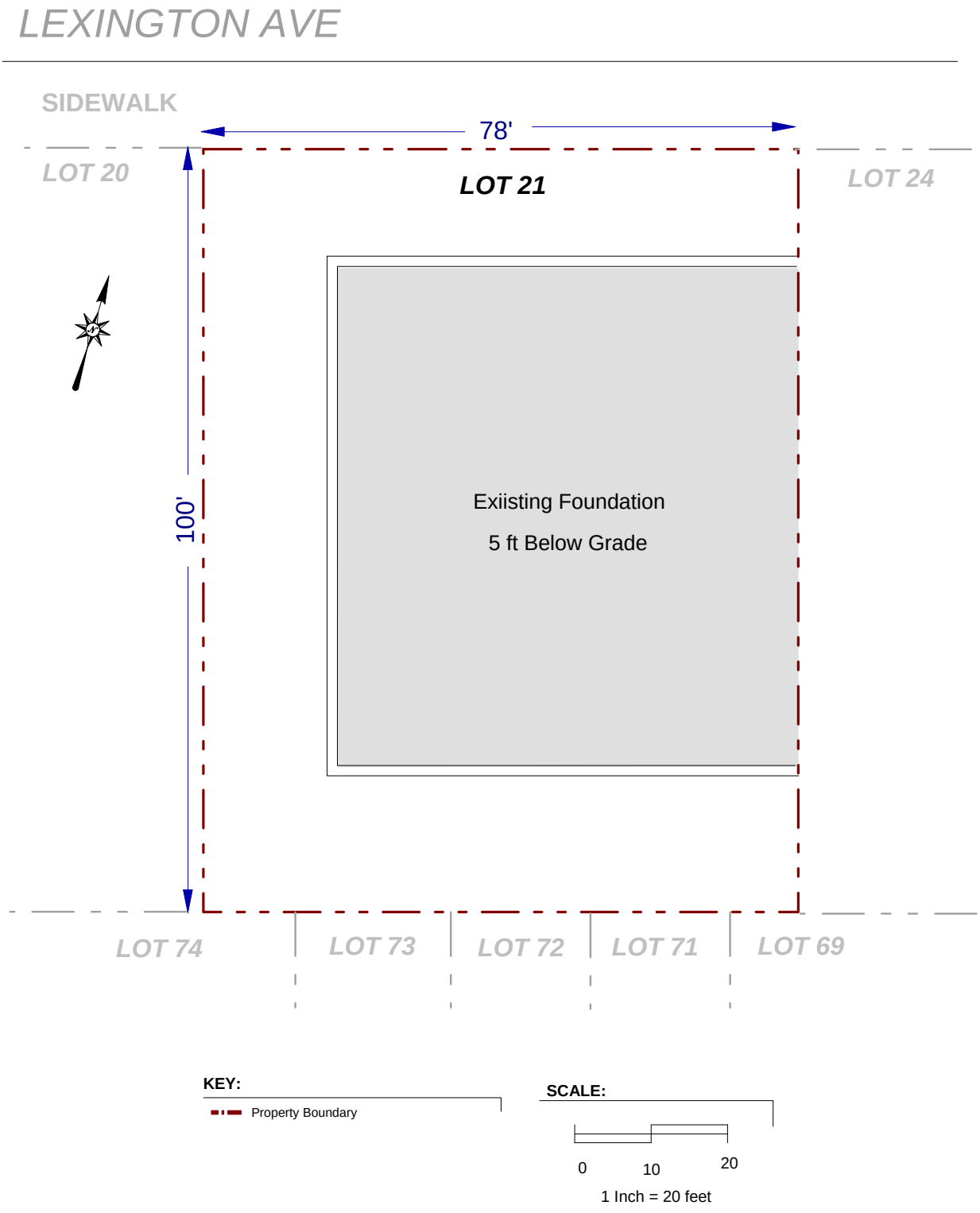


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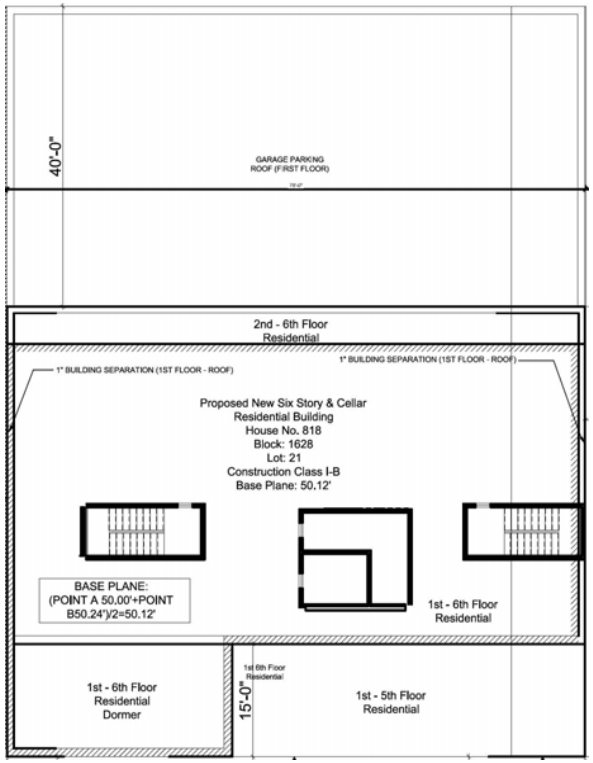
Figure No. 2

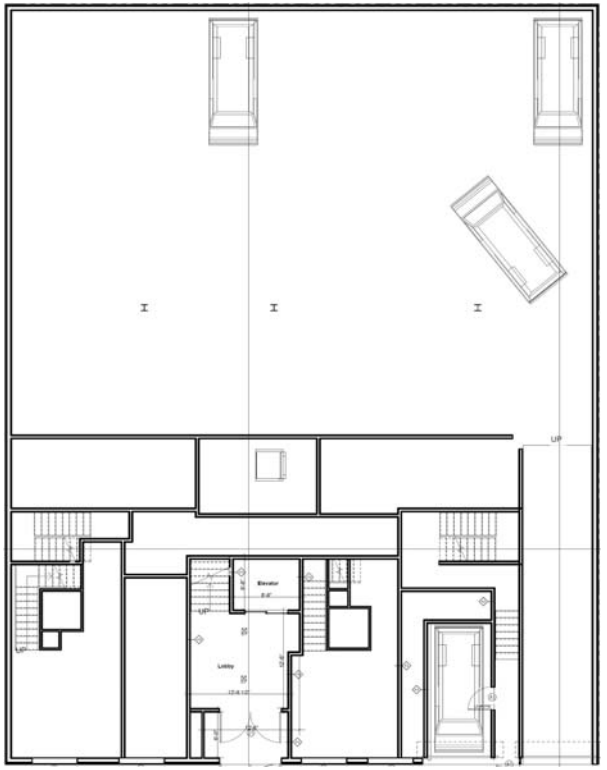
Site Name:	Redevelopment Property
Site Address:	818 Lexington Avenue, Brooklyn, NY 11221
Drawing Title:	Site Boundary Map

DESIGN

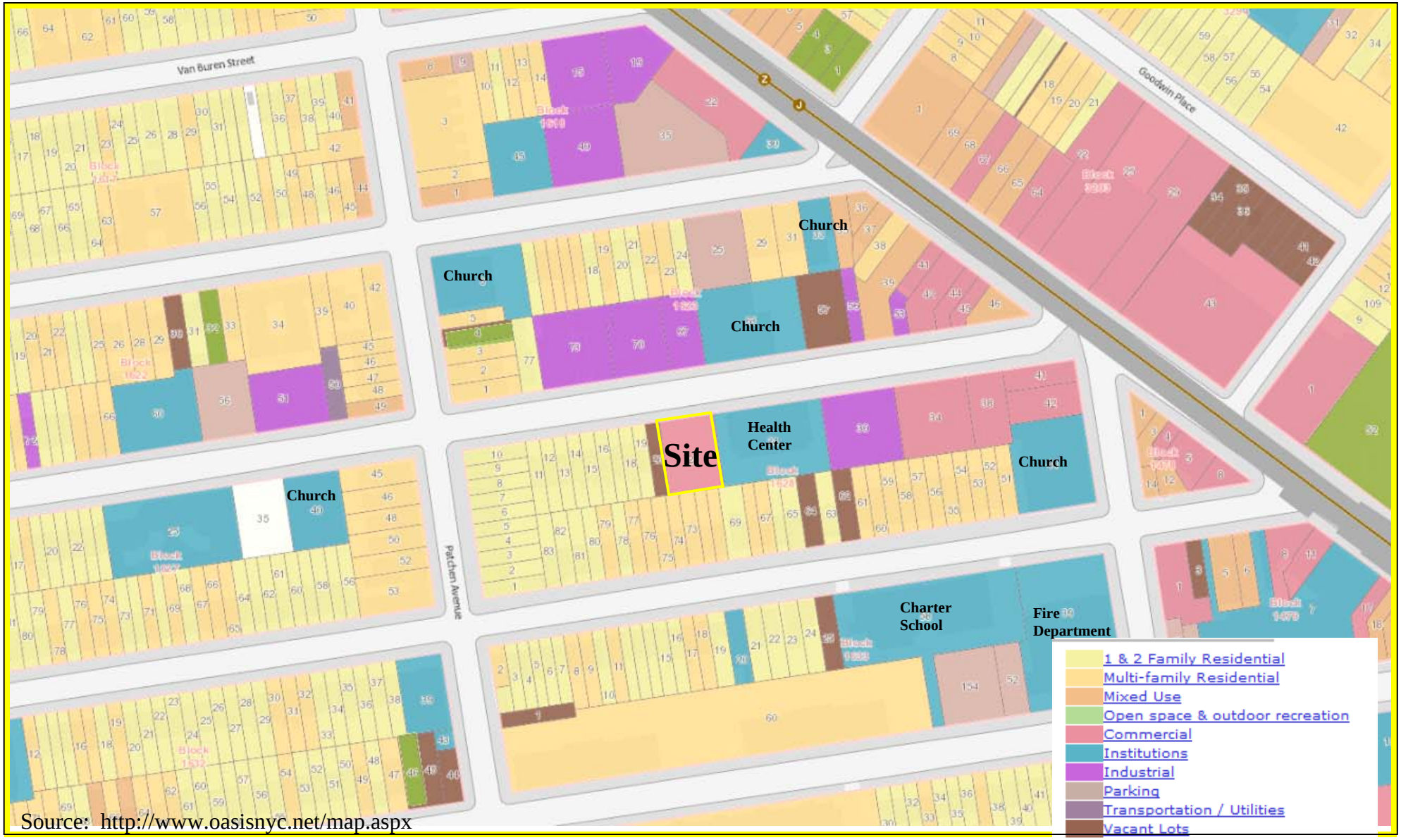


CELLAR FLOOR PLAN

FIRST FLOOR PLAN



EBC Environmental Business Consultants	Phone 631.504.6000 Fax 631. 924 .2870	Figure No. 3	Site Name: Redevelopment Project Site Address: 818 Lexington Avenue, Brooklyn, NY Drawing Title: Redevelopment Plan



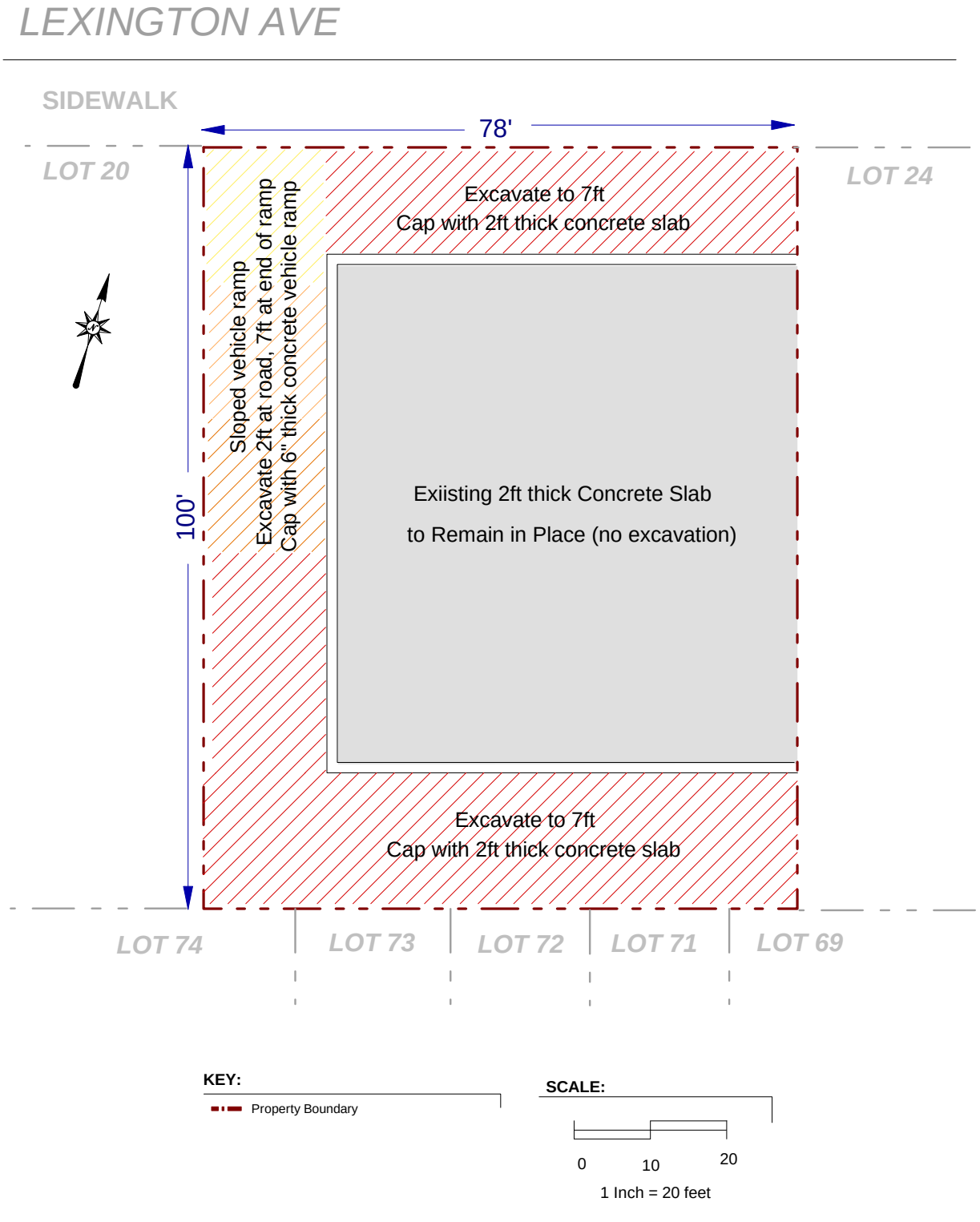
Source: http://www.oasisnyc.net/map.aspx

FIGURE 4
SURROUNDING LAND USE MAP

818 LEXINGTON AVENUE, BROOKLYN, NY

REMEDIAL INVESTIGATION REPORT

EBC
ENVIRONMENTAL BUSINESSS CONSULTANTS
1808 MIDDLE COUNTRY ROAD, RIDGE, NEW YORK 11961
PHONE: (631) 504-6000 FAX: (631) 924-2870



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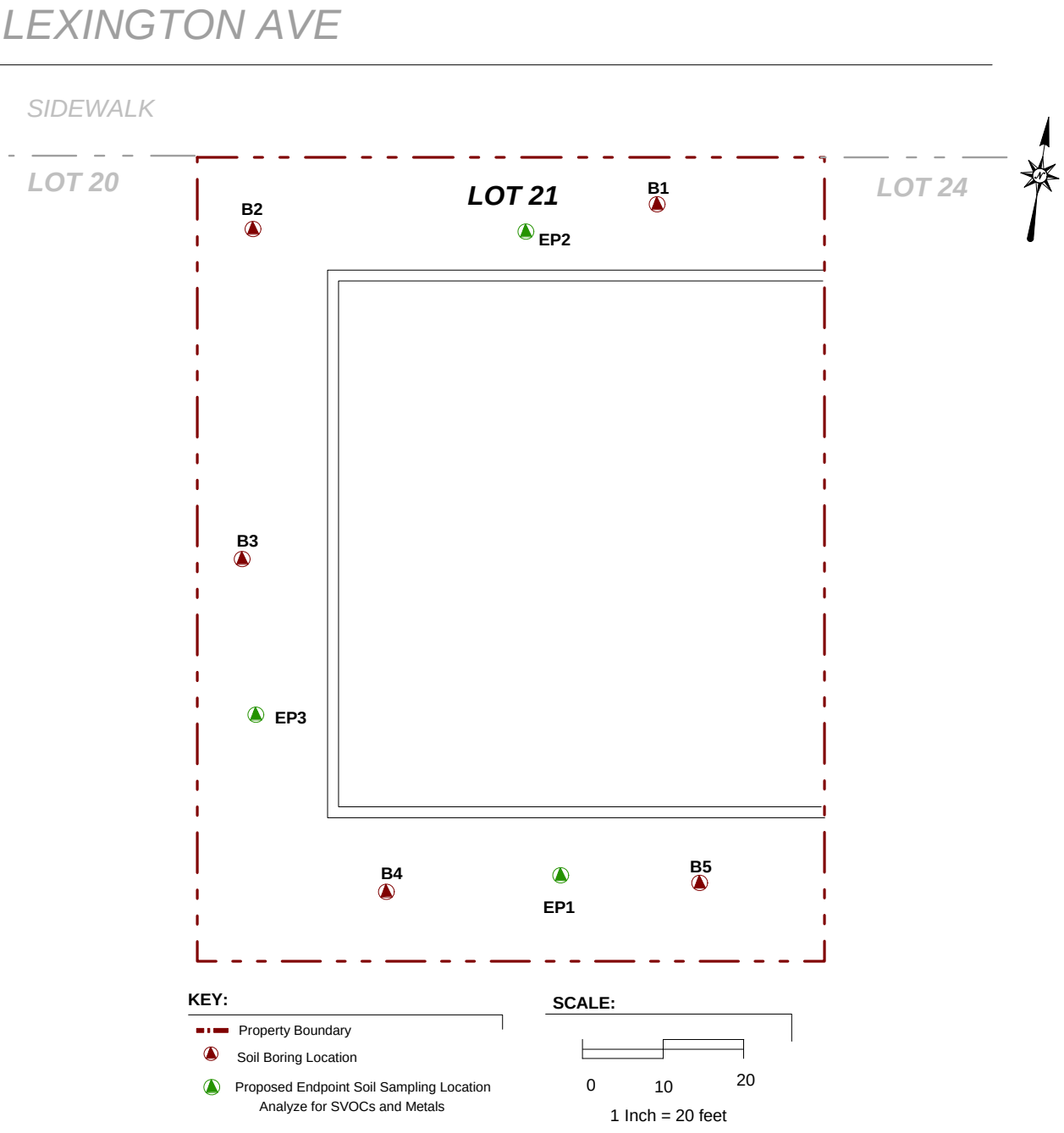
Phone 631.504.6000
Fax 631. 924 .2870

Figure No. 5

Site Name:	Redevelopment Property
Site Address:	818 Lexington Avenue, Brooklyn, NY 11221
Drawing Title:	Excavation and Capping Plan



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ENVIRONMENTAL BUSINESS CONSULTANTS
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Figure No. 6

Site Name:	Redevelopment Property
Site Address:	818 Lexington Avenue, Brooklyn, NY 11221
Drawing Title:	Endpoint Soil Sampling Plan

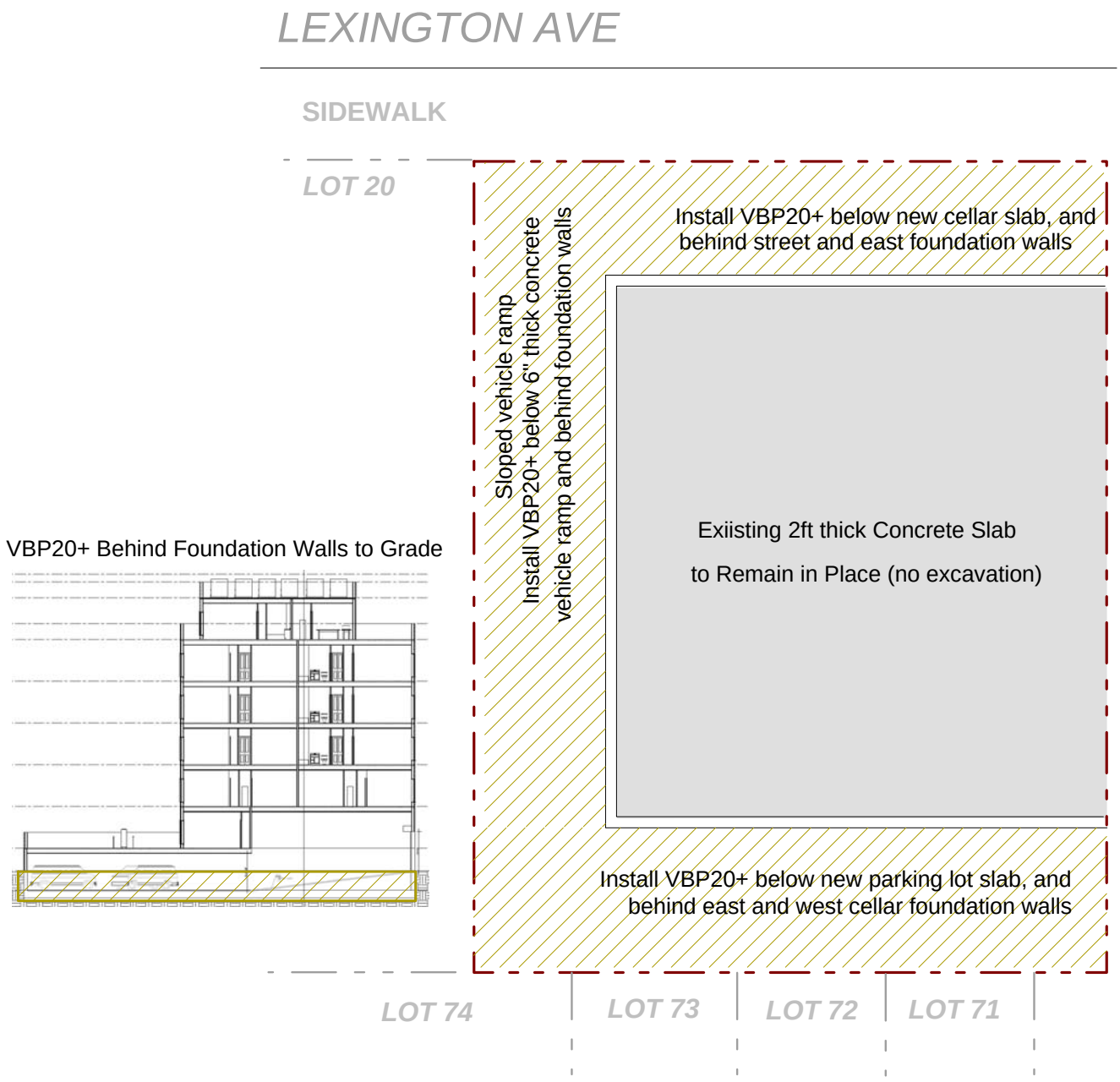

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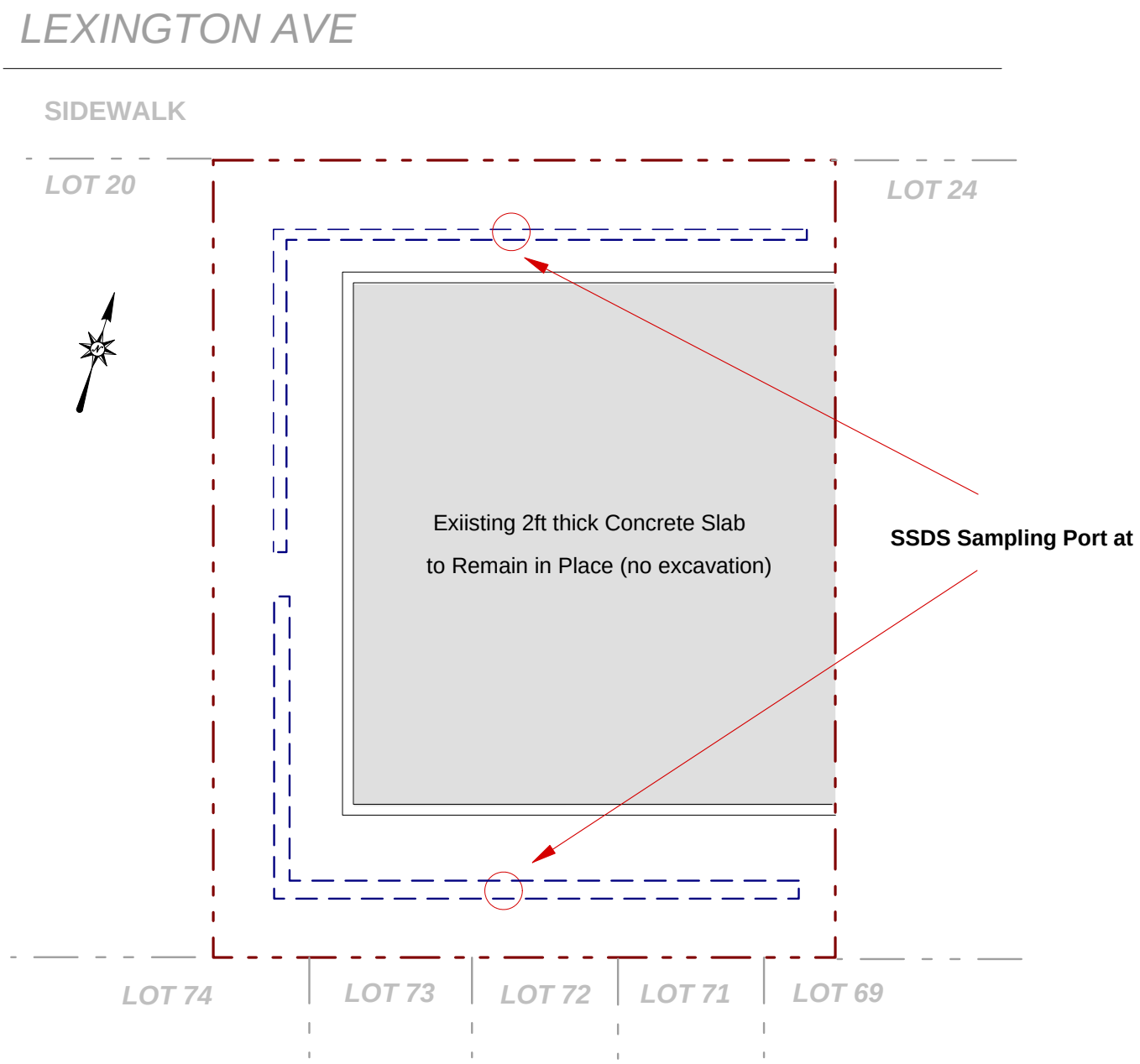
Figure No. 7

Site Name:	Redevelopment Property
Site Address:	818 Lexington Avenue, Brooklyn, NY 11221
Drawing Title:	Vapor Barrier Plan



KEY:

Property Boundary

4-in diameter HDPE Perforated Vent Pipe (Smooth Interior)

SCALE:

0 10 20

1 Inch = 20 feet

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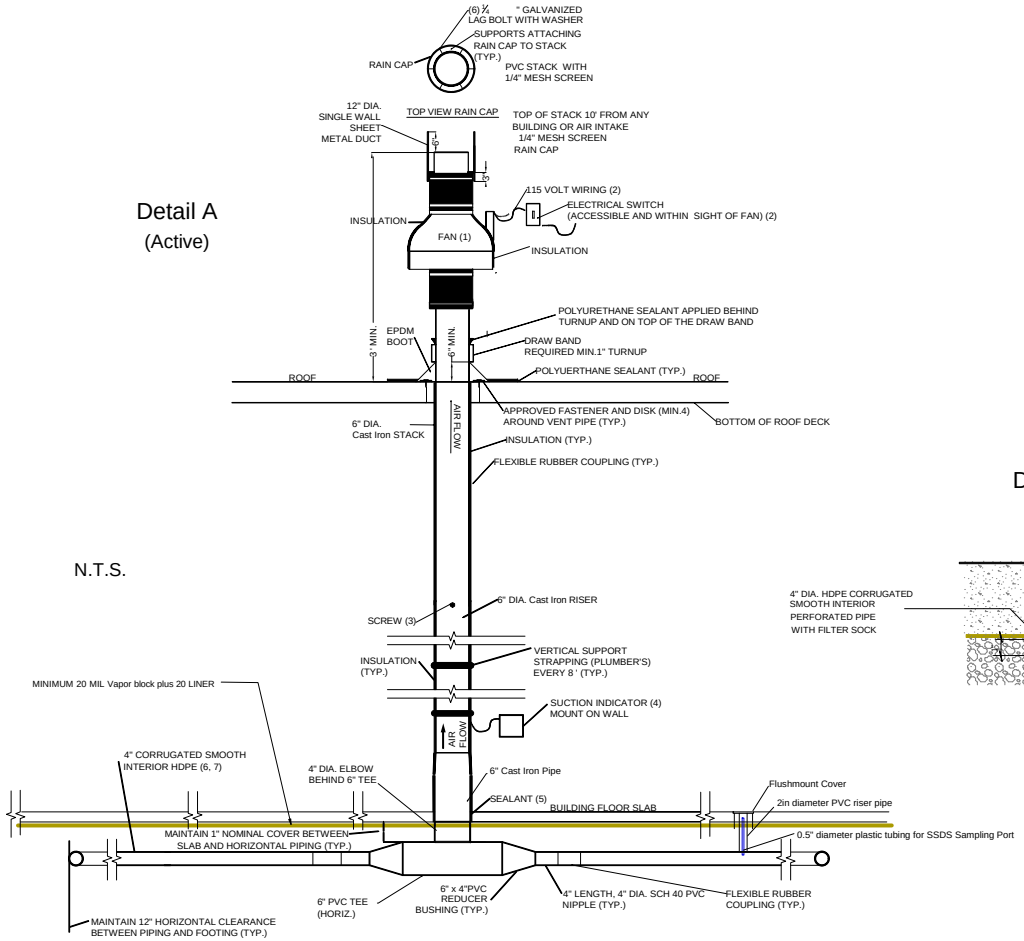
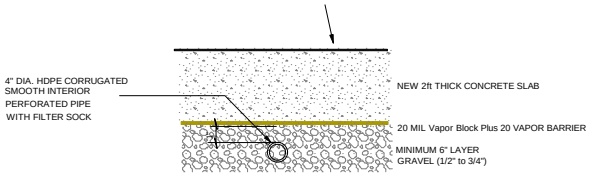
Figure No. 8

Site Name:	Redevelopment Property
Site Address:	818 Lexington Avenue, Brooklyn, NY 11221
Drawing Title:	SSDS Layout

Detail A
(Active)



Detail B



NOTES:

1. FAN TO BE RADONAWAY HIGH-FLOW IN-LINE FAN, MODEL RP 265, OR APPROVED EQUAL.
2. FAN AND ON/OFF SWITCH TO BE HARD-WIRED TOGETHER TO 115 VOLT CIRCUIT.
3. SECURE RUBBER COUPLING WITH SCREW TO PREVENT FAN ASSEMBLY FROM SLIPPING DOWN VERTICAL PIPE.
4. DWYER MAGNAHELIC DIAL TYPE VACUUM GAUGE MODEL 2002-M OR APPROVED EQUAL.
5. SEAL OPENING WITH ELASTOMERIC JOINT SEALANT AS DEFINED IN ASTM C920.
6. HIGH DENSITY POLYETHYLENE CORRUGATED PERFORATED PIPE ADS N-12 OR APPROVED EQUAL.
7. WRAP 4" HDPE PIPE WITH GEOTEXTILE FABRIC, GSE NW4 OR APPROVED EQUAL.
8. EBC MUST PRE-APPROVE ALL FILLMATERIAL BEFORE DELIVERY TO SITE.

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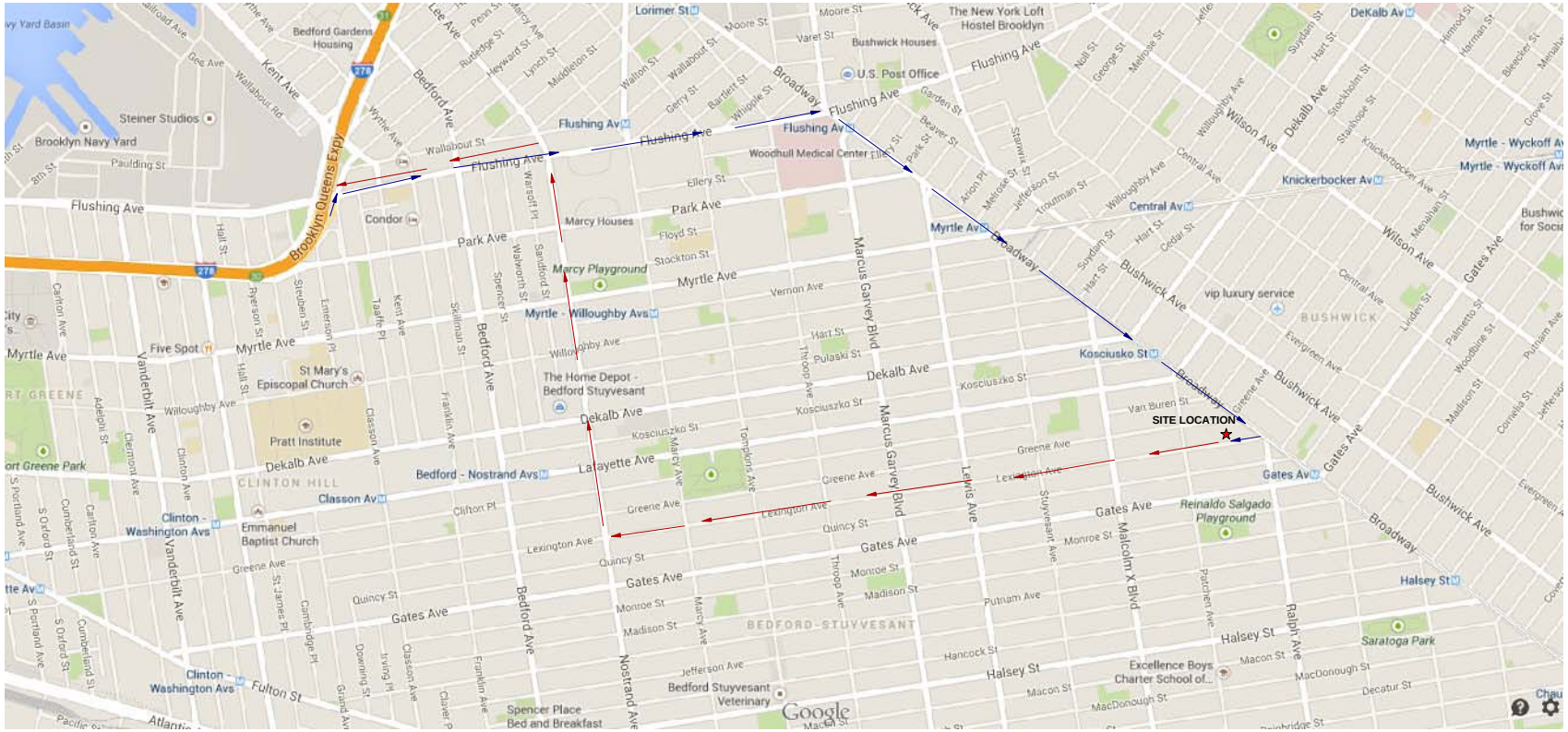
Figure No. 9

Site Name: REDEVELOPMENT PROJECT
Site Address: 818 LEXINGTON AVENUE, BROOKLYN, NY
Drawing Title: ACTIVE SSDS DETAILS



Key

Truck Route to the Site

Truck Route from the Site

EBC

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818 LEXINGTON AVENUE
BROOKLYN, NY

FIGURE 10 TRUCK ROUTES

ATTACHMENT A
PROPOSED DEVELOPMENT PLANS

818 Lexington

1 Front 3D

1	Structural Steel - Erection & Bolting	BC 1704.3.2, BC 1704.3.3	TR-1
2	Structural Cold-Formed Steel	BC 1704.3.4	TR-1
3	Concrete Cast-In-Place	BC 1704.4	TR-1
4	Masonry	BC 1704.5	TR-1
5	Soils - Investigations (Boring/Test Pits)	BC 1704.7.4	TR-4
6	Underpinning	BC 1704.9.1	TR-1
7	Exterior Insulation Finish Systems (EIFS)	BC 1704.12	TR-1
8	Smoke Control Systems	BC 1704.14	TR-1
6	Structural Safety - Structural Stability	BC 1704.19	TR-1
10	Excavation - Sheeting, Shoring, and Bracing	BC 1704.19, BC 3304.4.1	TR-1
11	Sprinkler Systems	BC 1704.21	TR-1
12	Firestop, Draftstop, and Fireblock Systems	BC 1704.25	TR-1
13	Concrete Test Cylinders	BC 1905.6	TR-2
14	Concrete Design Mix	BC 1905.3	TR-3
15	Prelimenary	28-116.21, BC 109.2	TR-1
16	Footing and Foundation	BC 109.3.1	TR-1
17	Energy Code Compliance Inspections	BC 109.3.5	TR-8
18	Fire-Resistance Rated Construction	BC 109.3.4	TR-1
19	Protection of Foundation Insulation	(IA1), (IIA1)	TR-8
20	Insulation Placement and R Values	(IA2), (IIA2)	TR-8
21	Fenestration Thermal Values and Ratings	(IA3), (IIA3)	TR-8
22	HVAC and Service Water Heating Equipment	(IB3), (IIB3)	TR-8
23	HVAC and Service Water Heating System Controls	(IB4), (IIB4)	TR-8
24	Lighting in Dwelling Units	(IC2), (IIC2)	TR-8
25	Interior Lighting Power	(IIC3)	TR-8
26	Exterior Lighting Power	(IIC4)	TR-8
27	Lighting Controls	(IIC5)	TR-8
28	Exit Signs	(IIC6)	TR-8

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

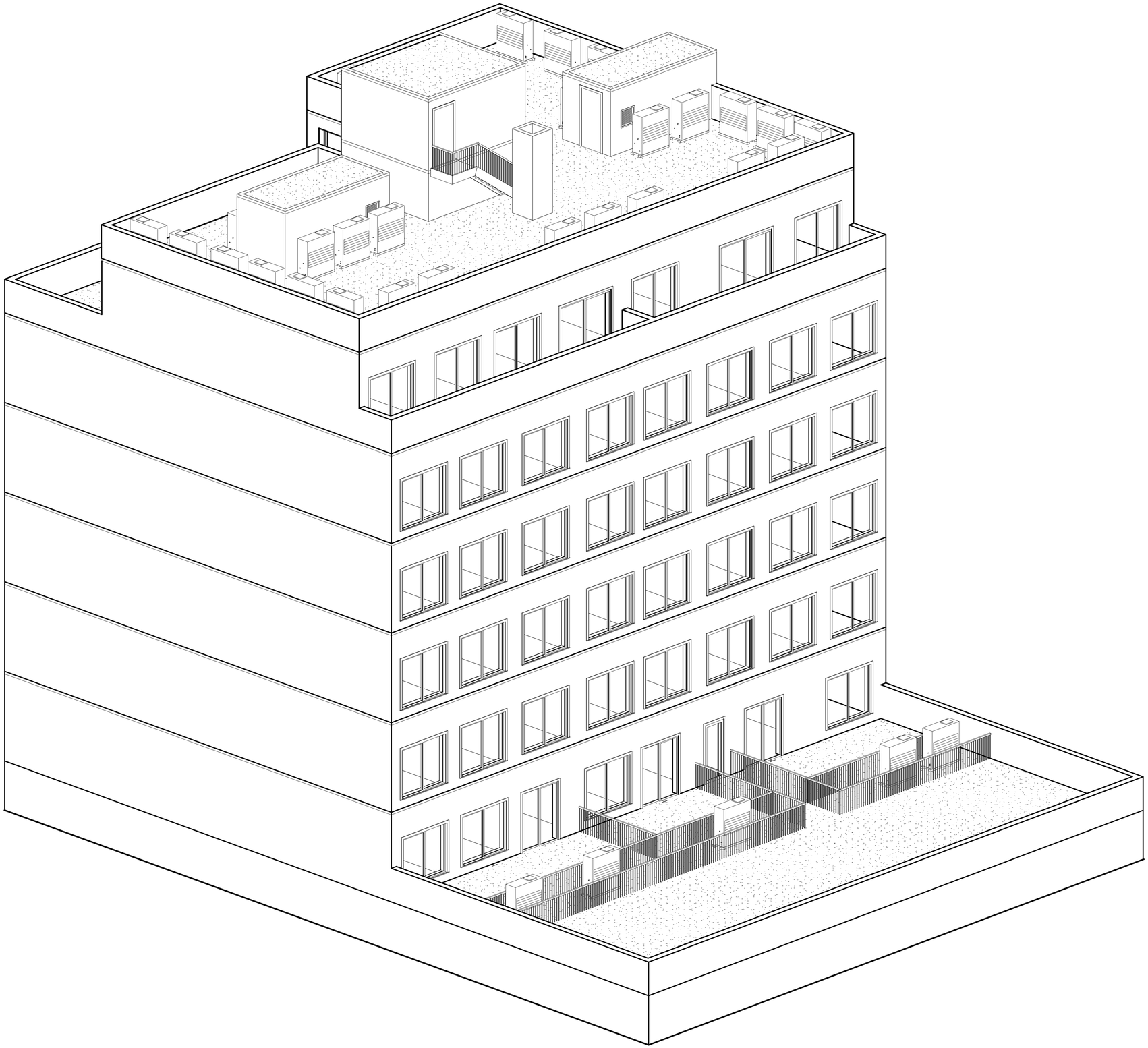
Front 3D

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

T-100.00

Sheet:	1 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



1 Rear 3D

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Rear 3D

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

T-101.00

Sheet:	2 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker

Property Info:	Building Data:	Scope of Job:
County: Kings Borough: Brooklyn Block: 1628 Lot: 21 Address: 818 Lexington Ave., Brooklyn NY 11221 Lot Area: 7,800 SF Lot Frontage: 78'-0" Lot Depth: 100'-0" Zoning District: R6A / C2-4 Inclusionary Housing Designation: None Zoning Map 17a Community Board: 3	Construction: Class I-B Use Group 2 Occupance Group: R-2	NB Application filed on lot # 21: 818 Lexington Avenue.

ARTICLE III: COMMERCIAL DISTRICT REGULATIONS

CHAPTER 2 - USE REGULATIONS:

32-10 USES PERMITTED AS OF RIGHT - USE GROUPS 1 AND 2

PERMITTED USE GROUP 2 IN R6A - AS PER 22-12

CHAPTER 4 - BULK REGULATIONS FOR RESIDENTIAL BUILDINGS IN COMMERCIAL DISTRICTS

34-01 APPLICABILITY OF THIS CHAPTER

SUBJECT APPLICATION IS FOR A RESIDENTIAL ONLY BUILDING LOCATED WITHIN C2-4 COMMERCIAL DISTRICT MAPPED WITHIN AN R6A DISTRICT AND IS SUBJECT TO ARTICLE III CHAPTER 4 BULK REGULATIONS FOR RESIDENTIAL BUILDINGS IN COMMERCIAL DISTRICTS

34-011 QUALITY HOUSING PROGRAM

SUBJECT ZONING LOT IS MAPPED WITHIN AN R6A DISTRICT AND IS SUBJECT TO ALL REQUIREMENTS OF ARTICLE II CHAPTER 8

34-11 GENERAL PROVISIONS

SUBJECT APPLICATION IS SUBJECT TO ARTICLE II CHAPTER 3 BULK REGULATIONS

34-111 RESIDENTIAL BULK REGULATIONS IN C1 OR C2 DISTRICTS WHOSE BULK IS GOVERNED BY SURROUNDING ZONING DISTRICTS

SUBJECT ZONING LOT IS MAPPED WITHIN R6A DISTRICT AND IS SUBJECT TO R6A BULK REGULATIONS.

34-22 MODIFICATION OF FLOOR AREA AND OPEN SPACE REGULATIONS

34-221 MAXIMUM FLOOR AREA RATIO

AS PER ARTICLE II CHAPTER 3

34-23 MODIFICATION OF YARD REGULATIONS

NO FRONT YARDS ARE REQUIRED

34-232 MODIFICATION OF SIDE YARD REQUIREMENTS

NO SIDE YARDS ARE REQUIRED.

34-233 SPECIAL PROVISIONS

SUBJECT ZONING LOT IS NOT COINCIDENT TO R1 THROUGH R5 DISTRICTS.

34-24 MODIFICATION OF HEIGHT AND SETBACK REGULATIONS

SUBJECT APPLICATION HEIGHT AND SETBACK REQUIREMENTS AS PER ZR34-11 AS PER ARTICLE II CHAPTER 3 ARE NOT MODIFIED IN THAT SUBJECT ZONING LOT IS NOT ONE OF THE FOLLOWING:

-SUBJECT TO SKY EXPOSURE PLANE

-MAPPED WITHIN R3 OR R4A DISTRICT

-MAPPED WITHIN R4, R4B OR R4-1 DISTRICTS

-A NARROW BUILDING MAPPED WITHIN C4-4, C-48, C4-2F, C4-6, C4-7, C5, OR C6

- LOCATED NEXT TO R1, R2, R34, R4, R5, OR R6B DISTRICT BOUNDARIES.

ARTICLE II RESIDENCE DISTRICT REGULATIONS

CHAPTER 3 - RESIDENTIAL BULK REGULATIONS IN RESIDENCE DISTRICTS

23-011 QUALITY HOUSING PROGRAM

R6A ELECT QUALITY HOUSING PROGRAM

23-03 STREET TREE PLANTING IN RESIDENCE DISTRICTS

R6A IN ACCORDANCE WITH 26-41

23-12 PERMITTED OBSTRUCTIONS IN OPEN SPACE

PROPOSED DRIVEWAYS, OFF STREET PARKING SPACES

23-145 FOR QUALITY HOUSING BUILDINGS

LOT COVERAGE ON SUBJECT INTERIOR LOT = 65%

MAXIMUM PERMITTED LOT COVERAGE = 65% * 78'X100' = 5,070 SF

TOTAL PROPOSED LOT COVERAGE = 4,670 SF

MAX F.A.R = 3.00

78' * 100' = 7,800 SF * 3.00 = 23,400 SF

23-22 MAXIMUM NUMBER OF DWELLING UNITS OR ROOMING UNITS

MAXIMUM # OF D.U. = 23,400 SF / 680 = 34.411

PROPOSED # OF D.U. = 34

23-44 PERMITTED OBSTRUCTIONS IN REQUIRED YARDS OR REAR YARD EQUIVALENTS

PROPOSED DRIVEWAYS, OFF STREET PARKING SPACES

23-46 MINIMUM REQUIRED SIDE YARDS

SUPERSEDED BY 34-232

23-47 MINIMUM REQUIRED REAR YARDS

MINIMUM = 30', PROPOSED = 40'

23-60 HEIGHT AND SETBACK REGULATIONS

23-62 PERMITTED OBSTRUCTIONS

THE FOLLOWING ITEMS ARE PROPOSED BEYOND MAXIMUM BUILDING HEIGHT

-STAIR BULKHEADS (SEE CALCULATIONS PAGE Z-102)

-ELEVATOR BULKHEAD (SEE CALCULATIONS PAGE Z-102)

-PARAPETS

-DORMER (SEE CALCULATION ON THIS PAGE)

23-633 STREET WALL LOCATION AND HEIGHT AND SETBACK RGULATIONS IN CERTAIN DISTRICTS

A STREET WALL - SUBJECT APPLICATION IS PROPOSING A STREET WALL LOCATED ON THE STREET LINE AND IS NOT CLOSE TO THE STREET LINE OF ADJOINING PROPERTIES IN THAT EXISTING BUILDINGS LOCATED AT ADJOINING PROPERTIES ARE LOCATED AT THE STREET LINE

B SETBACK REGULATIONS - SUBJECT PROPERTY FRONTS A NARROW STREET AT LEXINGTON AVENUE AND A SETBACK OF 15' IS PROVIDED BETWEEN MINIMUM AND MAXIMUM BASE HEIGHT

C MAXIMUM BUILDING HEIGHT

MINIMUM PERMITTED BASE HEIGHT - 40'

MAXIMUM PERMITTED BASE HEIGHT - 60'

ACTUAL PROPOSED BASE HEIGHT - 59'-2"

MAXIMUM PERMITTED BUILDING HEIGHT = 70'

ACTUAL PROPOSED BUILDING HEIGHT = 69'-10"

23-86 MINIMUM DISTANCE BETWEEN LEGALLY REQUIRED WINDOWS AND WALLS OR LOT LINES:

ALL LEGALLY REQUIRED WINDOWS FACE A STREET OR A SIDE LOT LINE WITH A MINIMUM DISTANCE OF 30' MEASURED IN A HORIZONTAL PERPENDICULAR DIMENSION FROM SILL LEVEL.

CHAPTER 5 ACCESSORY OFF-STREET PARKING AND LOADING REGULATIONS

25-025 APPLICABILITY OF REGULATIONS TO QUALITY HOUSING

25-23 REQUIREMENTS WHERE GROUP PARKING FACILITIES ARE PROVIDED

REQUIRED: 50% OF PROPOSED D.U. = 50%*34 D.U. = 17

PROPOSED: 17 ENCLOSED IN CELLAR

25-811 ENCLOSED BICYCLE PARKING SPACES

REQUIRED: 50% OF PROPOSED D.U. = 50%*34 D.U. = 17

PROPOSED: 17 ENCLOSED IN CELLAR

25-83 RESTRICTIONS ON OPERATION, SIZE AND LOCATION OF ENCLOSED BICYCLE PARKING SPACES

MINIMUM REQUIRED AREA PER BICYCLE SPACE = 15SF

PROPOSED AREA PER BICYCLE SPACE = 15 SF

PROPOSED TOTAL BICYCLE PARKING AREA = 17 D* 15 SF = 255SF

CHAPTER 6 - SPECIAL URBAN DESIGN GUIDELINES - STREET TREE PLANTING

26-41 STREET TREE PLANTING

REQUIRED: 1 TREE PER 25' OF FRONTAGE = 78' / 25' = 3.12 TREES

PROPOSED = 3 TREES ON SITE

CHAPTER 8 - THE QUALITY HOUSING PROGRAM

28-01 APPLICABILITY OF THIS CHAPTER

ELECT QUALITY HOUSING - R6A

28-21 SIZE OF DWELLING UNITS

MINIMUM REQUIRED - 400 SF

PROPOSED MINIMUM - 417 SF

28-22 WINDOWS

MINIMUM REQUIREMENT OF DOUBLE GLAZED WINDOWS

PROPOSED : DOUBLE GLAZED WINDOWS

28-23 REFUSE STORAGE AND DISPOSAL

MINIMUM REQUIRED VOLUME OF REFUSE STORAGE ROOM: 2.9 CF PER D.U. = 2.9 CF * 34 D.U. = 98.6 CF.

PROPOSED: 165 SF REFUSE STORAGE AND REMOVAL ROOM, 9' CEILING = 1,485 CF

28-25 DAYLIGHT IN CORRIDORS

50% OF AREA DEDUCTED

MINIMUM 20 SF OF GLAZED AREA REQUIRED

28-31 REQUIRED RECREATION SPACE

MINIMUM REQUIRED AND MAXIMUM DEDUCTIBLE : 3.3% OF FLOOR AREA = 3.3% * 23,400 SF = 772.2 SF

PROPOSED: 777 SF ON 6TH FLOOR

28-32 STANDARDS FOR RECREATION SPACE

MINIMUM DIMENSION OF INDOOR SPACE IS 15'

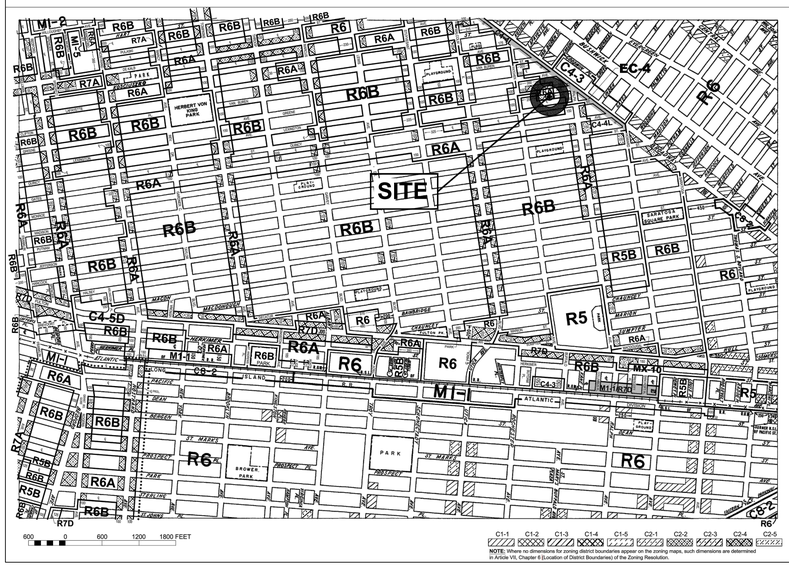
28-41 DENSITY PER CORRIDOR

MAXIMUM PERMITTED NUMBER OF DWELLING UNITS SERVED BY CORRIDOR TO TAKE 50% DEDUCTION : R6A = 11

MAXIMUM PERMITTED NUMBER OF DWELLING UNITS SERVED PER CORRIDOR = 7

Zoning Analysis - 818 Lexington Avenue

Floor	Proposed Gross	Proposed Deduction (See Sheet Z-101.00 For Breakdown)	Proposed Net	Proposed No. D.U.
Cellar	5304 SF	5304 SF (Not F.A.)	0 SF	0
L	1202.18 SF	1046 SF	156.18 SF	0
1	3588.85 SF	403.96 SF	3184.89 SF	5
2	4670 SF	187.22 SF	4482.78 SF	6
3	4670 SF	216.16 SF	4453.84 SF	7
4	4670 SF	216.16 SF	4453.84 SF	7
5	4670 SF	216.16 SF	4453.84 SF	7
6	3498.31 SF	1449.336 SF	2048.95 SF	2
Bulkhead	454.01 SF	454.01 (Not F.A.)	0 SF	0
Total	32727.35 SF	9493.01 SF	23234.32 SF	34
Allowed			23400 SF	34
Compliance			23234.32 < 23400 SF	***OK***



NOTE: Where no dimensions for zoning district boundaries appear on the zoning maps, such dimensions are determined in Article VII, Chapter 6 (Location of District Boundaries) of the Zoning Resolution.

ZONING MAP
THE NEW YORK CITY PLANNING COMMISSION

Major Zoning Classifications:
The number(s) and/or letter(s) that follows an **R**, **C** or **M** District designation indicates use, bulk and other controls as described in the text of the Zoning Resolution.

R – RESIDENTIAL DISTRICT
C – COMMERCIAL DISTRICT
M – MANUFACTURING DISTRICT
SPECIAL PURPOSE DISTRICT
The letter(s) within the shaded area designates the special purpose district as described in the text of the Zoning Resolution.
AREA(S) REZONED

Effective Date(s) of Rezoning:
09-24-2013 C 130213 ZMK

Special Requirements:
For a list of lots subject to CEQR environmental requirements, see APPENDIX C.
For a list of lots subject to "D" restrictive declarations, see APPENDIX D.
For Inclusionary Housing designated areas on this map, see APPENDIX F.

MAP KEY

12d	13b	13d
16c	**17a**	17c
16d	17b	17d

ZONING MAP **17a**

NOTE: Zoning information as shown on this map is subject to change. For the most up-to-date zoning information for this map, visit the Zoning section of the Department of City Planning website: **www.nyc.gov/planning**, or contact the Zoning Information Desk at (212) 720-3291.

Energy Notes:

To the best of my knowledge, belief and professional judgment, these plans and specifications are in compliance with the energy conservation construction code of New York State "Sec. 202 of the ECCNYS and per provisions of Sec. 101.4.1"

Base Plane Calculation:

Point A Elev. = 50.00' Equation = (A+B)/2

Point B Elev. = 50.24 (50.00'+50.24')/2=50.12'

Base Plane Elevation = 50.12'

Dormer Calculation as per ZR 123-662.c:

Lexington Ave. Max Width of Dormer at Max Base Height of 60': 60% of 78'-0"= 46.8'

Maximum Width of Dormer @ 9'-10" Above Max Base Height: 46.8' - (9.833% of 46.8') = 46.8' - 4.602' = 42.198' = 42'-2"

Proposed: 30'-4.25" < 42'-2" OK

Flood Note:

This lot is not located in a special flood hazard area

To Be Filed Separately:

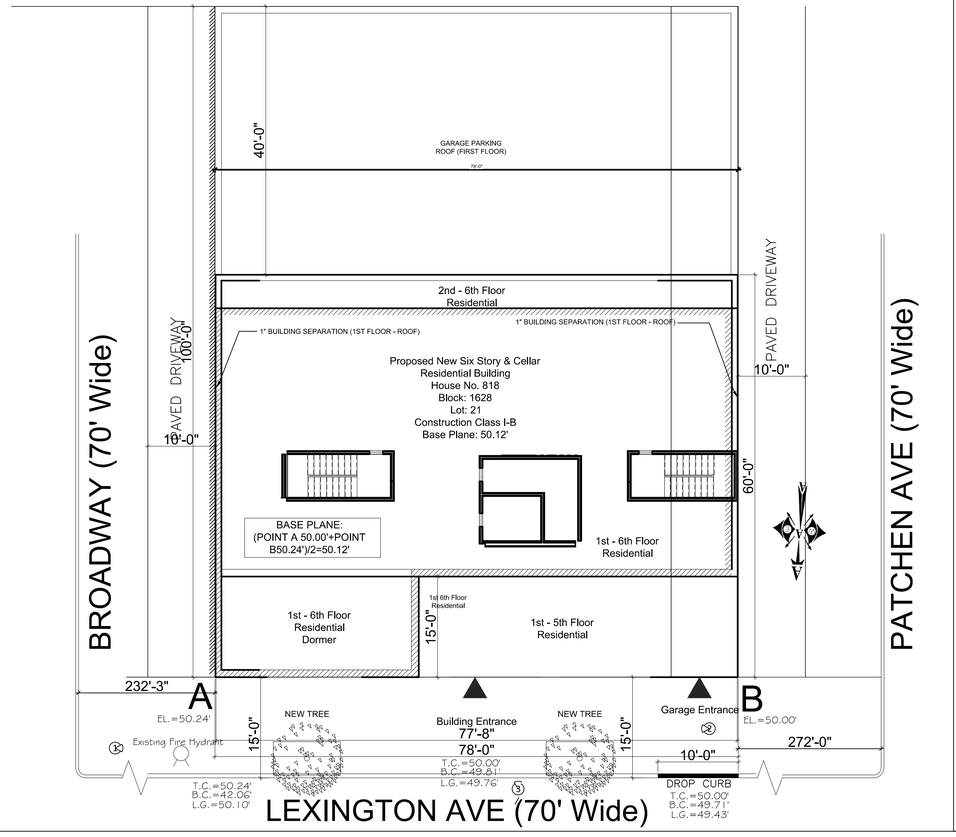
Sprinkler
FPP
Mechanical
Elevator
BPP
Shed
Fence

Tree Planting:

3 Trees Required As Per ZR 26-41
Exact location to be determined by Department of Parks & Recreation

Responsibility of Owner of Taller Building

The owner assumes the responsibility of altering adjoining chimneys and vents within 100 ft of the building as specified by BC 2113.1.6 to be in accordance with sections BC 2113.1.6.1 to BC 2113.1.6.8



Sheet List

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

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Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @
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Brooklyn, NY

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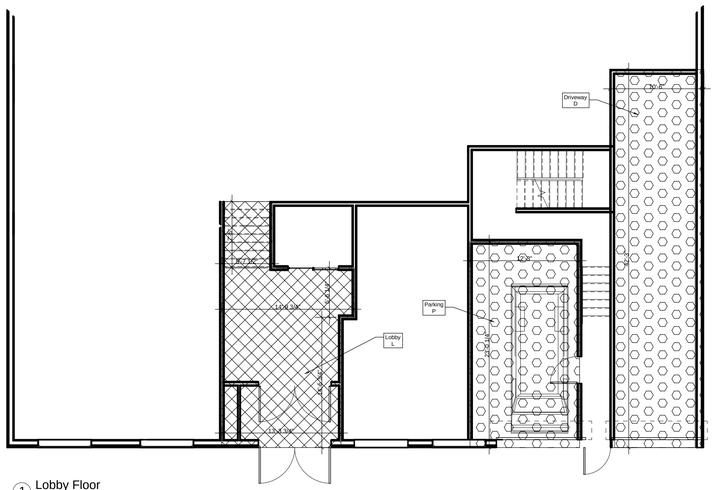
Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

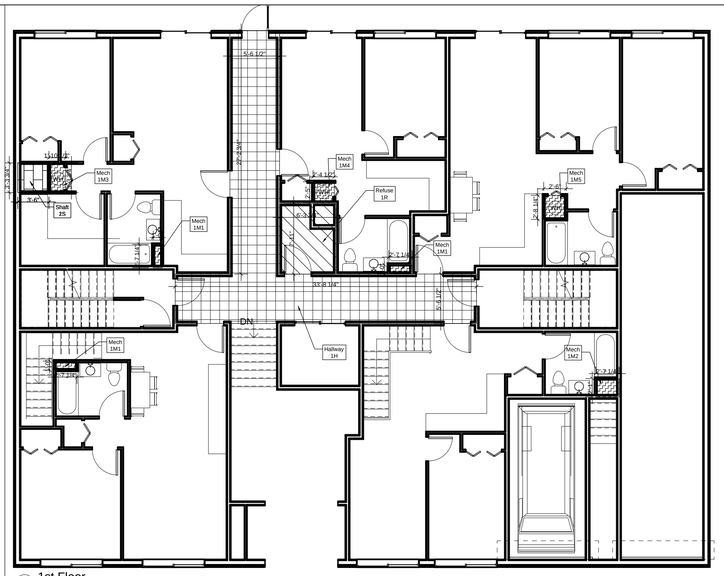
Z-100.00

Sheet:	3 of 30
Scale:	NTS

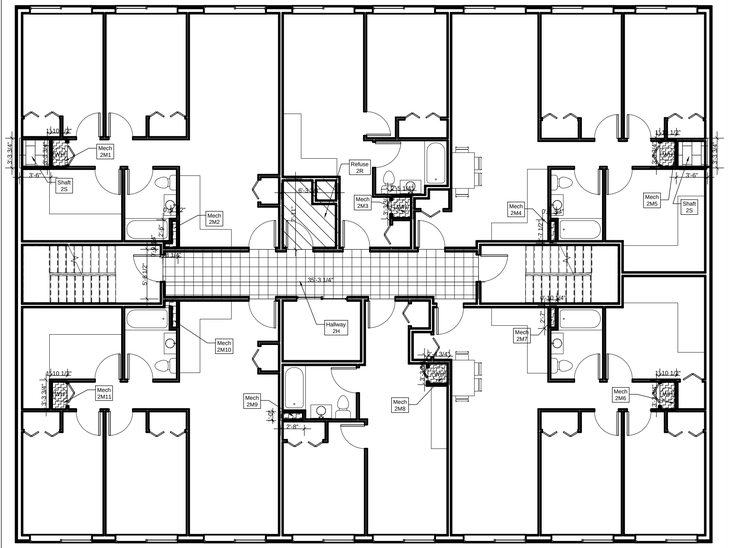
DOB Scan Sticker



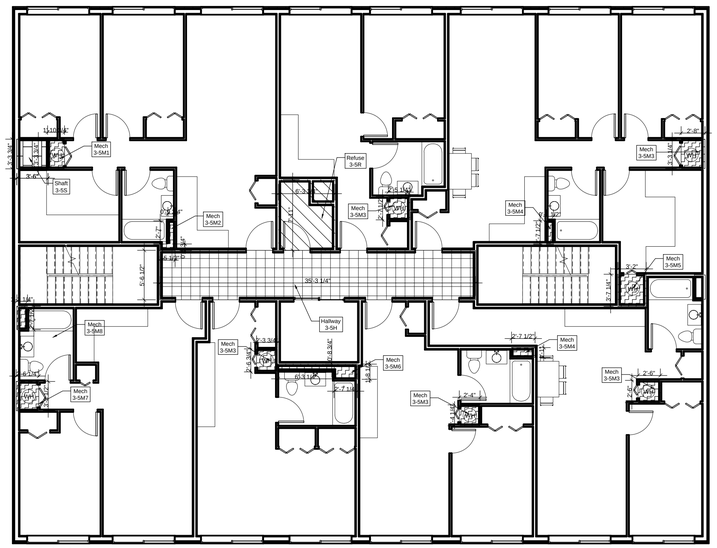
1 Lobby Floor
1/16" = 1'-0"



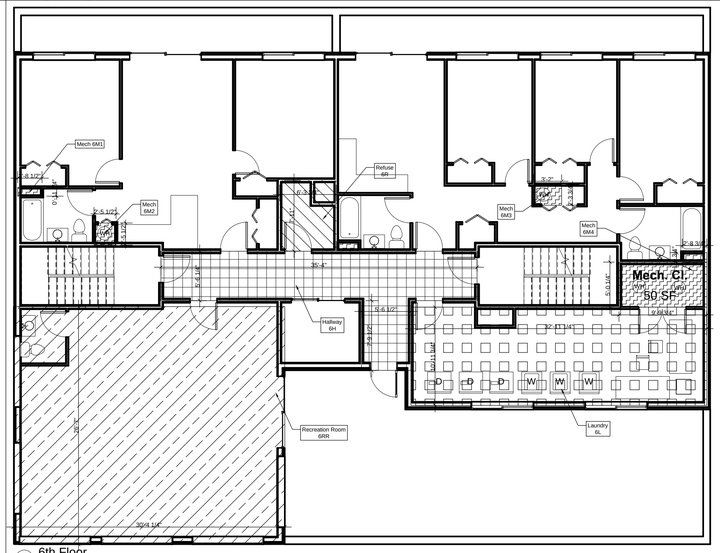
2 1st Floor
1/16" = 1'-0"



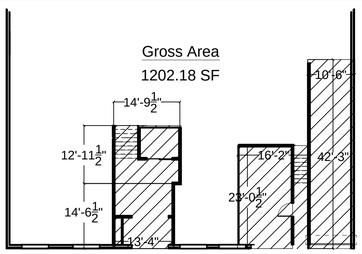
3 2nd Floor
1/16" = 1'-0"



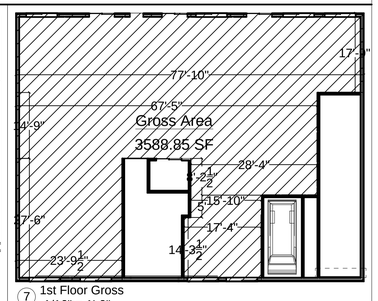
4 3rd-5th Floor
1/16" = 1'-0"



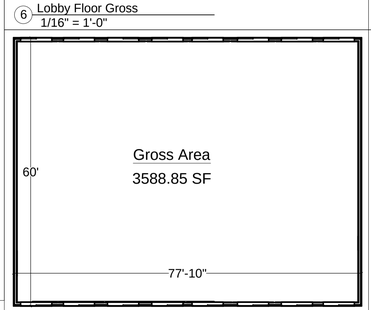
5 6th Floor
1/16" = 1'-0"



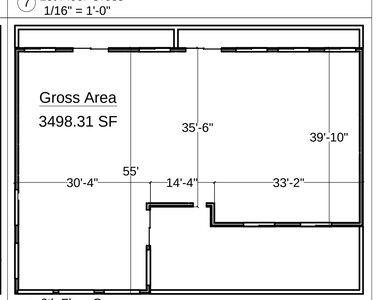
6 Lobby Floor Gross
1/16" = 1'-0"



7 1st Floor Gross
1/16" = 1'-0"



8 3-5th Floor Gross
1/16" = 1'-0"



9 6th Floor Gross
1/16" = 1'-0"

Lobby Deductions

Name	Number	Area Calculation	Allowed Max Deduction	Deduction
Lobby	L	(7'-5" x 5'-7.5") + (14'-9.75" x 5'-6.25") + (13'-3.75" x 14'-6.75") = 317.36 SF	50% + 50%	317.36 SF
Parking	P	(12'-3" x 23'-0.25") = 282.01 SF	100%	282.01 SF
Driveway	D	(42'-3" x 10'-6") = 443.63 SF	100%	446.63 SF
			Total Deduction:	1046.00 SF

Floor 1 Deductions

Name	Number	Area Calculation	Allowed Max Deduction	Deduction
Hallway	1H	(5'-6.25" x 33'-8.25") + (5'-6.5" x 27'-2.75") = 336.88 SF	50%+50%	336.88 SF
Refuse Room	1R	(7'-11" x 6'-3.75") = 49.97 SF	12 SF	12.00 SF
Shaftway	1S	(3'-3.75" x 3'-6") = 11.59 SF x 2 = 23.18	100%	23.18 SF
Mech. 1	1M1	(1'-0" x 2'-7.25") = 2.6 SF x 3 = 7.8SF	100%	7.80 SF
Mech. 2	1M2	(2'-1" x 2'-7.25") = 5.43 SF	100%	5.43 SF
Mech. 3	1M3	(1'-10.5" x 3'-3.75") = 6.21 SF	100%	6.21 SF
Mech. 4	1M4	(2'-4.5" x 2'-5") = 5.74 SF	100%	5.74 SF
Mech. 5	1M5	(2'-6" x 2'-8.25") = 6.72 SF	100%	6.72 SF
			Total Deduction:	403.96 SF

Floor 2 Deductions

Name	Number	Area Calculation	Allowed Max Deduction	Deduction
Hallway	2H	(5'-6.5" x 35'-3.25") = 195.46 SF	50%	97.73 SF
Refuse Room	2R	(7'-11" x 6'-3.75") = 49.97 SF	12 SF	12.00 SF
Shaftway	2S	(3'-3.75" x 3'-6") = 11.59 SF x 2 = 23.18	100%	23.18 SF
Mech. 1	2M1	(1'-10.5" x 3'-3.75") = 6.21 SF x 4	100%	24.84 SF
Mech. 2	2M2	(0'-9.5" x 2'-6") + (0'-9.75" x 1'-8.25") = 3.35 SF x 2	100%	6.70 SF
Mech. 3	2M3	(2'-5.25" x 3'-3.75") = 8.07 SF x 2	100%	16.14 SF
Mech. 4	2M4	(0'-10.25" x 2'-7") = 2.21 SF x	100%	6.63 SF
			Total Deduction:	187.22 SF

Floor 3-5 Deductions

Name	Number	Area Calculation	Allowed Max Deduction	Deduction
Hallway	3-5H	(5'-6.5" x 35'-3.25") = 195.46 SF	50%	97.73 SF
Refuse Room	3-5R	(7'-11" x 6'-3.75") = 49.97 SF	12 SF	12.00 SF
Shaftway	3-5S	(3'-3.75" x 3'-6") = 11.59 SF x 2 = 23.18	100%	23.18 SF
Mech. 1	3-5M1	(1'-10.75" x 3'-3.75") = 6.28 SF x 3 = 18.84 SF	100%	18.84 SF
Mech. 2	3-5M2	(0'-9.75" x 2'-7") + (1'-5.5" x 0'-8.75") = 3.16 SF x 3 = 9.48 SF	100%	9.48 SF
Mech. 3	3-5M3	(1'-2.25" x 2'-7.5") = 3.12 SF	100%	3.12 SF
Mech. 4	3-5M4	(2'-7.5" x 0'-9.5") = 2.08 SF	100%	2.08 SF
Mech. 5	3-5M5	(3'-3.25" x 2'-8") = 8.72 SF x 2 = 17.44 SF	100%	17.44 SF
Mech. 6	3-5M6	(3'-2" x 3'-7.25") = 11.41 SF	100%	11.41 SF
Mech. 7	3-5M7	(2'-4" x 2'-4.25") = 5.49 SF x 2 = 11.86 SF	100%	11.86 SF
Mech. 8	3-5M8	(1'-8.5" x 2'-7.25") + (6'-3.25" x 0'-8.75") = 9.02 SF	100%	9.02 SF
			Total Deduction:	216.16 SF

Floor 6 Deductions

Name	Number	Area Calculation	Allowed Max Deduction	Deduction
Hallway	6H	(5'-6.25" x 35'-4") + (7'-9.5" x 5'-6.5") = 238.25 SF	100%	238.25 SF
Refuse Room	6R	(7'-11" x 6'-3.75") = 49.97 SF	12 SF	12.00 SF
Mech. 1	6M1	(2'-8.5" x 0'-11.75") = 2.65 SF	100%	2.65 SF
Mech. 2	6M2	(2'-5.5" x 2'-5.5") = 6.04 SF	100%	6.04 SF
Mech. 3	6M3	(3'-2" x 2'-3.75") = 7.32 SF	100%	7.32 SF
Mech 4	6M4	(5'-0.25" x 9'-9.75") = 49.27 SF	100%	49.27 SF
Laundry	6L	(10'-11.75" x 32'-11.25") = 361.63 SF	100%	361.63 SF
Recreation	6RR	(26'-7" x 30'-4.25") = 806.91 SF	772.2 SF	772.20 SF
			Total Deduction:	1449.36 SF

Gross Area

Lobby Gross	L	(12'-11.25" x 14'-9.75") + (13'-3.75" x 14'-6.75") + (16'-2" x 23'-0.25") + (42'-3" x 10'-6.25") = 1202.18 SF
Floor 1 Gross	1	(77'-10" x 17'-9") + (67'-4.75" x 14'-9") + (27'-6" x 23'-9.25") + (28'-4" x 8'-2.5") + (15'-10" x 5'-0") + (17'-3.75" x 14'-3.75") = 3588.85 SF
Floor 2-5 Gross	2-5	(77'-10" x 60'-0") = 4670 SF
Floor 6 Gross	6	(30'-4" x 55'-0") + (14'-4" x 35'-6") + (33'-2" x 39'-10") = 3498.31 SF

Level	Gross SF	Deduction SF	Net SF
L	1202.18 SF	1046.00 SF	156.18 SF
1	3588.85 SF	403.96 SF	3184.89 SF
2	4670.00 SF	187.22 SF	4482.78 SF
3	4670.00 SF	216.16 SF	4453.84 SF
4	4670.00 SF	216.16 SF	4453.84 SF
5	4670.00 SF	216.16 SF	4453.84 SF
6	3498.31 SF	1449.36 SF	2048.95 SF
		Total Area	23234.32 < 23400 OK

Room Legend

- Hallway
- Lobby
- Refuse Room
- Shaftway
- Mechanical
- Recreation Room
- Parking / Driveway
- Laundry Room

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

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Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Deductions

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

Z-101.00

Sheet:	4 of 30
Scale:	As Indicated

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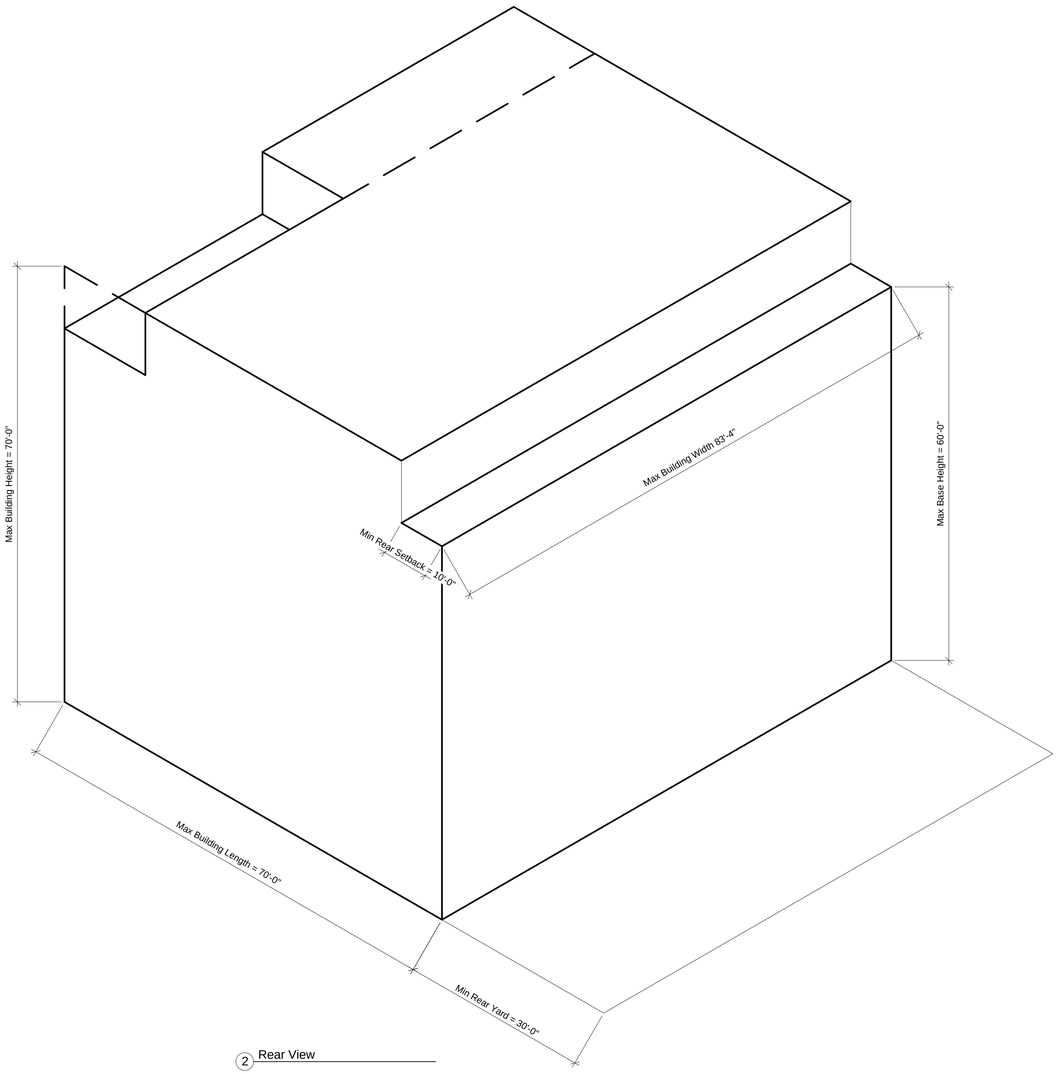
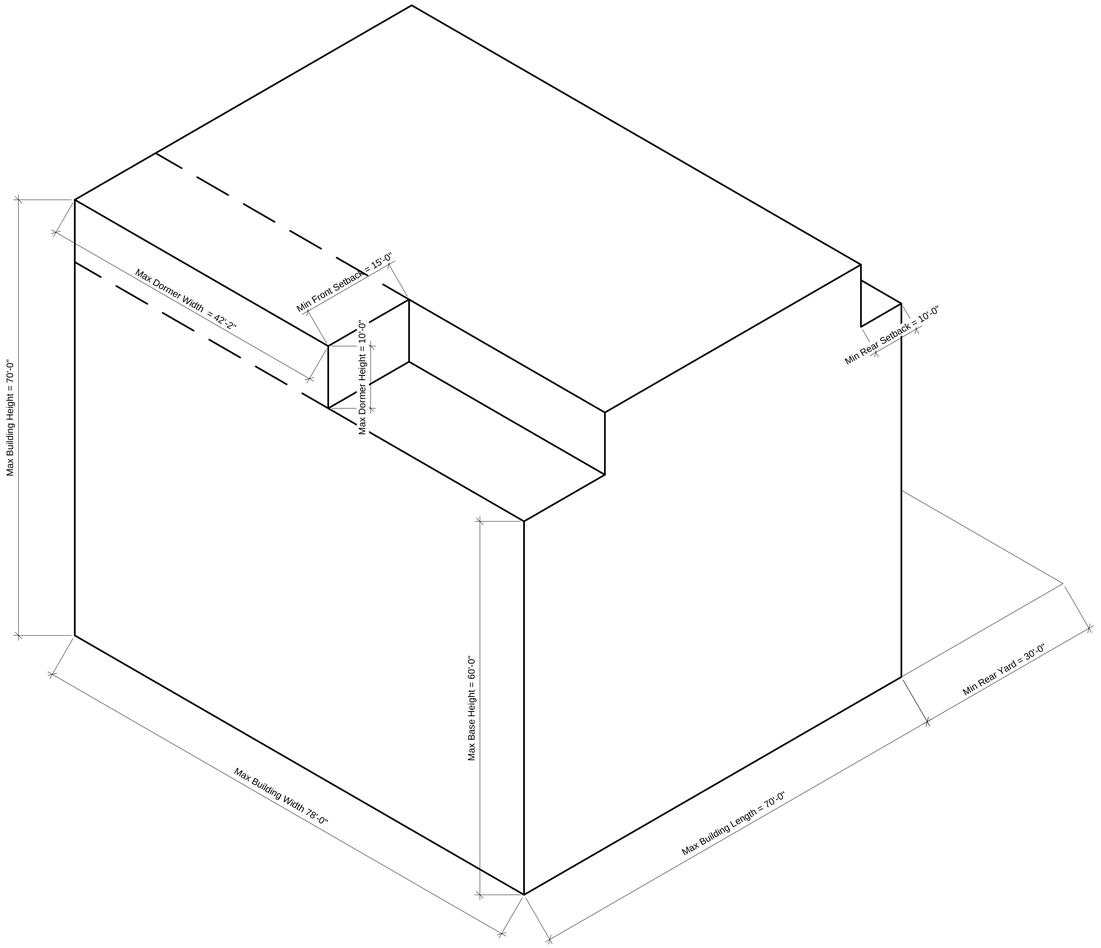


2 Rear View



1 Front View

818 Lexington

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License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Zoning Envelope Diagram

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

Z-102.00

Sheet:	5 of 30
Scale:	3/32" = 1'-0"

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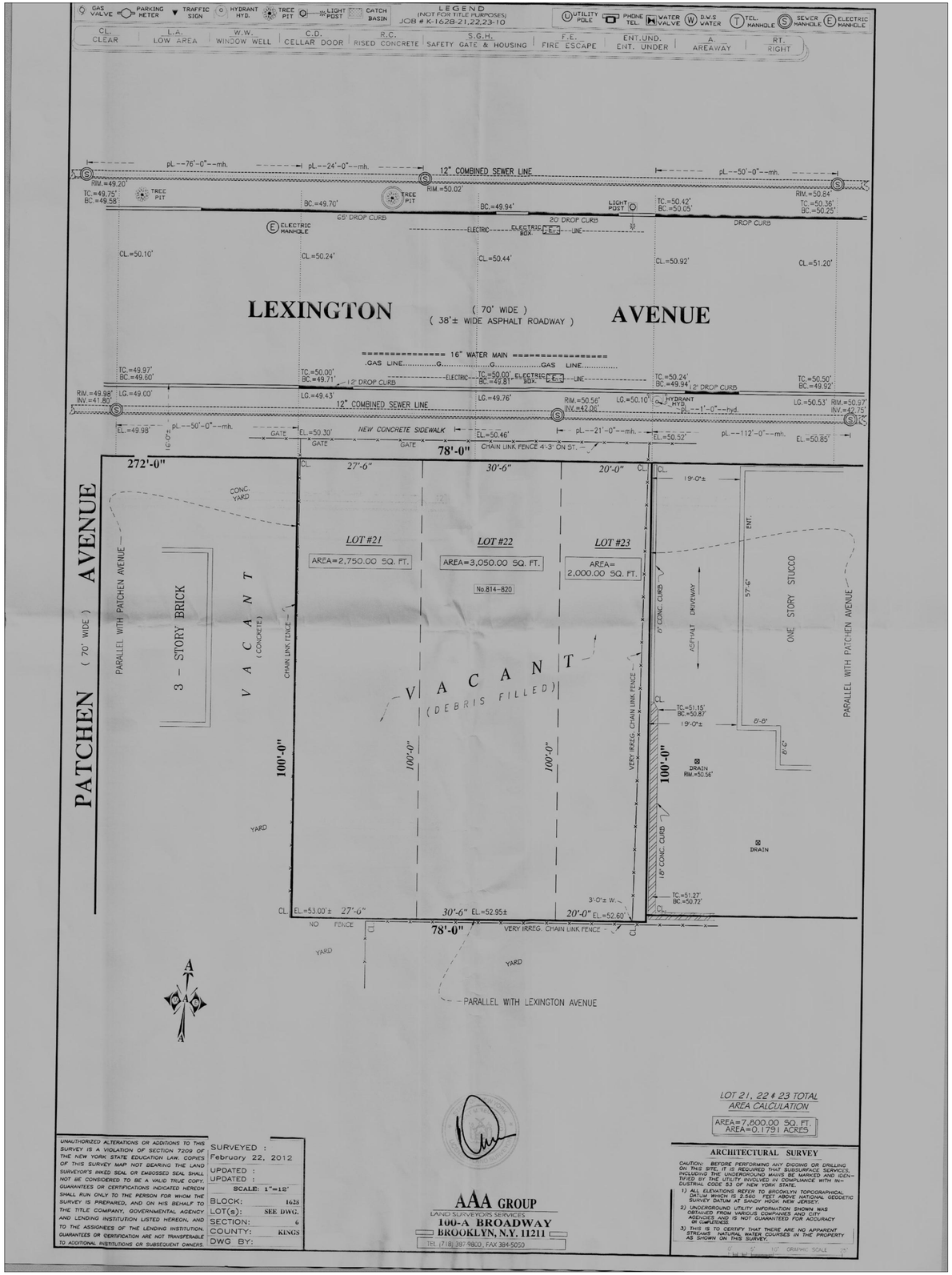

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License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Architectural Survey

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

Z-103.00

Sheet:	6 of 30
Scale:	3/32" = 1'-0"

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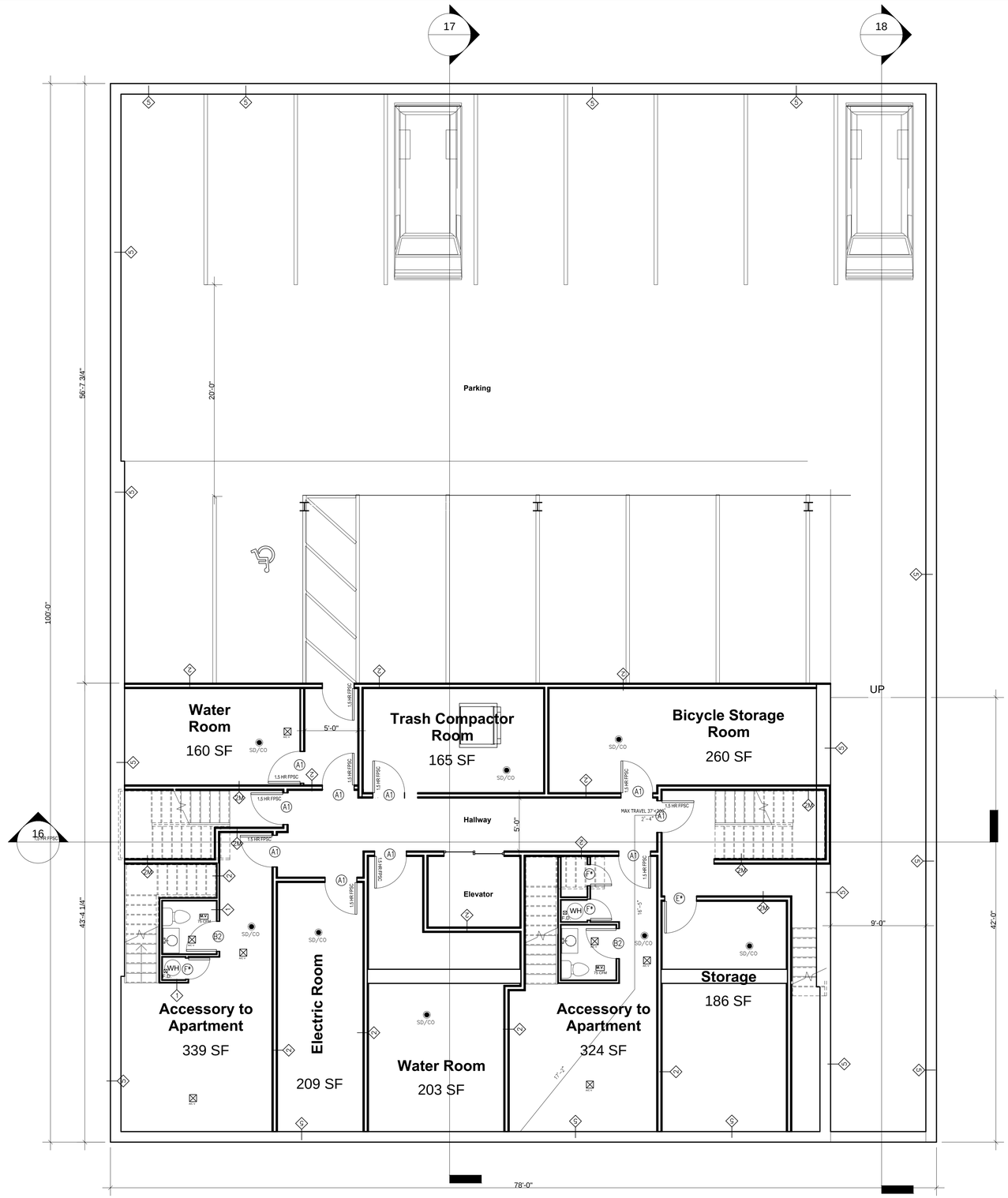


Note:
Sound transmission of space for HVAC unit to comply with BC 1207 by wall types

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

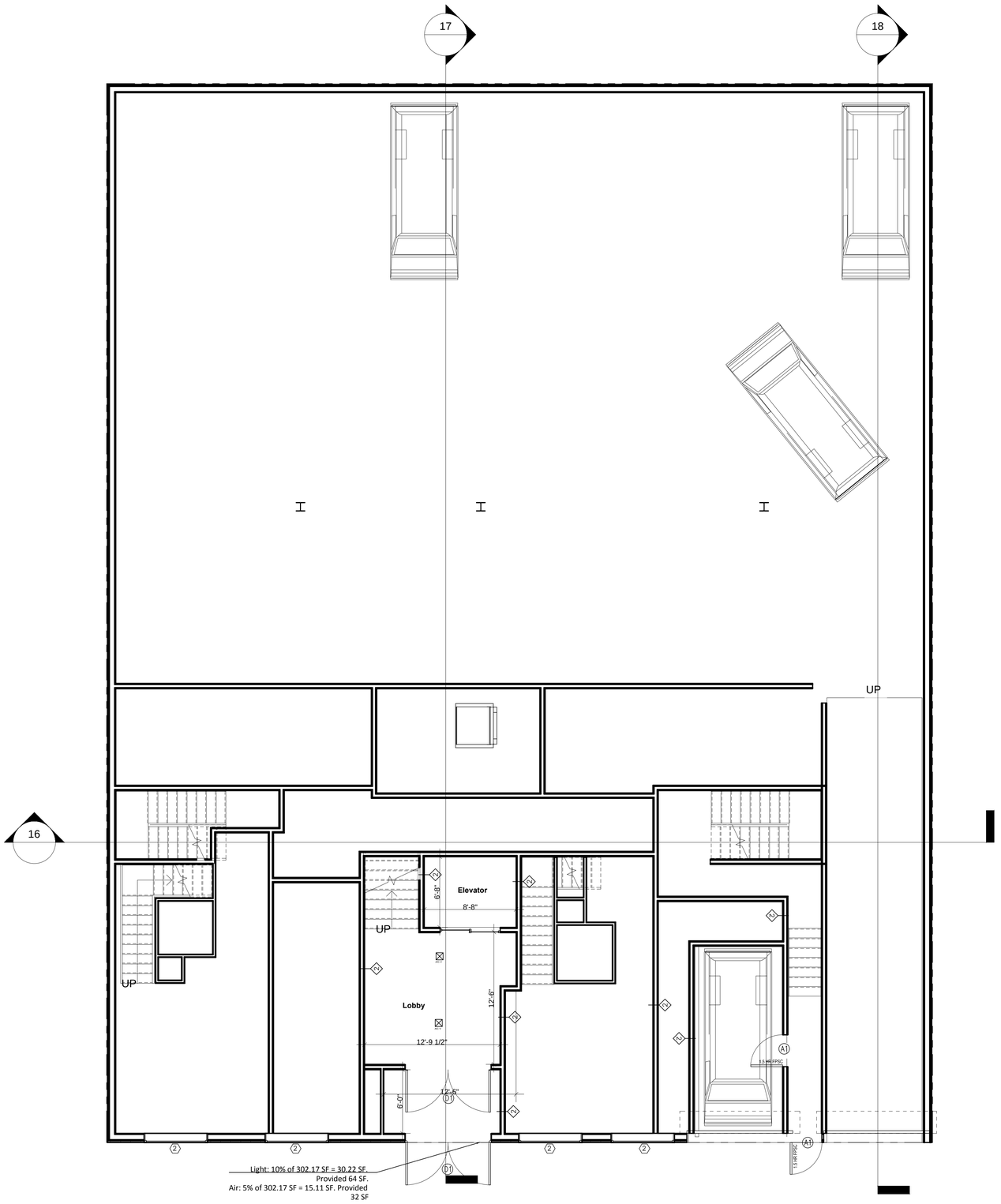
Floor Plan: Cellar

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-100.00

Sheet:	7 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



Note:
Sound transmission of space for HVAC unit to comply with BC 1207 by wall types

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

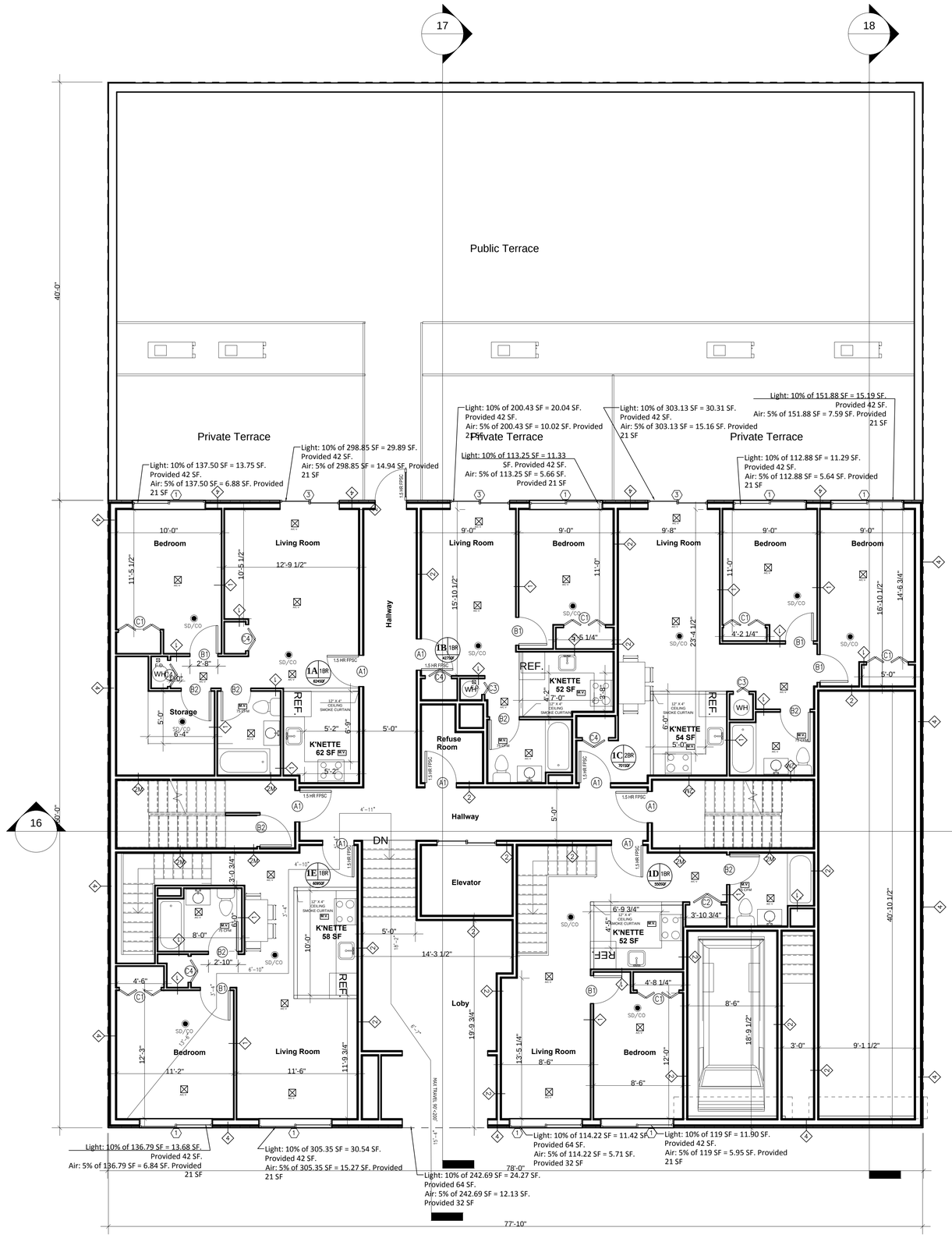
Floor Plan: Lobby Floor

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-101.00

Sheet:	8 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



Note:
Sound transmission of space for HVAC unit to comply with BC 1207 by wall types

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

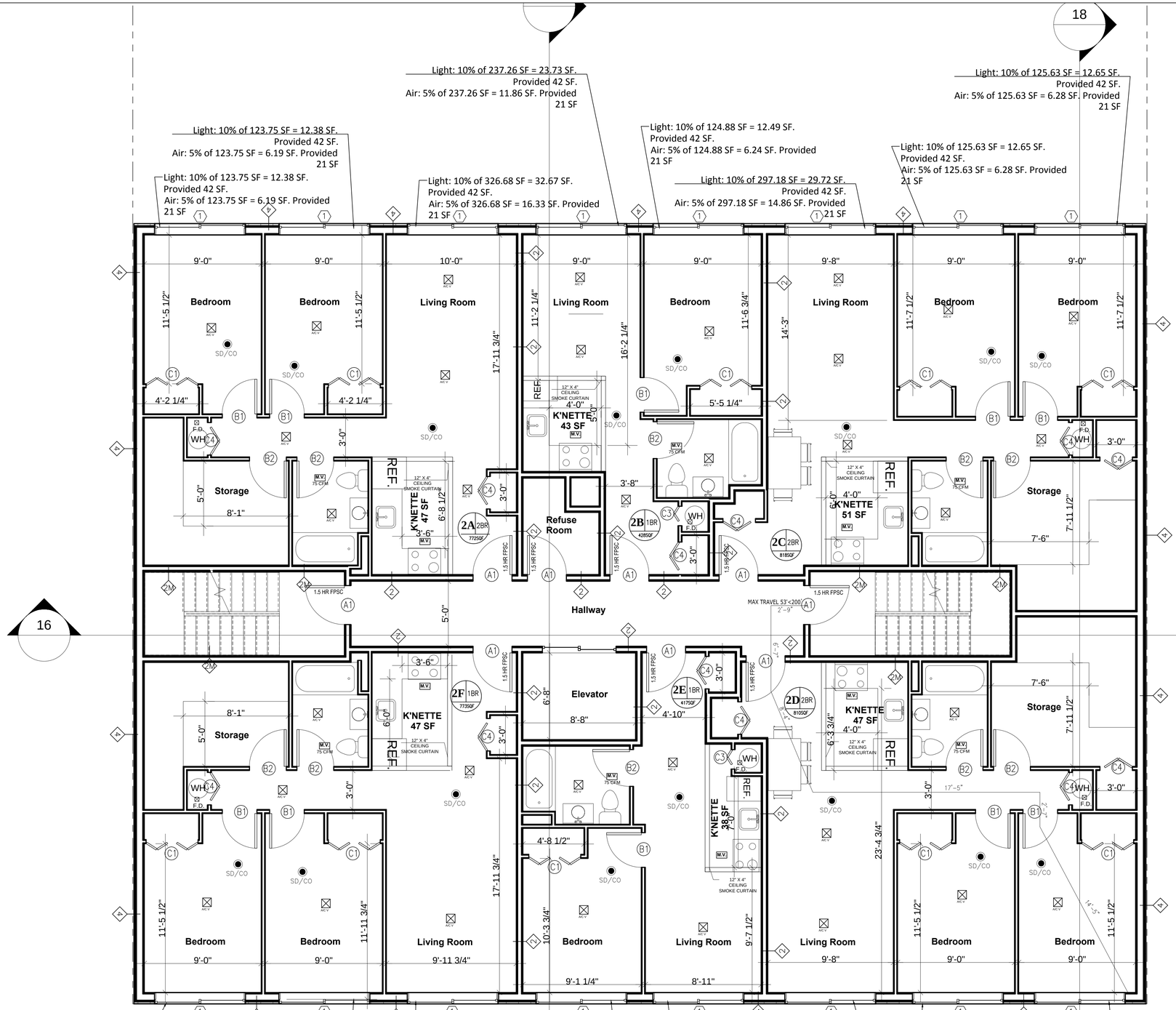
Floor Plan: 1st Floor

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-102.00

Sheet:	9 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



Note:
Sound transmission of space for HVAC unit to comply with BC 1207 by wall types

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

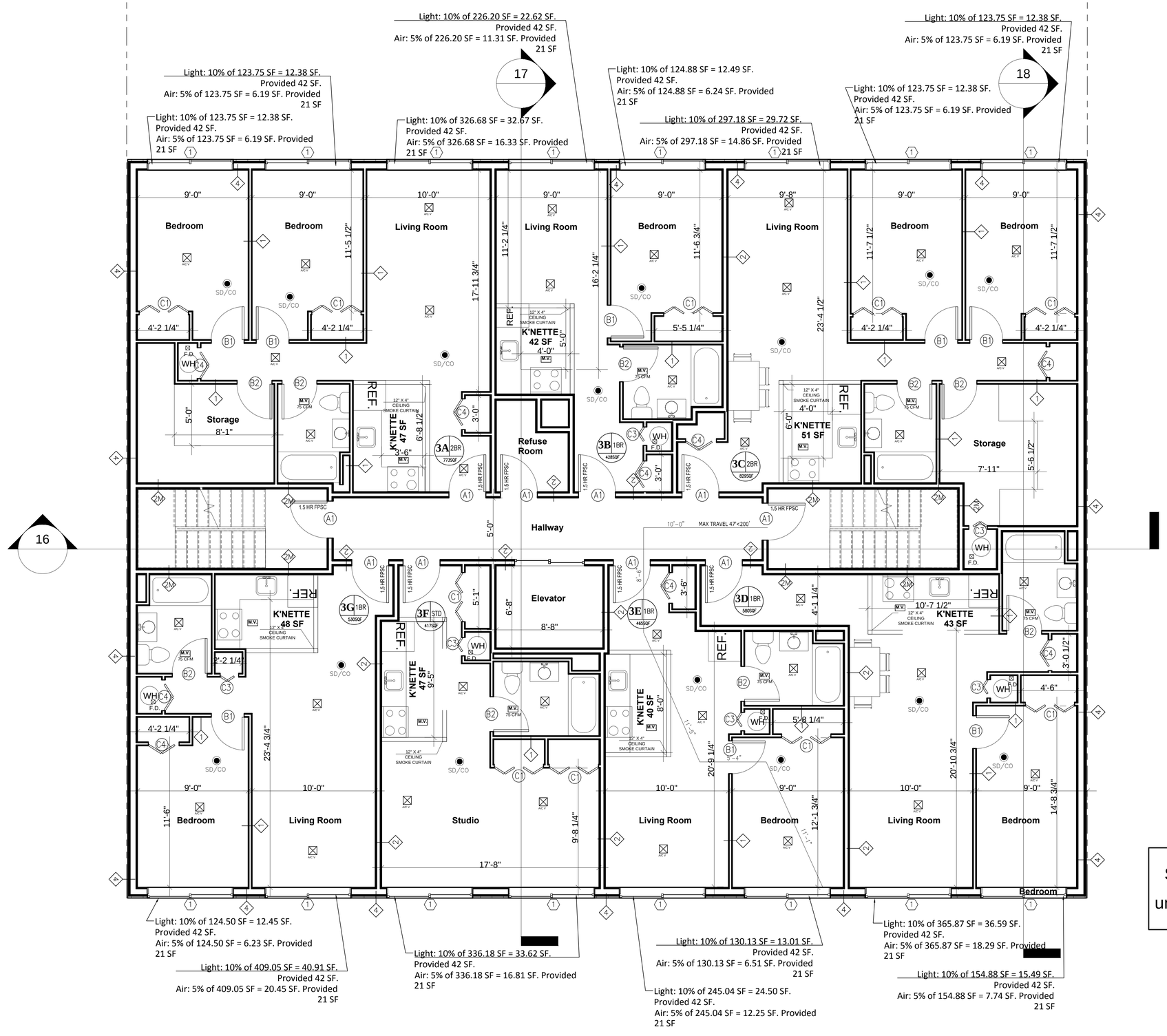
Floor Plan:
2nd Floor

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-103.00

Sheet:	10 of 30
Scale:	1/4" = 1'-0"

DOB Scan Sticker



Note:
Sound transmission of space for HVAC unit to comply with BC 1207 by wall types

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

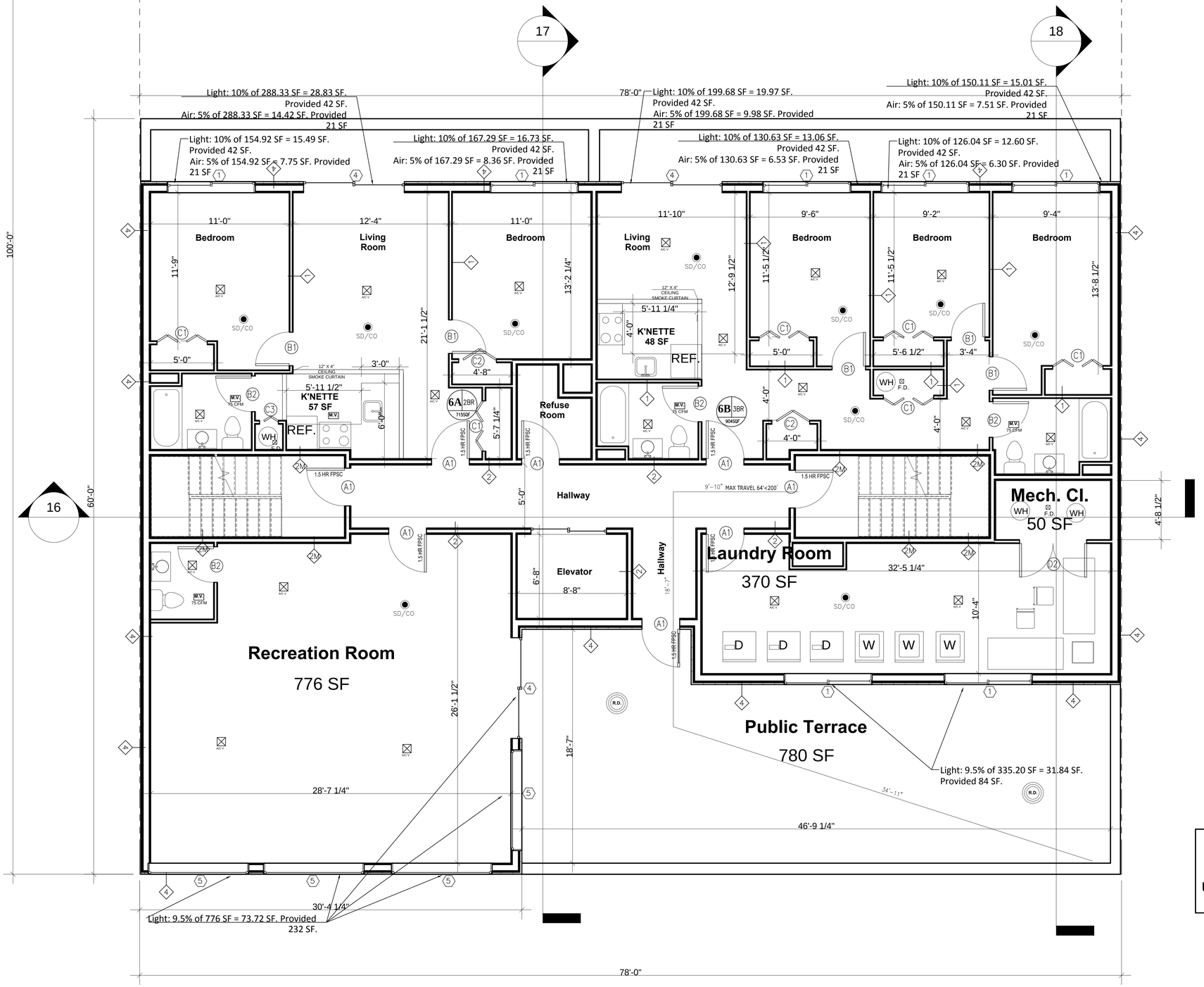
Floor Plan: 3rd - 5th Floor

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-104.00

Sheet:	11 of 30
Scale:	1/4" = 1'-0"

DOB Scan Sticker



Note:
Sound transmission of space for HVAC unit to comply with BC 1207 by wall types

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

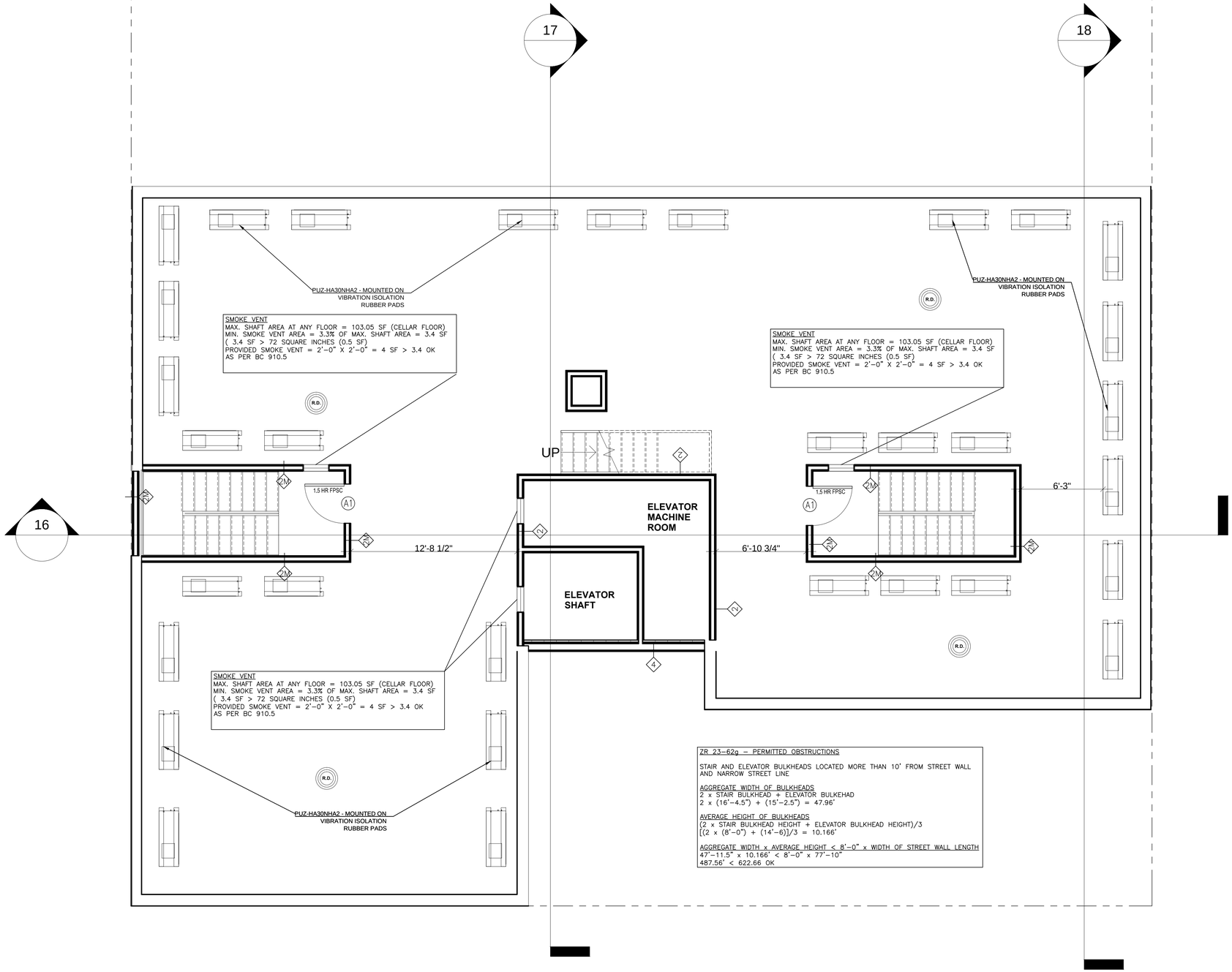
Floor Plan: 6th Floor

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-105.00

Sheet:	12 of 30
Scale:	1/4" = 1'-0"

DOB Scan Sticker



818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

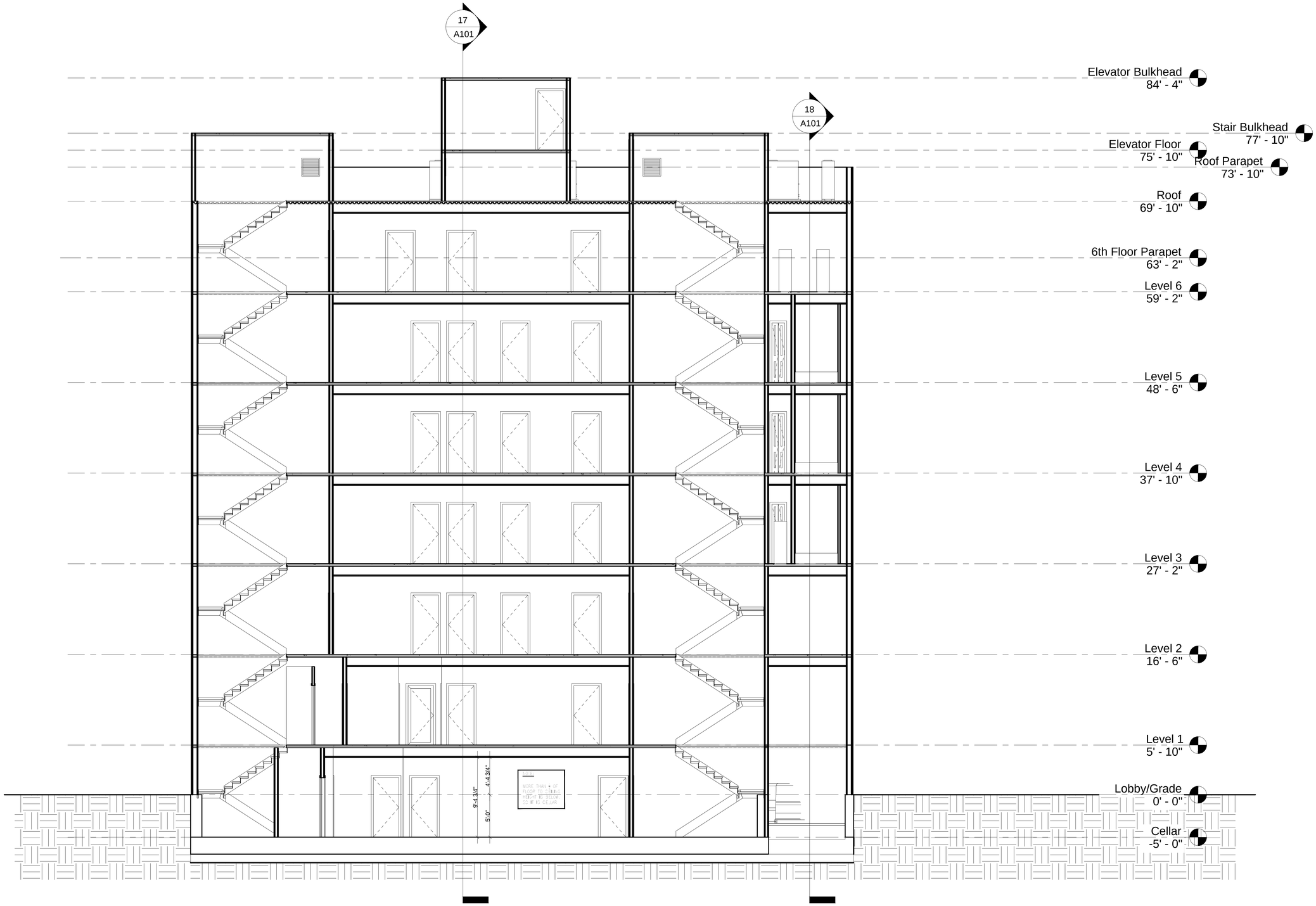
Floor Plan: Roof

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-106.00

Sheet:	13 of 30
Scale:	1/4" = 1'-0"

DOB Scan Sticker



818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

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New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

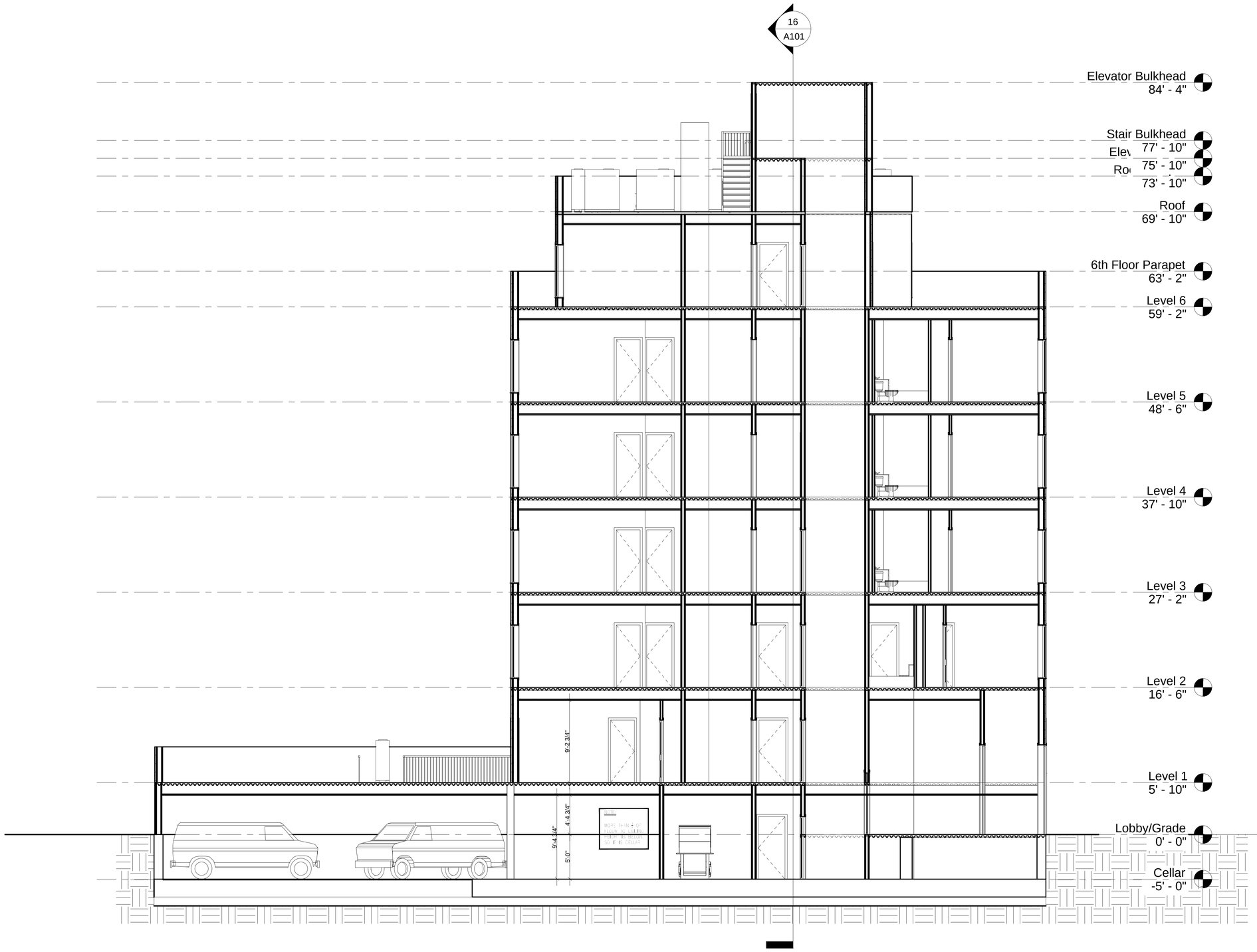
Section: 1

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-107.00

Sheet:	14 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

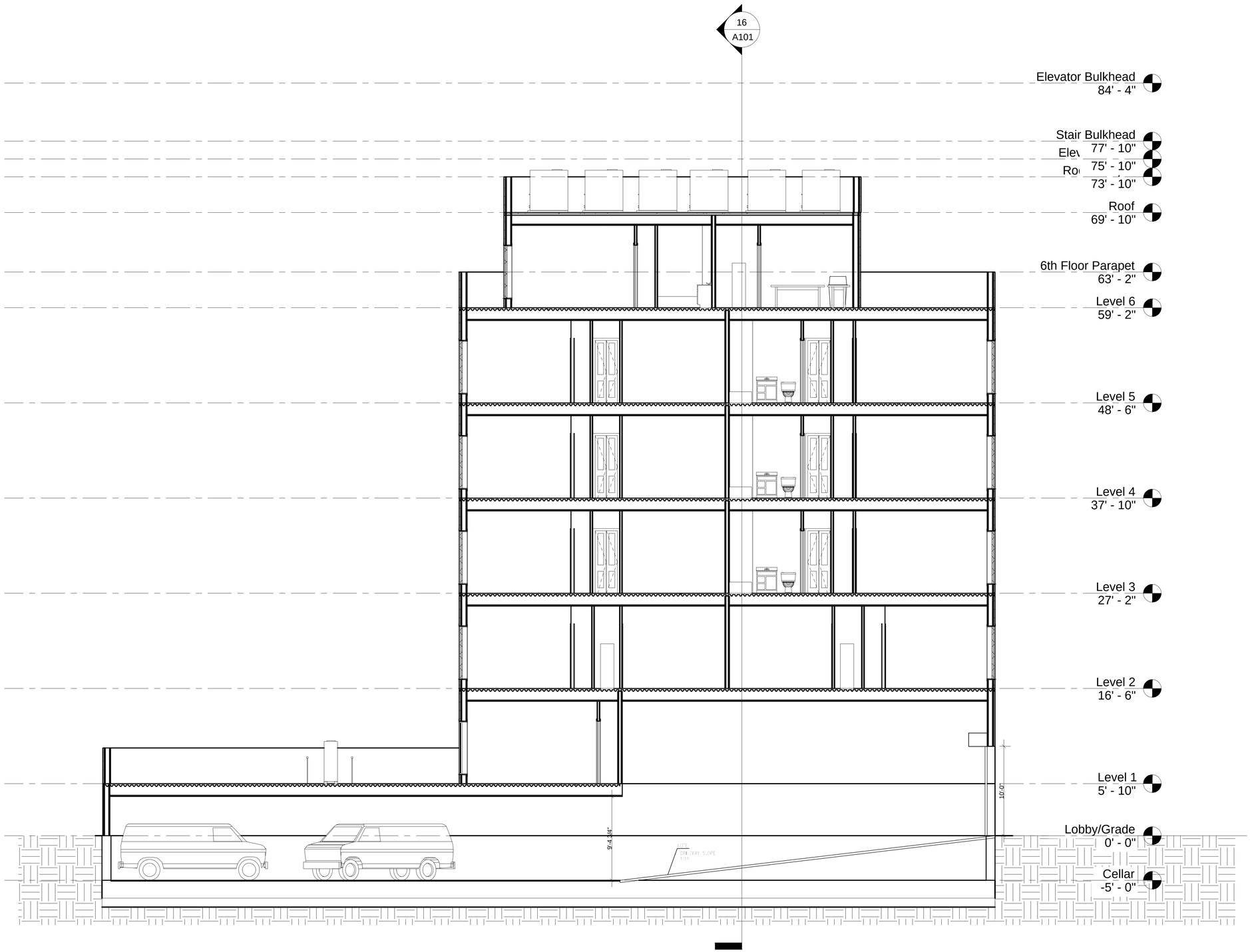
Section: 2

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-108.00

Sheet:	15 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Section: 3

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-109.00

Sheet:	16 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

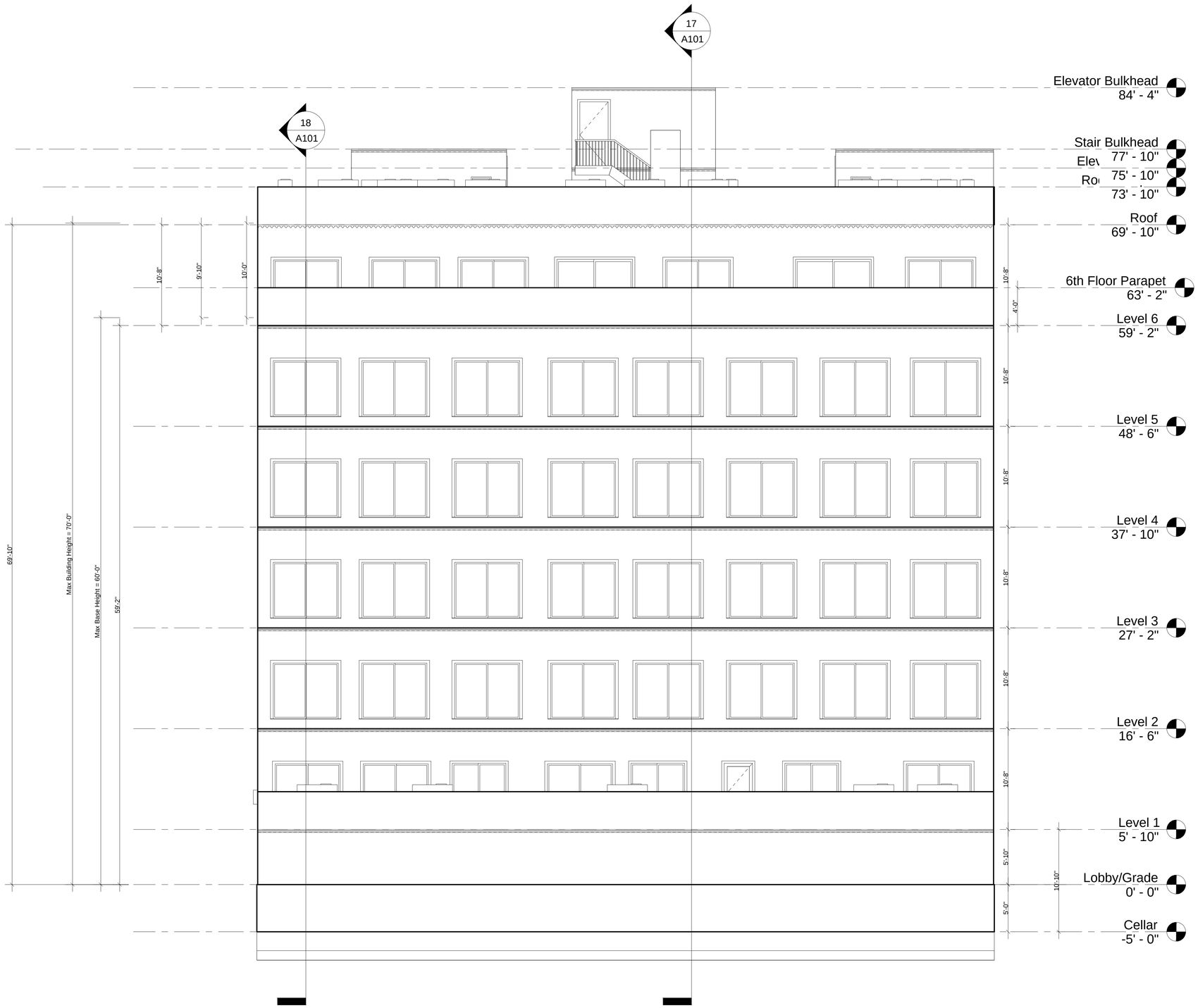
Elevation:
Lexington Ave

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-110.00

Sheet:	17 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

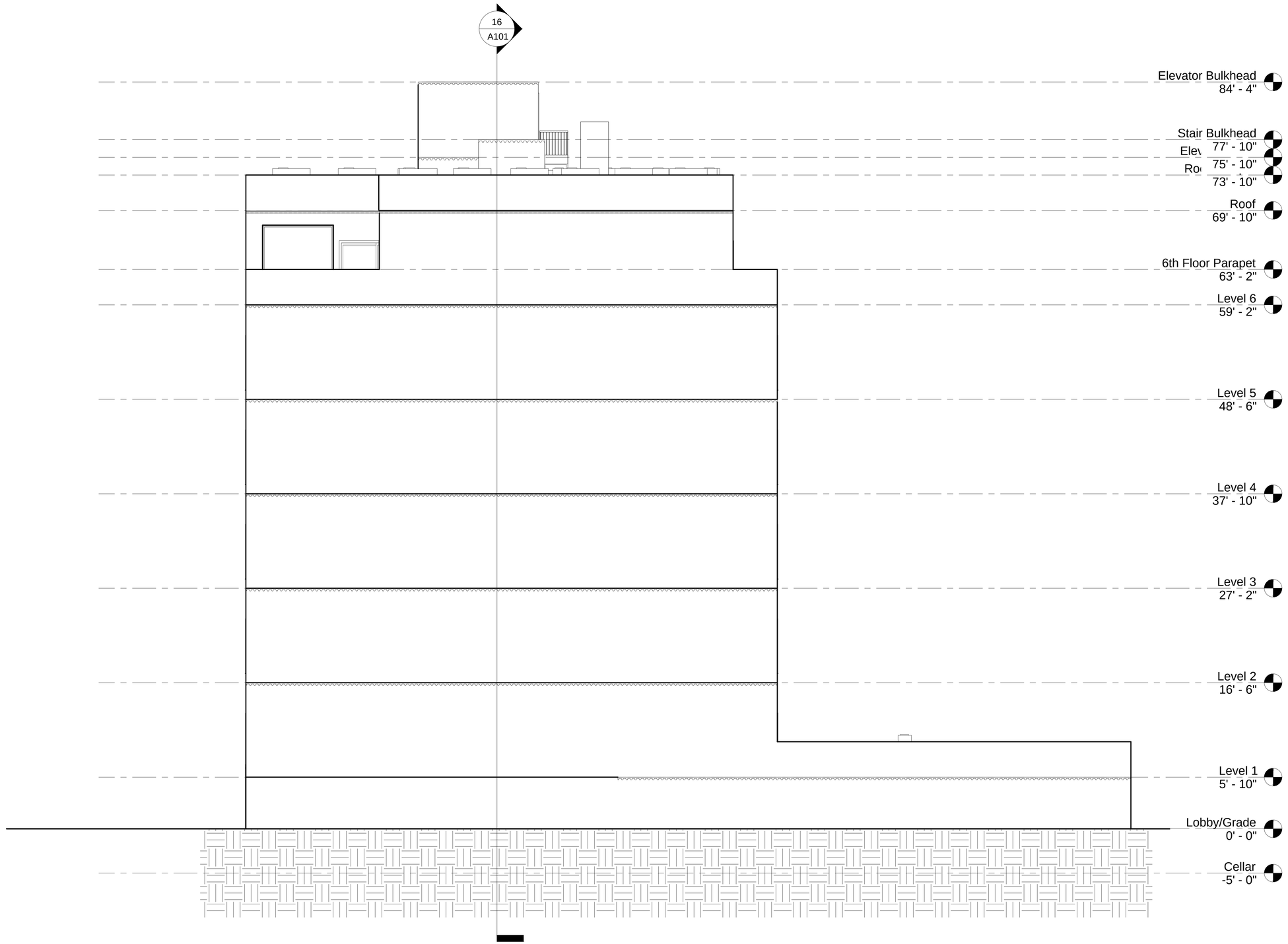
Elevation: Quincy St.

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-111.00

Sheet:	18 of 30
Scale:	3/16" = 1'-0"

DOB Scan Sticker



818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @
818 Lexington Ave.
Brooklyn, NY

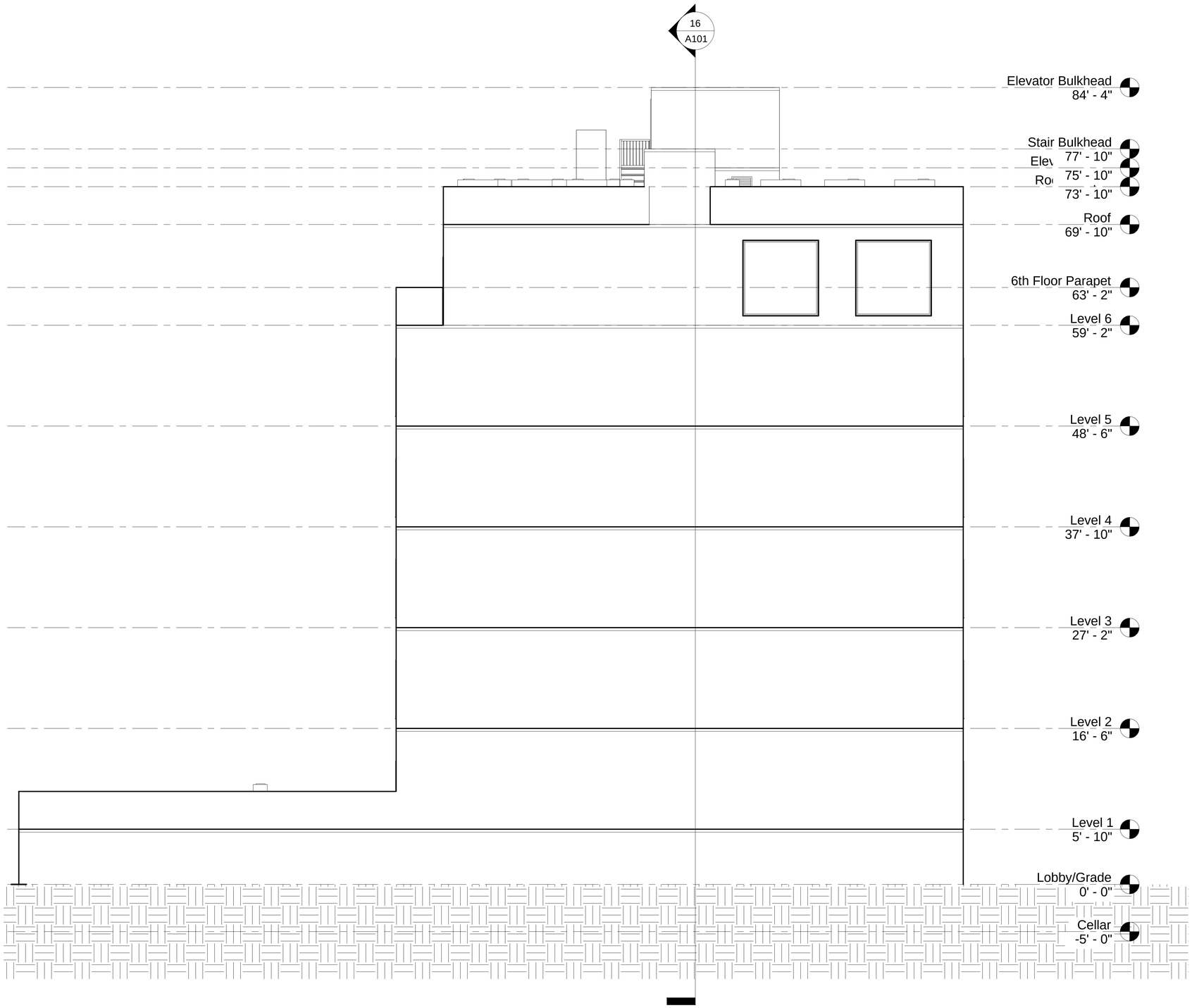
Elevation: Patchen Ave.

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-112.00

Sheet:	19 of 30
Scale:	NTS

DOB Scan Sticker



818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

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Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Elevation: Ralph Ave.

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-113.00

Sheet:	20 of 30
Scale:	NTS

DOB Scan Sticker

WINDOW/PATIO DOOR SCHEDULE: 85 SKILLMAN STREET

	WIDTH	HEIGHT	TYPE
1	62.5"	53"	DOUBLE GLAZED CASEMENT WINDOW. 35 dB(A) ATTENUATION
2	46"	53"	DOUBLE GLAZED CASEMENT WINDOW. 35 dB(A) ATTENUATION
3	16"	30	DOUBLE GLAZED FIXED WINDOW. 35 dB(A) ATTENUATION
T1	36"	81"	PATIO DOOR. AREA = 20.25 SF

DOOR SCHEDULE: 85 SKILLMAN STREET

	WIDTH	HEIGHT	TYPE	REMARKS
A	3'-0"	7'-0"	METAL	APARTMENT ENTRANCE 1-1/2 HOUR RATED FIRE-PROOF SELF CLOSING (FPSC) - MIN. STC = 35 MDL51a PEEPHOLE
B1	3'-0"	7'-0"	WOOD	INTERIOR DOOR
B*	2'-11"	7'-0"	WOOD	INTERIOR DOOR
C1	2'-2"	7'-0	WOOD	CLOSET DOOR
C2	3'-0"	7'-0"	WOOD	CLOSET DOOR
C3	2'-8"	7'-0"	WOOD	CLOSET DOOR
D	3'-0"	7'-0"	METAL	1 1/2 HOUR RATED FIRE-PROOF SELF CLOSING (FPSC) - MIN. STC = 35
D1	3'-0"	8'-0"	METAL	EXTERIOR DOOR 1 1/2 HOUR RATED FIRE-PROOF SELF CLOSING (FPSC) - MIN. STC = 35
E	6'-0"	8'-0"	GLASS/MT	EXTERIOR MAIN DOOR SELF CLOSING CUSTOM DOUBLE GLAZED TEMPERED GLASS
F	3'-0"	7'-0"	GLASS/MT	INTERIOR LOBBY ENTRANCE SELF CLOSING CUSTOM DOUBLE GLAZED TEMPERED GLASS

NOTES:
-P.O./A.S.- PER OWNER/ ARCHITECT SPECIFICATION
- ALL DOORS AS PER OWNER'S SELECTION UNLESS OTHERWISE NOTED.
- ALL DOORS TO HAVE CUTOUTS FOR HARDWARE AS SELECTED BY OWNER.
- ALL DOORS TO BE PROVIDE WITH WEATHER- STRIPPING AND INTERLOCKING METAL SADDLES.
- ALL EXTERIOR WOOD DOORS TO BE WATER- RESISTANT PRESERVATIVE TREATED.
- ALL APARTMENT ENTRANCE DOORS TO BE PROVIDED WITH B.S.A. APPROVED TYPE PEEPHOLES.

NOTE : ALL DOORS ON ACCESSIBLE ROUTES THROUGHOUT APARTMENTS TO HAVE LEVER TYPE DOOR HANDLES TO COMPLY AS PER A117.1-2003

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

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Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @
818 Lexington Ave.
Brooklyn, NY

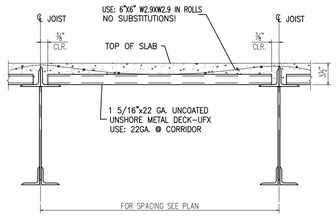
Window & Door Schedule

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-114.00

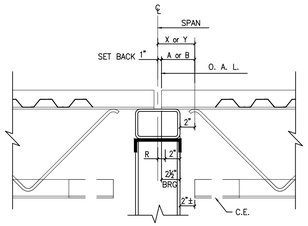
Sheet:	21 of 30
Scale:	NTS

DOB Scan Sticker



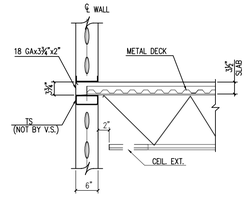
TYPICAL SLAB CONSTRUCTION DETAIL

DETAIL 1

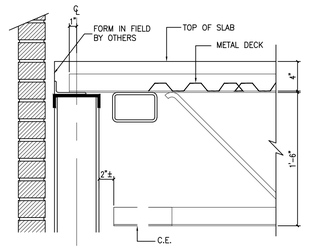


TYP. COMP. JOIST TO WALL CONN. DETAIL

DETAIL 2



DETAIL 3



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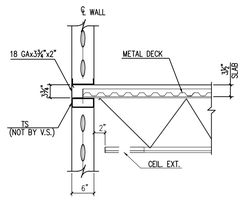

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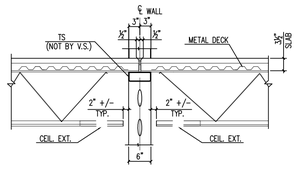

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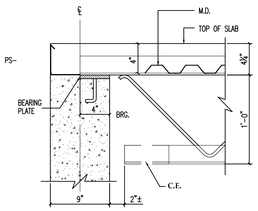

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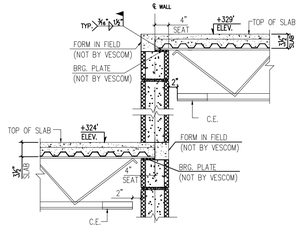
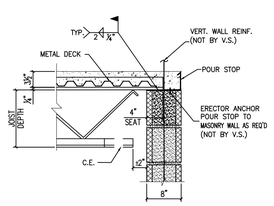
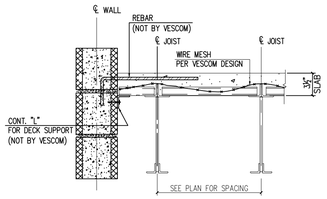


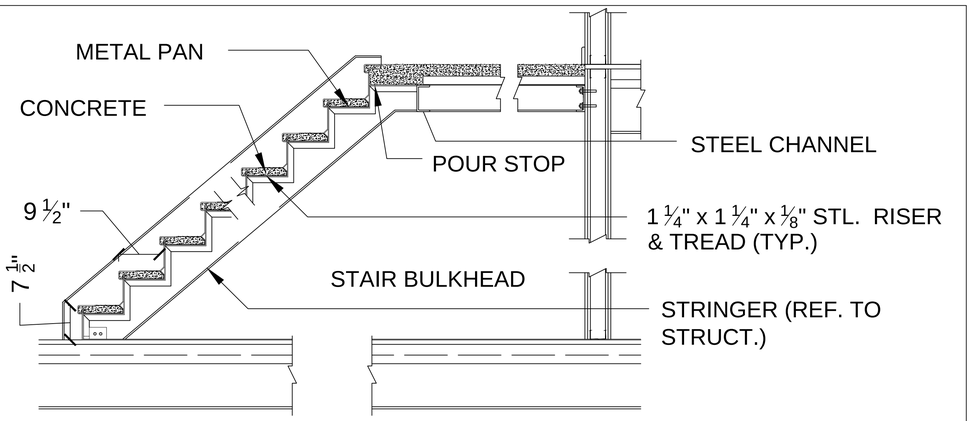
DETAIL 8



DETAIL 9



DETAIL 10



STEEL PAN STAIR DETAIL
Scale: NTS

NOTE: STAIR TO BE BUILT OF NON-COMBUSTIBLE MATERIALS AS PER BC 1009.5

818 Lexington

Revisions		
No.	Description	Date
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Client:

Jam 818 Lex LLC

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Brooklyn, NY 11208

Consultants:

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366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

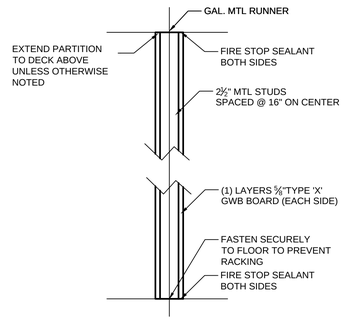
Details: General

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-115.00

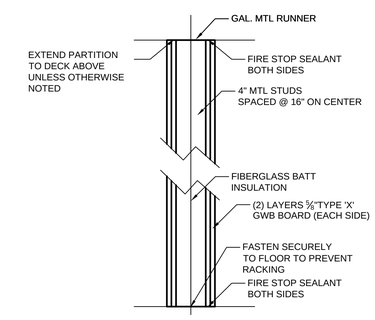
Sheet:	22 of 30
Scale:	NTS

DOB Scan Sticker



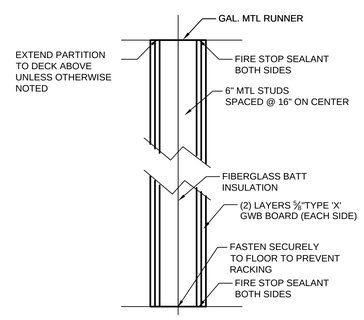
1 (1) HR PARTITION TYPE

WALL TYPE 1



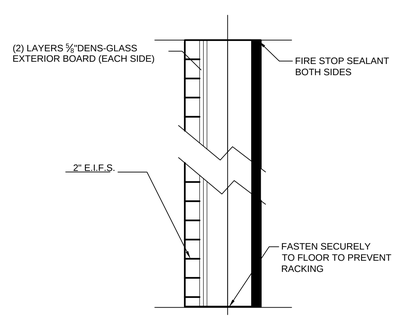
2 (2) HR PARTITION TYPE
DEMISING WALL

WALL TYPE 2 & 2M



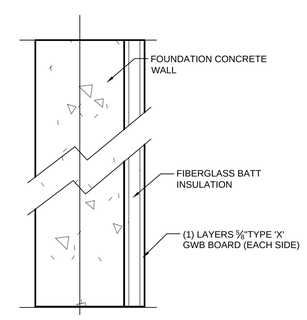
3 (2) HR PARTITION TYPE
BEARING WALL

WALL TYPE 3 & 3M



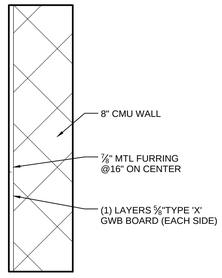
4 (2) HR EXTERIOR TYPE
BEARING WALL

WALL TYPE 4 & 4M



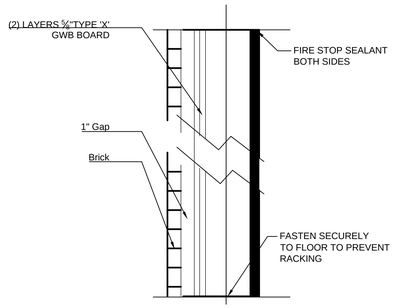
5 (2) HR PARTITION TYPE
FOUNDATION WALL

WALL TYPE 5



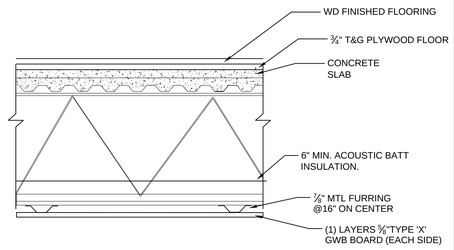
6 (2) HR BEARING TYPE
CMU WALL

WALL TYPE 6



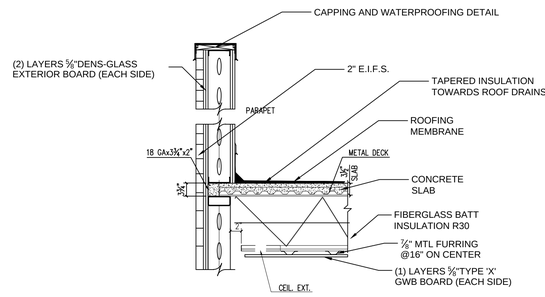
7 (2) HR EXTERIOR TYPE
BEARING WALL

WALL TYPE 7



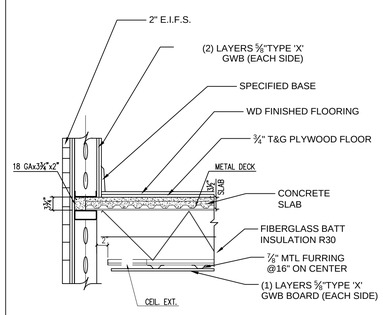
FLOOR CEILING ASSEMBLY
2 HR FIRE RATING

FLOOR CEILING DETAIL



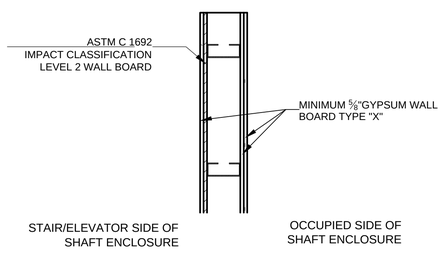
ROOF CEILING ASSEMBLY
1 HR FIRE RATING

ROOF/CEILING DETAIL



WALL/FLOOR DETAIL

ALL TYPE M WALLS



Scale: NTS

2 HR. SECTION THROUGH IMPACT RESISTANT SHAFT ENCLOSURE WALL (MASONARY EQUIVALENT)

WALL TYPE 1 DENOTES ONE HR RATED INTERIOR PARTITION CONSTRUCTED OF 22 GA. 2-5/8" MTL. STUDS @ 16" O.C. WITH ONE LAYER 5/8" G.W.B TYPE 'x' EACH SIDE. IN WET AREAS USE M.R. G.W.B. (GA FILE#: WP 1200) BSA# 171-52SM

WALL TYPE 2 DENOTES TWO HR RATED - DEMISING WALL CONSTRUCTED OF 20 GA. 4" MTL. STUDS @ 16" O.C. WITH TWO LAYERS 5/8" G.W.B TYPE 'x' EACH SIDE. 3 1/2" GLASS FIBER FRICTION FIT INSULATION IN STUD SPACE. IN WET AREAS USE M.R. G.W.B. (GA FILE#: WP 1522) BSA# 301-60SM - STC RATING =55-59 AS PER ASTM E90

WALL TYPE 2M DENOTES TWO HR RATED - MASONRY EQUIVALENT AS PER RCNY 1014-01 EXIT SHAFT ENCLOSURE CONSTRUCTED OF 20 GA. 4" MTL. STUDS @ 16" O.C. WITH TWO LAYERS 5/8" G.W.B TYPE 'x' ON THE OCCUPIED SIDE, AND ONE LAYER OF 5/8" G.W.B TYPE 'X' WITH ONE LAYER OF ASTM C 1629 IMPACT CLASSIFICATION LEVEL 2 WALL BOARD ON THE INTERIOR SIDE OF A SHAFT ENCLOSURE. 3 1/2" GLASS FIBER FRICTION FIT INSULATION IN STUD SPACE. IN WET AREAS USE M.R. G.W.B. (GA FILE#: WP 1522) BSA# 301-60SM - STC RATING =55-59 AS PER ASTM E90

WALL TYPE 3 DENOTES TWO HR RATED - DEMISING WALL CONSTRUCTED OF 20 GA. 6" MTL. STUDS @ 16" O.C. WITH TWO LAYERS 5/8" G.W.B TYPE 'x' EACH SIDE. 3 1/2" GLASS FIBER FRICTION FIT INSULATION IN STUD SPACE. IN WET AREAS USE M.R. G.W.B. (GA FILE#: WP 1522) BSA# 301-60SM - STC RATING =55-59 AS PER ASTM E90

WALL TYPE 3M DENOTES TWO HR RATED - MASONRY EQUIVALENT AS PER RCNY 1014-01 EXIT SHAFT ENCLOSURE CONSTRUCTED OF MINIMUM 18 GA. 6" MTL. STUDS @ 16" O.C. WITH TWO LAYERS 5/8" G.W.B TYPE 'x' ON THE OCCUPIED SIDE, AND ONE LAYER OF 5/8" G.W.B TYPE 'X' WITH ONE LAYER OF ASTM C 1629 IMPACT CLASSIFICATION LEVEL 2 WALL BOARD ON THE INTERIOR SIDE OF A SHAFT ENCLOSURE.. 3 1/2" GLASS FIBER FRICTION FIT INSULATION IN STUD SPACE. IN WET AREAS USE M.R. G.W.B. (GA FILE#: WP 1522) BSA# 301-60SM - STC RATING =55-59 AS PER ASTM E90

WALL TYPE 4 DENOTES TWO HR RATED - EXTERIOR BEARING WALL CONSTRUCTED OF MINIMUM 18 GA. 6" MTL. STUDS @ 16" O.C. WITH 2 LAYER 5/8" G.W.B EACH SIDE. FOR THE EXTERIOR WALL USE TYPE X EXTERIOR GYPSUM SHEATHING FOR WATERPROOFING.THE EXTERIOR WALL WILL BE COVERED WITH 2" EIFS FINISH. - STC RATING =62-65 AS PER ASTM E90. WALL FURRED WITH 3 ½ " FOIL FACED FIBERGALSS BATT INSULATION R21.

WALL TYPE 4M DENOTES TWO HR RATED - MASONRY EQUIVALENT EXTERIOR AS PER RCNY 1014-01 EXIT SHAFT ENCLOSURE BEARING WALL CONSTRUCTED OF MINIMUM 18 GA. 6" MTL. STUDS @ 16" O.C. WITH 2 LAYER 5/8" G.W.B ON THE OCCUPIED SIDE, AND ONE LAYER OF 5/8" G.W.B TYPE 'X' WITH ONE LAYER OF ASTM C 1629 IMPACT CLASSIFICATION LEVEL 2 WALL BOARD ON THE INTERIOR SIDE OF A SHAFT ENCLOSURE. FOR THE EXTERIOR WALL USE TYPE X EXTERIOR GYPSUM SHEATHING FOR WATERPROOFING.THE EXTERIOR WALL WILL BE COVERED WITH 2" EIFS FINISH. - STC RATING =62-65 AS PER ASTM E90. WALL FURRED WITH 3 1/2 " FOIL FACED FIBERGALSS BATT INSULATION R21.

WALL TYPE 5 DENOTES FURRED OUT CONCRETE FOUNDATION WALL (THICKNESS AS PER STRUCTURAL PLAN) WITH 3-5/8" MTL. STUDS @ 16" O.C. WITH ONE LAYER 5/8" G.W.B OVER & 3 1/2" BATT INSULATION THROUGH-OUT STUD CAVITY

WALL TYPE 6 DENOTES 8" (AS PER STRUCT. DWG'S) 75% SOLID C.M.U WALL, PROVIDED WITH TRUSS TYPE GALV. REINFORCING @ 16" O.C. LAMINATED WITH ONE LAYER 5/8" G.W.B.- STC RATING =70+ AS PER ASTM E90

WALL TYPE 7 DENOTES TWO HR RATED - EXTERIOR BEARING WALL CONSTRUCTED OF MINIMUM 18 GA. 6" MTL. STUDS @ 16" O.C. WITH 2 LAYER 5/8" G.W.B EACH SIDE. FOR THE EXTERIOR WALL USE TYPE X EXTERIOR GYPSUM SHEATHING FOR WATERPROOFING.THE EXTERIOR WALL WILL BE COVERED WITH BRICK. - STC RATING =62-65 AS PER ASTM E90. WALL FURRED WITH 3 ½ " FOIL FACED FIBERGALSS BATT INSULATION R21.

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Details: Wall Types

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

A-116.00

Sheet:	22 of 30
Scale:	NTS

DOB Scan Sticker

ENERGY CONSERVATION CONSTRUCTION CODE:

TABLE 302.1 EXTERIOR DESIGN CONDITIONS–NY STATE NEW YORK CITY–ZONE 10B

SECTION 101 SCOPE AND GENERAL REQUIREMENTS

101.3.1 RESIDENTIAL BUILDINGS

WINDOWS

TABLE U FACTOR DEFAULT TABLE FOR WINDOWS, GLAZED DOORS AND SKYLIGHTS
102.5.2(1)

NEW WINDOW SHALL BE
WOOD FRAME W/ 0.56
THERMAL BREAK, FIXED,
DOUBLE GLAZING

TABLE 505.2
HEATING AND COOLING CRITERIA
FOR ZONE 10B

Element	Required U Value	Proposed U Value
Roof/Ceiling Assem.	U = 0.031	U = 0.023
CMU Wall Assem.	U = 0.215	U = 0.037
Stud Wall Assemb.	U = 0.215	U = 0.033
Typ. Stud Wall Assem.	U = 0.215	U = 0.034
*R = 1/U		

NEW YORK STATE ENERGY CODE:

BUILDING LOCATION (FOR WEATHER DATA): KINGS, NEW YORK
CLIMATE ZONE: 10B
HEATING DEGREE DAYS (BASE 65 DEGREES F): 4910
COOLING DEGREE DAYS (BASE 65 DEGREES F): 1053

104.2 COMPLIANCE DOCUMENTATION

1. TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THE PROPOSED ENVELOPE DESIGN REPRESENTED IN THIS PLAN DOCUMENTS IS CONSISTENT WITH THE BUILDING SPECIFICATIONS AND OTHER CALCULATIONS SUBMITTED WITH THE PERMIT APPLICATION. THE PROPOSED ENVELOPE SYSTEM HAS BEEN DESIGNED TO MEET THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE REQUIREMENTS.

COMPLIANCE WITH CHAPTER 8 (NEW YORK STATE ENERGY CODE)

802.2.1 ABOVE–GRADE WALLS
TO BE INSULATED WITH A MIN. VALUE (R11)

802.2.3 WINDOWS AND GLASS DOORS
MAX. P.F.<.25 SHGC 0.5 U–FACTOR 0.6

802.2.4 ROOF ASSEMBLY
ROOFS TO BE INSULATED WITH RIGD INSULATION BOARD WITH A MIN. VALUE
(R19)

802.2.6 FLOOR OVER UNCONDITIONED SPACE
TO BE INSULATED WITH A MIN. VALUE R–5.

BC 1601 – WIND LOADS AND EARTHQUAKE LOADS:

1. WIND LOADS AS PER BC 1609 – THE STRUCTURAL FRAME AND EXTERIOR COMPONENTS OF ALL BUILDINGS, SIGNS, TANKS AND OTHER EXPOSED CONSTRUCTIONS SHALL BE DESIGNED TO RESIST THE PRESSURES DUE TO WIND AS PRESCRIBED IN BC 1609. WIND SHALL BE ASSUMED TO ACT FROM ANY DIRECTION. FOR CONTINUOUS FRAMING, THE EFFECTS OF PARTIAL LOADING CONDITIONS SHALL BE CONSIDERED.

2. EARTQUAKE LOADS AS PER BC 1614 – EVERY BUILDING, STRUCTURE AND PORTION THEREOF SHALL AT THE MINIMUM, BE DESIGNED AND CONSTRUCTED TO RESIST THE EFFECTS OF SEISMIC GROUND MOTIONS AS PRESCRIBED IN BC 1614.

3. UBC – UNIFORM BUILDING CODE SECTION 2312–1990. THE FOLLOWING TYPES OF CONSTRUCTION SHALL, AT A MINIMUM, BE DESIGNED AND CONSTRUCTED TO RESIST THE EFFECTS OF SEISMIC GROUND MOTIONS AS PROVIDED IN THIS SECTION.

NEW STRUCTURES ON NEW FOUNDATIONS. NEW STRUCTURES ON EXISTING FOUNDATIONS; AND ENLARGEMENTS IN AND OF THEMSELVES ON NEW FOUNDATIONS. BUILDINGS CLASSIFIED IN NEW YORK CITY OCCUPANCY GROUP J–3 AND NOT MORE THAN THREE STORIES IN HIGHT NEED NOT CONFORM TO THE PROVISIONS OF THIS SECTION.

4. LIQUEFACTION.
SOILS OF CLASS 7–65, 8–65 10–65 AND NON COHESIVE CLASS 11–65 BELOW THE GROUND WATER TABLE AND LESS THAN FIFTY FEET BELOW THE GROUND SURFACE SHALL BE CONSIDERED TO HAVE POTENTIAL FOR LIQUEFACTION.

5. FOUNDATION PLATES AND SILLS.
FOUNDAIN PLATES OR SILLS SHALL BE BOLTED TO THE FOUNDATION OR FOUNDATION WALL WITH NOT LESS THAN ONE–HALF NOMINAL DIAMETER STEEL BOLTS EMBEDED AT LEAST SEVEN INCHES INTO THE CONCRETE OR MASONARY AND SPACED NOT MORE THAN SIX FEET APART. THERE SHALL BE A MINIMUM OF TWO BOLTS PER PIECE WITH ONE BOLT LOCATED WITHIN TWELVE INCHES OF EACH END OF EACH PIECE. A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE.

6. FOUNDATION INTERCONNECTION OF PILE CAPS AND CAISSONS. INDIVIDUAL PILE CAPS AND CAISSONS OF EVERY SSTRUCTURE SUBJECTED TO SEISMIC FORCES SHALL BE INTERCONNECTED BY TIES. SUCH TIES SHALL BE CAPABLE OF RESISTING IN TENSION OR COMPRESSION, A MINIMUM HORIZONTAL FORCE EQUAL TO THE PRODUCT OF (ZV4) AND THE LARGER VERTICAL LOAD AT THE END OF EACH TIE.

COMcheck Software Version 3.9.2

Envelope Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **New Construction**
Project Title : 818 Lexington

Construction Site:
818 Lexington Avenue
Brooklyn, NY 11221

Owner/Agent:
Jam 818 Lex LLC
1000 Stanley Ave
Brooklyn, NY 11208

Designer/Contractor:
Jeffrey Kamen, R.A.
320 Bond Street
New York, NY 10012
212-982-5112

Section 2: General Information

Building Location (for weather data): **Kings, New York**
Climate Zone: **4a**
Building Space Conditioning Type(s): **Nonresidential**
Vertical Glazing / Wall Area Pct.: **21%**

Activity Type(s)	Floor Area
Multifamily	32727

Section 3: Requirements Checklist

Envelope PASSES: Design 2% better than code.

Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Floor 1: Slab-On-Grade:Unheated, Horizontal with vertical 1 ft.	276	---	5.0	---	---
Basement Wall 1: Solid Concrete;3" Thickness, Normal Density, Furring: Metal, Wall Ht 10.0, Depth B.G. 10.0	276	11.0	10.0	0.068	0.579
Lexington (North) Wall: Steel-Framed, 16" o.c.	5435	21.0	9.1	0.054	0.064
Window 1: Vinyl Frame;Double Pane with Low-E, Clear, SHGC 0.32	2016	---	---	0.300	0.400
South Wall: Steel-Framed, 16" o.c.	5435	21.0	9.1	0.054	0.064
Window 2: Vinyl Frame;Double Pane with Low-E, Clear, SHGC 0.32	2016	---	---	0.300	0.400
East Wall: Steel-Framed, 16" o.c.	4371	21.0	9.1	0.054	0.064
Window 3: Vinyl Frame;Double Pane with Low-E, Clear, SHGC 0.32	42	---	---	0.300	0.400
West Wall: Steel-Framed, 16" o.c.	4371	21.0	9.1	0.054	0.064
Window 4: Vinyl Frame;Double Pane with Low-E, Clear, SHGC 0.32	42	---	---	0.300	0.400
Roof: Insulation Entirely Above Deck	4670	---	12.0	0.078	0.048

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

Air Leakage, Component Certification, and Vapor Retarder Requirements:

- ❑ 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed in accordance with the manufacturer's installation instructions.
- ❑ 2. Windows, doors, and skylights certified as meeting leakage requirements.
- ❑ 3. Component R-values & U-factors labeled as certified.
- ❑ 4. No roof insulation is installed on a suspended ceiling with removable ceiling panels.
- ❑ 5. 'Other' components have supporting documentation for proposed U-Factors.

- ❑ 6. Insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.
- ❑ 7. Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with motorized dampers.
- ❑ 8. Cargo doors and loading dock doors are weather sealed.
- ❑ 9. Recessed lighting fixtures installed in the building envelope are Type IC rated as meeting ASTM E283, are sealed with gasket or caulk.
- ❑ 10. Building entrance doors have a vestibule equipped with self-closing devices.

Exceptions:

- ❑ Building entrances with revolving doors.
- ❑ Doors not intended to be used as a building entrance.
- ❑ Doors that open directly from a space less than 3000 sq. ft. in area.
- ❑ Doors used primarily to facilitate vehicular movement or materials handling and adjacent personnel doors.
- ❑ Doors opening directly from a sleeping/dwelling unit.

Section 4: Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2009 IECC requirements in COMcheck Version 3.9.2 and to comply with the mandatory requirements in the Requirements Checklist.

Avishay
Name - Title — Signature — Date

COMcheck Software Version 3.9.2

Interior Lighting Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **New Construction**
Project Title : 818 Lexington

Construction Site:
818 Lexington Avenue
Brooklyn, NY 11221

Owner/Agent:
Jam 818 Lex LLC
1000 Stanley Ave
Brooklyn, NY 11208

Designer/Contractor:
Jeffrey Kamen, R.A.
320 Bond Street
New York, NY 10012
212-982-5112

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B x C)
Multifamily	32727	0.7	22909
		Total Allowed Watts =	22909

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Multifamily (32727 sq.ft.)				
Compact Fluorescent 1: Spiral 13W: Electronic:	1	283	13	3679
			Total Proposed Watts =	3679

Section 4: Requirements Checklist

Interior Lighting PASSES: Design 84% better than code.

Lighting Wattage:

- ❑ 1. Total proposed watts must be less than or equal to total allowed watts.

Allowed Watts	Proposed Watts	Complies
22909	3679	YES

Controls, Switching, and Wiring:

- ❑ 2. Daylight zones under skylights more than 15 feet from the perimeter have lighting controls separate from daylight zones adjacent to vertical fenestration.
- ❑ 3. Daylight zones have individual lighting controls independent from that of the general area lighting.

Exceptions:

- ❑ Contiguous daylight zones spanning no more than two orientations are allowed to be controlled by a single controlling device.
- ❑ Daylight spaces enclosed by walls or ceiling height partitions and containing two or fewer light fixtures are not required to have a separate switch for general area lighting.

- ❑ 4. Independent controls for each space (switch/occupancy sensor).

Exceptions:

- ❑ Areas designated as security or emergency areas that must be continuously illuminated.

- ❑ Lighting in stairways or corridors that are elements of the means of egress.
- ❑ 5. Master switch at entry to hotel/motel guest room.
- ❑ 6. Individual dwelling units separately metered.
- ❑ 7. Medical task lighting or art/history display lighting claimed to be exempt from compliance has a control device independent of the control of the nonexempt lighting.
- ❑ 8. Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.

Exceptions:

- ❑ Only one luminaire in space.
- ❑ An occupant-sensing device controls the area.
- ❑ The area is a corridor, storeroom, restroom, public lobby or sleeping unit.
- ❑ Areas that use less than 0.6 Watts/sq.ft.

- ❑ 9. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.

Exceptions:

- ❑ Sleeping units, patient care areas; and spaces where automatic shutoff would endanger safety or security.

- ❑ 10. Photocell/astronomical time switch on exterior lights.

Exceptions:

- ❑ Lighting intended for 24 hour use.

- ❑ 11. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

Exceptions:

- ❑ Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.

Section 5: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2009 IECC requirements in COMcheck Version 3.9.2 and to comply with the mandatory requirements in the Requirements Checklist.

Avishay
Name - Title — Signature — Date

COMcheck Software Version 3.9.2

Exterior Lighting Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **New Construction**
Project Title : 818 Lexington
Exterior Lighting Zone: **2 (Residential mixed use area)**

Construction Site:
818 Lexington Avenue
Brooklyn, NY 11221

Owner/Agent:
Jam 818 Lex LLC
1000 Stanley Ave
Brooklyn, NY 11208

Designer/Contractor:
Jeffrey Kamen, R.A.
320 Bond Street
New York, NY 10012
212-982-5112

Section 2: Exterior Lighting Area/Surface Power Calculation

A Exterior Area/Surface	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B x C)	F Proposed Watts
Illuminated area of facade wall or surface	1 ft2	0.1	No	0	200
		Total Tradable Watts* =		0	0
		Total Allowed Watts =		0	
		Total Allowed Supplemental Watts** =		600	

* Wattage tradeoffs are only allowed between tradable areas/surfaces.
** A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Section 3: Exterior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Illuminated area of facade wall or surface (1 ft2): Non-tradable Wattage				
Compact Fluorescent 1: Spiral 20W: Electronic:	2	10	20	200
			Total Tradable Proposed Watts =	0

Section 4: Requirements Checklist

Lighting Wattage:

- ❑ 1. Within each non-tradable area/surface, total proposed watts must be less than or equal to total allowed watts. Across all tradable areas/surfaces, total proposed watts must be less than or equal to total allowed watts.
  Compliance: Passes using supplemental allowance watts.

Controls, Switching, and Wiring:

- ❑ 2. All exemption claims are associated with fixtures that have a control device independent of the control of the nonexempt lighting.
- ❑ 3. Lighting not designated for dusk-to-dawn operation is controlled by either a photosensor (with time switch), or an astronomical time switch.
- ❑ 4. Lighting designated for dusk-to-dawn operation is controlled by an astronomical time switch or photosensor.
- ❑ 5. All time switches are capable of retaining programming and the time setting during loss of power for a period of at least 10 hours.

Exterior Lighting Efficacy:

- ❑ 6. All exterior building grounds luminaires that operate at greater than 100W have minimum efficacy of 60 lumen/watt.

Exceptions:

- ❑ Lighting that has been claimed as exempt and is identified as such in Section 3 table above.
- ❑ Lighting that is specifically designated as required by a health or life safety statue, ordinance, or regulation.
- ❑ Emergency lighting that is automatically off during normal building operation.
- ❑ Lighting that is controlled by motion sensor.

Section 5: Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 2009 IECC requirements in COMcheck Version 3.9.2 and to comply with the mandatory requirements in the Requirements Checklist.

Avishay
Name - Title — Signature — Date

COMcheck Software Version 3.9.2

Mechanical Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **New Construction**
Project Title : 818 Lexington

Construction Site:
818 Lexington Avenue
Brooklyn, NY 11221

Owner/Agent:
Jam 818 Lex LLC
1000 Stanley Ave
Brooklyn, NY 11208

Designer/Contractor:
Jeffrey Kamen, R.A.
320 Bond Street
New York, NY 10012
212-982-5112

Section 2: General Information

Building Location (for weather data): **Kings, New York**
Climate Zone: **4a**

Section 3: Mechanical Systems List

Quantity	System Type & Description
38	HVAC System 1 (Multiple-Zone) : Split System Heat Pump Heating Mode: Capacity = 40000 kBtu/h, Proposed Efficiency = 18.00 COPRequired Efficiency = 3.20 COP Cooling Mode: Capacity = 36000 kBtu/h , Air Economizer Proposed Efficiency = 28.00 EERRequired Efficiency = 9.50 EER Fan System: Unspecified

Section 4: Requirements Checklist

Requirements Specific To: HVAC System 1 :

- ❑ 1. Equipment minimum efficiency: Heat Pump: 3.20 COP 9.50 EER (9.2 IPLV)
- ❑ 2. Minimum one temperature control device per zone
- ❑ 3. Integrated economizer is required for this location and system.
- ❑ 4. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ❑ 5. Systems serving more than one zone must be VAV systems
- ❑ 6. Controls capable of resetting supply air temp (SAT) by 25% of SAT-room temp difference

Exceptions(s):

- ❑ Systems that prevent reheating, recooling or mixing of heated and cooled supply air
- ❑ Seventy five percent of the energy for reheating is from site-recovered or site solar energy sources.
- ❑ Zones with peak supply air quantities of 300 cfm (142 L/s) or less.

- ❑ 7. VAV fans with static pressure sensors are placed in a position such that the controller setpoint is no greater than one-third the total design fan static pressure. If placement results in the sensor being located downstream of major duct splits, multiple sensors are installed in each major branch.

Exception(s):

- ❑ Systems with DDC of individual zone boxes reporting to the central control panel and reset of static pressure setpoint based on the zone requiring the most pressure.

- ❑ 8. Systems with DDC of individual zone boxes reporting to the central control panel has static pressure setpoint reset based on the zone requiring the most pressure.

Generic Requirements: Must be met by all systems to which the requirement is applicable:

- ❑ 1. Plant equipment and system capacity no greater than needed to meet loads

Exception(s):

- ❑ Standby equipment automatically off when primary system is operating
- ❑ Multiple units controlled to sequence operation as a function of load

- ❑ 2. Minimum one temperature control device per system
- ❑ 3. Minimum one humidity control device per installed humidification/dehumidification system
- ❑ 4. Load calculations per ASHRAE/ACCA Standard 183.
- ❑ 5. Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup

Exception(s):

- ❑ Continuously operating zones

- ❑ 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum
- ❑ 7. R-5 supply and return air duct insulation in unconditioned spaces
  R-8 supply and return air duct insulation outside the building
  R-8 insulation between ducts and the building exterior when ducts are part of a building assembly

Exception(s):

- ❑ Ducts located within equipment
- ❑ Ducts with interior and exterior temperature difference not exceeding 15°F.

- ❑ 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment
- ❑ 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics
- ❑ 10. Hot water pipe insulation: 1.5 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in.
  Chilled water/refrigerant/brine pipe insulation: 1.5 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in.
  Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.

Exception(s):

- ❑ Piping within HVAC equipment.
- ❑ Fluid temperatures between 55 and 105°F.
- ❑ Fluid not heated or cooled with renewable energy.
- ❑ Piping within room fan-coil (with AHRI440 rating) and unit ventilators (with AHRI840 rating).
- ❑ Runouts <4 ft in length.

- ❑ 11. Operation and maintenance manual provided to building owner
- ❑ 12. Balancing devices provided in accordance with IMC (2006) 603.17
- ❑ 13. Demand control ventilation (DCV) present for high design occupancy areas (>40 person/1000 ft2 in spaces >500 ft2) and served by systems with any one of 1) an air-side economizer, 2) automatic modulating control of the outdoor air damper, or 3) a design outdoor airflow greater than 3000 cfm.

Exception(s):

- ❑ Systems with heat recovery.
- ❑ Multiple-zone systems without DDC of individual zones communicating with a central control panel.
- ❑ Systems with a design outdoor airflow less than 1200 cfm.
- ❑ Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than 1200 cfm.

- ❑ 14. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings

Exception(s):

- ❑ Gravity dampers acceptable in buildings <3 stories

- ❑ 15. Automatic controls for freeze protection systems present
- ❑ 16. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted

Exception(s):

- ❑ Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.
- ❑ Systems serving spaces that are heated and not cooled to less than 60°F.
- ❑ Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar energy.
- ❑ Heating systems in climates with less than 3600 HDD.
- ❑ Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F.
- ❑ Systems requiring dehumidification that employ energy recovery in series with the cooling coil.
- ❑ Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling.

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2009 IECC requirements in COMcheck Version 3.9.2 and to comply with the mandatory requirements in the Requirements Checklist.

Avishay
Name - Title — Signature — Date

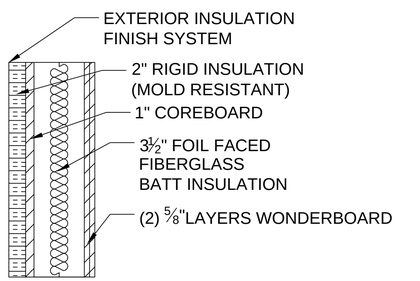
Section 6: Post Construction Compliance Statement

- ❑ HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.
- ❑ HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.
- ❑ Written HVAC balancing and operations report provided to the owner.

The above post construction requirements have been completed.

Principal Mechanical Designer-Name — Signature — Date

R VALUE



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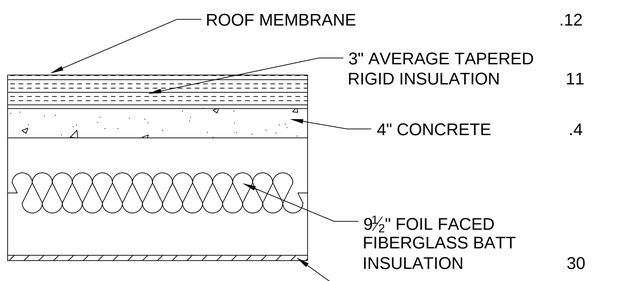

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818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

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Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

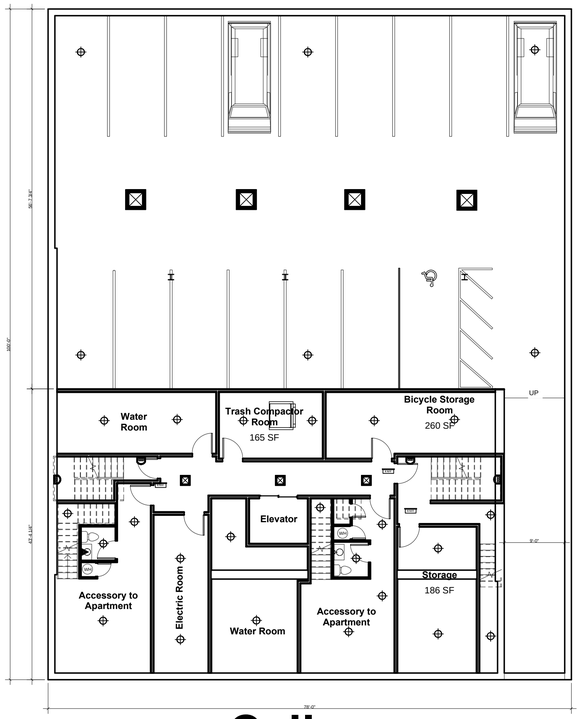
Energy: ComCheck Compliance

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

EN-100.00

Sheet:	24 of 30
Scale:	NTS

DOB Scan Sticker



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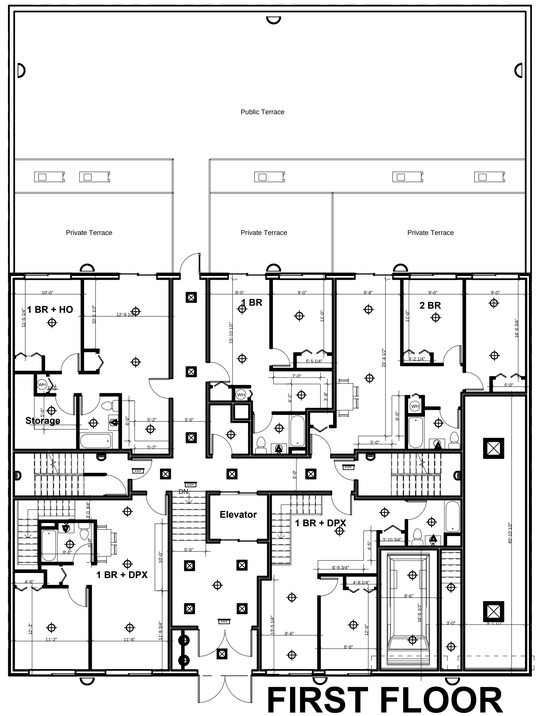

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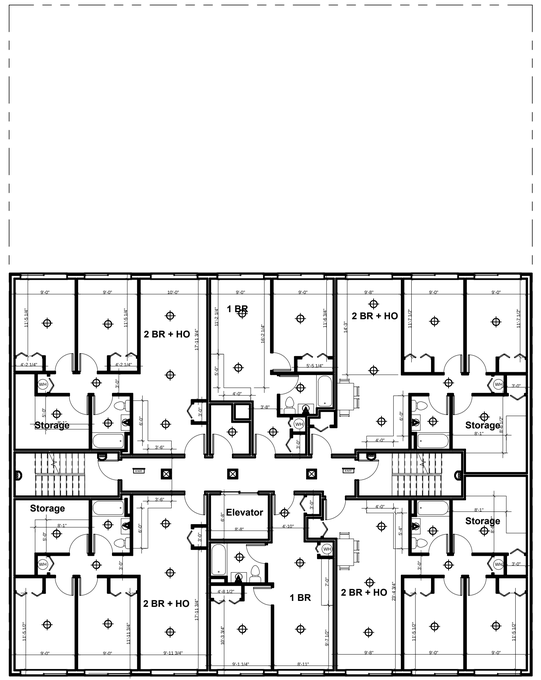

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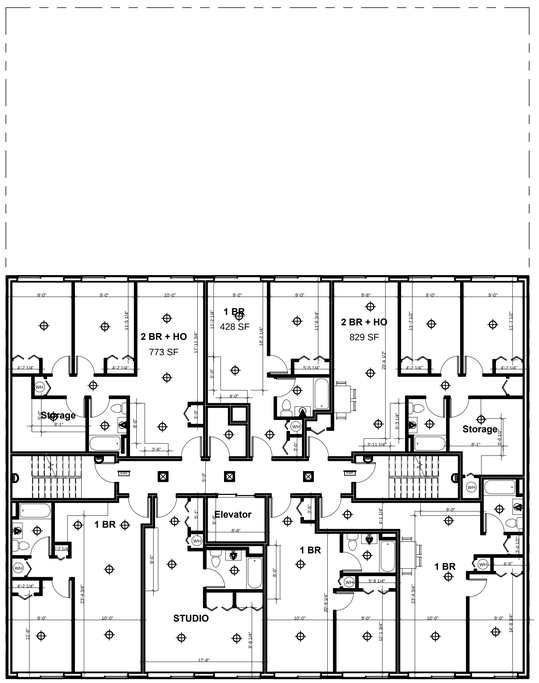

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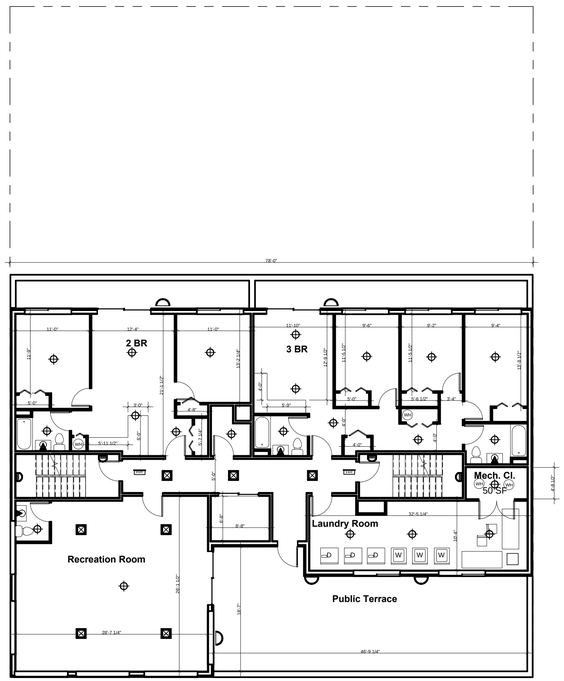

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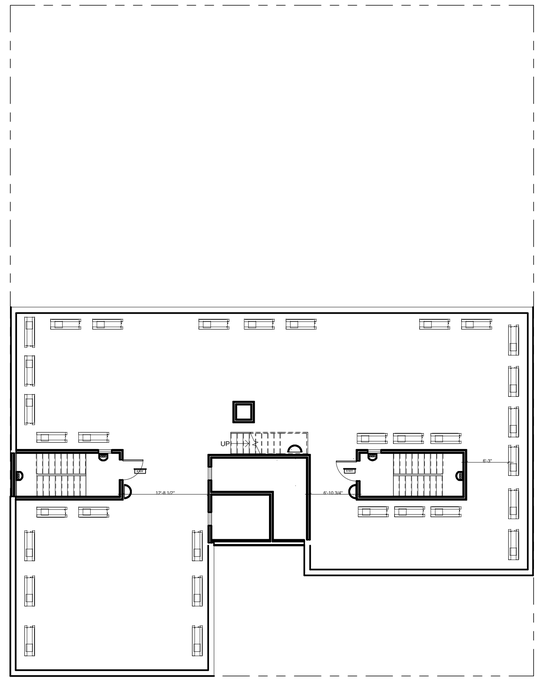

ROOF

818 Lexington

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Architect's Seal:

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Checked By:	N.T.

EN-101.00

Sheet:	25of 30
Scale:	1/32" = 1'-0"

DOB Scan Sticker

GENERAL

1. THE PROPOSED WORK ON THIS PLAN SHALL COMPLY WITH NEW YORK CITY BUILDING CODE REQUIREMENTS.
2. THE GENERAL CONTRACTOR SHALL OBTAIN CONSTRUCTION PERMIT AND PAY ALL REQUIRED FEES TO THE D.O.B. BASED ON THE PROPOSED WORK OF THIS DRAWING FROM NEW YORK CITY BUILDING DEPARTMENT PRIOR TO START OF WORK.
3. ALL ELECTRICAL WORK BEING PERFORMED SHALL BE BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH NEW YORK CITY ELECTRICAL CODE., AND SHALL BE REQUIRED TO OBTAIN ALL REQUIRED SIGN–OFFS AND CERTIFICATE OF COMPLETIONS FROM THE B.E.C.
4. ALL PLUMBING WORK SHALL BE PERFORMED BY A LICENSED PLUMBER IN ACCORDANCE WITH THE NEW YORK CITY BUILDING CODE AND INSPECTION REQUIREMENTS. HE SHALL BE RESPONSIBLE TO OBTAIN ALL REQUIRED PLUMBING SIGN–OFFS AND INSPECTIONS FROM THE DEPARTMENT OF BUILDING'S PLUMBING DIVISION.
5. THE GENERAL CONTRACTOR SHALL CHECK AND VERIFY ALL CONDITIONS AND DIMENSIONS ON THE SITE PRIOR TO START OF WORK. HE SHALL NOTIFY THE ARCHITECT /ENGINEER OF RECORD ANY DISCREPANCIES AND/OR CHANGE OF LAYOUT BETWEEN THE FIELD CONDITIONS AND THIS DRAWING(S) IMMEDIATELY. AILURE TO DO SO WILL INDICATE THE GENERAL CONTRACTOR'S ACCEPTANCE OF THIS DRAWING(S) AND WILL TAKE FULL RESPONSIBILITY FOR SAID WORK BEING PERFORMED.
6. THE ARCHITECT/ENGINEER OF RECORD HAS NOT BEEN RETAINED TO SUPERVISE THE CONSTRUCTION.
7. THE GENERAL CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED ARCHITECT/ENGINEER FOR ALL REQUIRED CONTROLLED INSPECTIONS.
8. THE GENERAL CONTRACTOR SHALL OBTAIN SIGN–OFF FROM THE DEPARTMENT OF BUILDING AFTER COMPLETION OF WORK.
9. TOP OF ARCHITECTURAL FINISH OF FIRST FLOOR SEATING ELEVATION=0'–0" FOR THE PURPOSES OF THESE CONTRACT DOCUMENTS.
10. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL BE KNOWLEDGEABLE OF CONDITIONS THEREON. HE SHALL INVESTIGATE, VERIFY AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT AND SHALL NOTIFY THE OWNER OF ANY CONDITIONS REQUIRING MODIFICATIONS BEFORE PROCEEDING WITH THE WORK.
11. REFER TO STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS AND SYMBOLS. ALL NOTES ARE TO BE REVISED AND APPLIED TO RELATED BUILDING COMPONENTS. 12. NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS. SHEETS ARE TO BE REVIEWED AND NOTES ON ANY ONE SHEET ARE TO BE APPLIED ON RELATED DRAWINGS AND DETAILS.
13. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE DETAILED. WHERE SPECIFIED DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
14. ALL ELEVATOR AND STAIR OPENINGS SHALL BE CERTIFIED BY THE ELEVATOR SUBCONTRACTOR PRIOR TO FORMING. REQUIRED MODIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR APPROVAL PRIOR TO FORMING.
15. REFER TO CERTIFIED MECHANICAL AND ELECTRICAL CONTRACTOR'S DRAWINGS AND MANUFACTURER'S TEMPLATE DRAWINGS FOR ALL MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, BOLT SETTING TEMPLATES, ISOLATIONS, SPRING ISOLATION,ETC, NOT SHOWN ON THE DRAWINGS.
16. CONTRACTOR TO COORDINATE ALL EQUIPMENT BASE AND HOUSEKEEPING PADS WITH MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS. EQUIPMENT BASES AND HOUSEKEEPING PADS TO BE A MINIMUM OF 4" HIGH UNLESS OTHERWISE NOTED. PROVIDE ONE LAYER OF WWF 6X6XW4 WELDED WIRE FABRIC MINIMUM, TO BE INSTALLED BENEATH THE FULL PROJECTED AREA OF EQUIPMENT.
17. CONCRETE PADS AND MOUNTINGS IN MECHANICAL SPACES SHALL BE COORDINATED WITH ELECTRICAL AND PLUMBING CONTRACTORS.
18. CONTRACTOR TO COORDINATE ALL MECHANICAL AND ELECTRICAL FLOOR AND WALL SLEEVES AND ALL MECHANICAL SHAFTS WITH MECHANICAL, PLUMBING, FIRE–PROTECTION, ELECTRICAL, STRUCTURAL AND ARCHITECTURAL DRAWINGS.
19. PROVIDE ACCESS PANELS AS APPLICABLE AND AS REQUIRED FOR MECHANICAL EQUIPMENT. ALL ACCESS PANELS SHALL BE CONCEALED, AND LOCATIONS SHALL BE REVIEWED WITH THE ARCHITECT PRIOR TO PROCEEDING. 20. PORTABLE FIRE EXTINGUISHERS LOCATED ON THE DRAWINGS SHALL RECEIVE APPROVAL OF FIRE DEPARTMENT PRIOR TO INSTALLATION.
21. ALL SPRINKLER HEADS IN ACOUSTICAL TILE SHALL BE INSTALLED CENTERED IN THE ACOUSTICAL TILE. (N/A) 22. ALL STRUCTURAL ELEMENTS WHICH DO NOT REQUIRE FIREPROOFING SHALL BE FIELD PAINTED.
23. ALL EXTERIOR HANDRAILS AND EXTERIOR EXPOSED METAL SHALL BE GALVANIZED AND PAINTED UNLESS NOTED OTHERWISE.
24. ALL EXTERIOR DOORS SHALL PREVENT AIR LEAKAGE/INFILTRATION AROUND THEIR PERIMETER WHEN IN A CLOSED POSITION.
25. ALL EXTERIOR JOINTS AROUND WINDOW AND DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOFS, AND BETWEEN WALLS AND PANELS AT PENETRATION OF UTILITIES THROUGH THE ENVELOPE SHALL BE SEALED, CAULKED OR WEATHER STRIPPED TO PREVENT AIR LEAKAGE/INFILTRATION.
26. ALL EXTERIOR SOFFITS SHALL BE CONSTRUCTED WITH RIGID GALVANIZED METAL FRAME MEMBERS AND SHALL RESIST UPLIFTING WIND LOADS OF 1.5 TIMES THE WIND PRESSURE DIAGRAM.
27. ALL EXTERIOR SOFFITS SHALL BE INSTALLED TO PROVIDE A 'U' VALUE OF 0.09 SHALL HAVE A VAPOR BARRIER AND SHALL BE PROPERLY SEALED AGAINST AIR INFILTRATION.
28. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID MOLECULAR BREAKDOWN. 29. FUTURE TENANT DEVELOPMENT TO BE COVERED UNDER SEPARATE PERMITS. (N/A)
30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL AND REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF WORK.
31. THE CONTRACTOR SHALL REPLACE AND REPAIR MISSING, BROKEN SIDEWALK, CURB, OR ROADWAY DAMAGE DURING CONSTRUCTION AS DIRECTED BY THE BOROUGH.

OCCUPANCY RESISTANCE RATINGS:

1. CONSTRUCTION: TYPE II–A NON–COMBUSTIBLE CONSTRUCTION–SPRINKLERED.
2. UNLESS NOTED OTHERWISE ALL COLUMNS, BEAMS AND OTHER STRUCTURAL MEMBERS SHALL HAVE SPRAYED ON FIREPROOFING INSTALLED AT THE REQUIRED THICKNESS AND DENSITY TO ACHIEVE THE THE HOURLY RATINGS AS SET FORTH HEREAFTER. ALL SPRAYED–ON FIREPROOFING SHALL COMPLY WITH SECTION 27–132, INSPECTION REQUIREMENTS OF THE BUILDING CODE OF NEW YORK CITY.
3. ALL RATED PARTITIONS SHALL RUN PAST STRUCTURAL BEAMS, TO THE UNDERSIDE OF STRUCTURAL SLAB. WHERE THE PARTITIONS TERMINATE TO THE UNDERSIDE OF STRUCTURAL BEAMS, THE STRUCTURAL BEAMS SHALL HAVE ADDITIONAL SPRAYED–ON FIREPROOFING TO ACHIEVE AN AREA SEPARATION RATING EQUAL TO THAT OF THE PARTITION RATING, IF REQUIRED.
4. SPACE BETWEEN SLAB AND EXTERIOR WALL AND ALL OPENINGS IN THE FLOOR SLABS INCLUDING SPACES BETWEEN DUCTS, CONDUIT, PIPING, ETC., (EXCEPT WHEN COMPLETELY ENCLOSED BY FIRE RATED CONSTRUCTION), SHALL BE SAFED–OFF(FILLED) WITH APPROVED SAFING MATERIAL TO MAINTAIN FIRE RATING CONTINUITY OF THE FLOOR CONSTRUCTION. ALL JOINTS OF ANY ELEMENT OF CONSTRUCTION SHALL BE TIGHT AND PREVENT THE PASSAGE OF SMOKE OR FLAME.
5. WHERE MASONRY WALLS AT INTERIOR LOT LINES ARE BROKEN TO ACCOMMODATE STRUCTURE THEREBY REDUCING THE FIRE RATING OF THE WALL AT THE STRUCTURE, THEN THE STRUCTURE SHALL BE FIREPROOFED AT THE REQUIRED WALL RATING.
6. ALL FIRE RESISTIVE (LABELED) FIRE DOORS SHALL HAVE THE APPROPRIATE LABELS AFFIXED TO BOTH DOOR AND FRAME.
7. A FINISH OR FIRE RATING INDICATION ON A WALL SHALL MEAN THE ENTIRE LENGTH OF WALL IS TO BE FINISHED OR FIRE RATED AS INDICATED.
8. ALL PIPING, DUCTS, ETC., THAT PENETRATE FLOOR SLABS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE FIRE RESISTIVE AND STRUCTURAL INTEGRITY OF THE BUILDING.
9. WHERE INTERIOR FINISH MATERIALS ARE SPACED (FURRED) FROM THEIR SUPPORTING MEMBERS, THE CONCEALED SPACES CREATED SHALL BE FIRE STOPPED AS REQUIRED BY CODE.
10. ALL RATINGS ARE TO COMPLY WITH THE FIRE RESISTANCE DESIGN MANUAL, ELEVENTH EDITION, AS MODIFIED BY RS 5–18 OF THE BUILDING CODE OF THE CITY OF NEW YORK.
11. OCCUPANCY: RESIDENTIAL R–2
12. FIRE RESISTIVE RATINGS (AS PER FIRE INDEX I TABLE 602 OF NYC BUILDING CODE):
   A. EXTERIOR NONBEARING WALLS:
      1. OUTSIDE EXPOSURE 2 HRS

3'–0" OR LESS	BEARING	2 HRS
	NON– BEARING	2 HRS
MORE THAN 3'–0", BUT	BEARING	2 HRS
LESS THAN 15'–0"	NON– BEARING	2 HRS
15'–0" OR MORE, BUT	BEARING	1 HR
LESS THAN 30'–0"	NON– BEARING	1 HR
30'–0" OR MORE	BEARING	1 HR
	NON– BEARING	0 HRS

   B. COLUMNS, GIRDERS AND TRUSSES:
      1. SUPPORTING MORE THAN ONE FLOOR — 1 HR
      2. SUPPORTING ONE FLOOR ONLY — 1 HR
   C. FLOOR CONSTRUCTION INCLUDING BEAMS — 1 HR
   D. ROOF CONSTRUCTION INCLUDING BEAMS, TRUSSES AND FRAMING, INCLUDING ARCHES, DOMES, SHELLS, CABLE SUPPORTED ROOF AND ROOF DECKS.
      1. 15'–0' OR LESS IN HEIGHT ABOVE FLOOR TO LOWEST MEMBER — 1 HR
      2. 15'–0' TO 20'–0' IN HEIGHT ABOVE FLOOR TO LOWEST MEMBER — 1 HR
      3. 20'–0' OR MORE IN HEIGHT ABOVE FLOOR TO LOWEST MEMBER — 0 HR
   E. INTERIOR NONBEARING WALLS:
      1. EXIT WAYS AND STAIR ENCLOSURES — 2 HRS
      2. ELEVATOR HOIST WAY ENCLOSURES — 2 HRS
      3. PIPE SHAFTS AND DUCT ENCLOSURES — 2 HRS
      4. GAS, WATER AND EJECTOR ROOM — 2 HRS
      5. ELECTRIC ROOM — 2 HRS
      6. ELEVATOR MACHINE ROOMS — 2 HRS
      7. BOILER ROOM — 2 HRS
   F. INTERIOR BEARING WALLS AND BEARING PARTITIONS 1 HR
13. FIRE SEPARATIONS (AS PER TABLE 5–1 OF NYC BLDG CODE)
   J–2 NEXT TO J–2 : 1 HOUR FIRE RATED
   (27–341–a)

FINISHES AND DETAILS:

1. INTERIOR FINISHES SHALL BE CLASSIFIED IN ACCORDANCE WITH SURFACE FLAME SPREAD RATINGS (PER RS 5–5) AND SHALL BE USED IN ACCORDANCE WITH TABLE 504, AND 27–348. % OF THE AGGREGATE
2. NO INTERIOR FINISH MATERIAL COVERING MORE THAN 20 WALL AND CEILING AREA, SHALL BE USED IF IT DEVELOPS SMOKE IN GREATER DENSITY THAN THE RATING SHOWN IN TABLE 27–348(d).
3. ATTACHMENTS AND ADHESIVES FOR INTERIOR FINISH TO HAVE THE SAME FLAME–SPREAD, AND SMOKE DEVELOPED RATING OF THE INTERIOR FINISHES, AS PER 27–348(F).
4. NO MATERIAL SHALL BE USED IN ANY INTERIOR LOCATION WHICH WILL PRODUCE PRODUCTS MORE TOXIC THAN THOSE GIVEN OFF BY WOOD OR PAPER WHEN DECOMPOSING OR BURNING AS PER 27–348(E).
5. COATINGS APPLIED BY BRUSH OR SPRAY SHALL NOT BE USED AS FLAME–SPREAD RETARDANTS EXCEPT AS PROVIDED IN 27–349.
6. FOR CONSTRUCTION GROUP 1, COMBUSTIBLE FLOORING MAY BE USED WHEN IN COMPLIANCE WITH 27–351(B).
7. FLOORS IN REQUIRED EXITS SHALL NOT HAVE ANY CARPET. ONLY WOOL CARPETING MAY BE INSTALLED IN LOBBY AREAS, EXIT PASSAGEWAYS, AND CONVENIENCE STAIRS, AS PER 27–351(D)(1).
8. CARPET, WHEN USED AS A FLOOR COVERING, SHALL HAVE FLAMMABILITY REQUIREMENTS IN ACCORDANCE WITH RS 5–20. IF USED AS AN INTERIOR FINISH, IT SHALL COMPLY WITH PROVISIONS REGARDING INTERIOR FINISH, IT SHALL COMPLY WITH PROVISIONS REGARDING INTERIOR FINISHES AS PER 27–348.
9. ALL GLASS PANELS, USED IN WINDOWS, IN DOORS, AS INTERIOR PARTITIONS, ETC., SHALL BE IN COMPLIANCE WITH SUBCHAPTER 10, ARTICLE 12, AND RS 10–68. THICKNESS, MAXIMUM GLASS PANEL AREA, STRENGTH, ETC., OF GLASS PANEL SHALL BE IN ACCORDANCE WITH TABLES 10–6, 10–7, 10–8 OF SUBCHAPTER 10 ARTICLE 12.
10. EXCEPT FOR MISCELLANEOUS TRIMS, MOLDINGS, ETC., ALL WOOD USED SHALL BE FIRE–RETARDANT, I.E. COUNTER TOPS, CABINETS, DOORS, ETC.

PARTITION NOTES:

1. DEFLECTION FOR ALL PARTITIONS SHALL NOT EXCEED 1/240TH OF THE SPAN MAXIMUM FOR TYPICAL GYPSUM PARTITIONS, OR 1/360 FOR WOOD–CLAD PARTITIONS, OR STONE–CLAD PARTITION SYSTEMS.
2. WATER RESISTANT DRYWALL (FOR THE FULL HEIGHT OF THE PARTITION CONSTRUCTION) SHALL BE USED IN TOILETS, SHOWERS, SERVICE ROOMS, ETC. USE STANDARD GYPSUM BOARD FOR CEILING CONSTRUCTION.
3. PENETRATIONS: COORDINATE WITH MECHANICAL CONTRACTOR FOR OPENINGS REQUIRED FOR RETURN AIR IN FULL HEIGHT PARTITIONS.
4. PROVIDE LATERAL BRACING TO STRUCTURE ABOVE FINISHED CEILINGS FOR PARTITIONS EXCEEDING UNSUPPORTED HEIGHTS INDICATED ON DRAWINGS.
5. PROVIDE HORIZONTAL CONTROL JOINTS AT 12'–0' O.C. IN THE VERTICAL DIRECTION UNLESS NOTED OTHERWISE.
6. PROVIDE CONTROL JOINTS IN GYPSUM WALLBOARD CONSTRUCTION SUCH THAT PARTITION OR FURRING RUNS DO NOT EXCEED 30', AND CEILING DIMENSIONS DO NOT EXCEED 50' IN EITHER DIRECTION WITH PERIMETER RELIEF OR 30' WITHOUT PERIMETER RELIEF.
7. PROVIDE VERTICAL CONTROL JOINTS WITH SEALANT IN MASONRY WALLS AS SHOWN IN DRAWINGS WITH MAXIMUM SPACING OF 25'–0'.
8. COMPLETELY SEAL WITH ACOUSTICAL SEALANT HEADS, BASES, AND ENDS, PLUS ALL PENETRATIONS(INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL, AND PLUMBING WORK).
9. PROVIDE SOUND BLANKETS AS INDICATED.

AMERICANS WITH DISABILITIES ACT AND LOCAL LAW#58/87 NOTES:

1. PROPOSED WORK TO COMPLY WITH APPLICABLE REQUIREMENTS OF LOCAL LAW #58/87 FOR HANDICAPPED ACCESS AND THE AMERICANS WITH DISABILITIES ACT.
2. NEW BATHROOM TO PROVIDE GRAB BARS AND HANDRAILS MEETING THE REQUIREMENTS OF RS 4–6, 4.25.3.
3. CONTROLS AND OPERATING MECHANISMS SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST, AS PER RS 4–6, 4.25.4.
4. FOR DOORS WHICH HAVE CLOSERS, THE SWEEP PERIOD OF THE CLOSER SHALL BE ADJUSTABLE SUCH THAT FROM AN OPEN OF 90 DEGREES, THE DOOR WILL TAKE AT LEAST 3 SECONDS TO MOVE TO A POSITION OF APPROXIMATELY 12 DEGREES, AS PER RS 4–6, 4.13.10.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING CODE OF THE CITY OF NEW YORK INCLUDING ALL AMENDMENTS AND THE AMERICANS WITH DISABILITIES ACT INCLUDING LOCAL LAW #58/87.

EGRESS NOTES:

1. CORRIDORS ARE TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF 27–369, INCLUDING THE FOLLOWING CORRIDORS ARE TO HAVE A CLEAR HEIGHT OF 7"–6" FOR AT LEAST 75 % OF FLOOR AREA, WITH NO POINT LESS THAN 7'–0' IN HEIGHT. NO PROJECTION BELOW THE CEILING IS TO BE LOCATED SO AS TO OBSTRUCT FULL VIEW OF EXIT SIGNS.
2. DOORS ARE TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF 27–371, INCLUDING THE FOLLOWING:
   A. DOORS FOR REQUIRED EXITS ARE TO BE SELF CLOSING WITH A 1 1/2 HOUR FIRE PROTECTION RATING, EXCEPT THAT EXTERIOR STREET FLOOR EXIT DOORS HAVING AN EXTERIOR SEPARATION OF MORE THAN 15' NEED NOT BE FIRE PROTECTED.
   B. DOOR JAMBS OR STOPS AND THE DOOR THICKNESS WHEN OPEN IS NOT TO TO REDUCE THE REQUIRED WIDTH BY MORE THAN 3" FOR EACH 22" OF WIDTH DOOR OPENINGS TO ALL HABITABLE AND OCCUPIABLE ROOMS IS TO BE A MINIMUM NOMINAL WIDTH OF 32".
   C. ALL EXIT DOORS ARE TO BE OPEN IN THE DIRECTION OF THE EGRESS.
   D.FLOOR LEVELS ON BOTH SIDES OF ALL EXIT AND CORRIDOR DOORS ARE TO BE ESSENTIALLY LEVEL AND AT THE SAME ELEVATIONS FOR A DISTANCE, PERPENDICULAR TO THE DOOR OPENING, AT LEAST EQUAL TO THE WIDTH OF THE DOOR LEAF, EXCEPT THAT WHERE DOORS LEAD OUT OF A BUILDING THE FLOOR LEVEL INSIDE MAY BE 7 1/2" HIGHER THAN THE LEVEL OUTSIDE.
3. INTERIOR STAIRS ARE TO COMPLY WITH ALL APPLICABLE REQUIREMENTS OF 27–375 AND TABLE 6–4, INCLUDING THE FOLLOWING;
   A. THE CLEAR HEADROOM IS TO BE 7' MINIMUM.
   B. LANDINGS AND PLATFORMS PROVIDED AT THE HEAD AND FOOT OF EACH FLIGHT OF STAIRS ARE TO HAVE A MINIMUM WIDTH, PERPENDICULAR TO THE DIRECTIONS OF TRAVEL, OF AT LEAST THE WIDTH OF THE STAIR. IN AN INTERMEDIATE LANDING IN STRAIGHT–RUN STAIRS, THE DISTANCE BETWEEN RISERS OF THE UPPER AND LOWER FLIGHTS NEED NOT BE MORE THAN 44". LANDINGS AND PLATFORMS ARE TO BE ENCLOSED BY WALLS, GRILLS, OR GUARDS AT LEAST 3' HIGH.
   C. THE MAXIMUM VERTICAL RISE OF A SINGLE FLIGHT OF STAIRS BETWEEN FLOORS IS NOT TO EXCEED 12' IN ALL OCCUPANCY GROUPS, EXCEPT F AND H WHERE THE VERTICAL RISE IS NOT TO EXCEED 8'. NO FLIGHT OF STAIRS IS TO HAVE LESS THAN TWO RISERS.
   D. THE SUM OF TWO RISERS PLUS ONE THREAD IS NOT TO BE LESS THAN 24" NOR MORE THAN 25 1/2". RISER HEIGHT AND THREAD WIDTH SHALL BE CONSISTENT IN ANY FLIGHT OF STAIRS FROM STORY TO STORY.
4. AS PER 27–381, ILLUMINATION OF AT LEAST TWO FOOT CANDLES MEASURED AT THE FLOOR LEVEL SHALL BE MAINTAINED CONTINUOUSLY, DURING OCCUPANCY IN EXISTS AND THEIR ACCESS FACILITIES FOR THEIR FULL LENGTH, AT CHANGES IN DIRECTION IN AND INTERSECTIONS OF CORRIDORS, BALCONIES, EXIT PASSAGEWAYS, STAIRS, RAMPS, ESCALATORS, BRIDGES, TUNNELS, LANDINGS, AND PLATFORMS, AND AS PROVIDED IN SUBCHAPTER 5 OF THIS CHAPTER FOR PLACES OF ASSEMBLY, EXCEPT THAT THIS REQUIREMENT SHALL NOT APPLY TO DWELLING UNITS.
5. BS&A APPROVED TYPE EXIT SIGNS ARE TO BE PROVIDED AS REQUIRED, PER SUBCHAPTER 6, ARTICLE 7.

SMOKE/CARBON MONOXIDE DETECTING DEVICES:

1. SMOKE/CM DETECTING DEVICES SHALL CONFORM TO SUBCHAPTER 17, ARTICLE 6 OF THE BUILDING CODE.
2. SMOKE/CM DETECTING DEVICES SHALL RECEIVE THEIR PRIMARY POWER FROM BUILDING WIRING. THERE SHALL BE NO SWITCHES IN THE CIRCUIT OTHER THAN THE OVERCURRENT DEVICE PROTECTING THE BRANCH CIRCUIT.
3. ALL SMOKE/CM DETECTING DEVICES SHALL BY ACCEPTED PURSUANT TO RULES AND REGULATIONS PROMULGATED BY THE COMMISSIONER, APPROVED BY THE BOARD OF STANDARDS AND APPEALS LISTED BY A NATIONALLY RECOGNIZED INDEPENDENT LABORATORY. NO DEVICE SHALL BE DEEMED TO BE IN COMPLIANCE WITH THIS PROVISION UNLESS IT IS EITHER THE IONIZATION OR PHOTOELECTRIC TYPE.
4. SMOKE/CM DETECTORS TO BE INSTALLED WHICH MEET THE REQUIREMENTS OF RS 4–6, 4.26.3, ADAPTABLE TO PROVIDE FLASHING LIGHTS ARRANGED TO FLASH IN CONJUNCTION WITH AUDIBLE SMOKE DETECTOR ALARM.
5. ACCESSIBLE ROUTES TO BE PROVIDED BETWEEN FACILITIES, PROVIDING A MINIMUM OF 36 INCHES OF WIDTH ALONG THE ACCESSIBLE ROUTE AS PER RS 4–6, 4.3.1, AND A MINIMUM OF 32 INCHES OF WIDTH AT DOORWAYS, AS PER RS 4–6,4.13.5.

1	Structural Steel - Erection & Bolting	BC 1704.3.2, BC 1704.3.3	TR-1
2	Structural Cold-Formed Steel	BC 1704.3.4	TR-1
3	Concrete Cast-In-Place	BC 1704.4	TR-1
4	Masonry	BC 1704.5	TR-1
5	Soils - Investigations (Boring/Test Pits)	BC 1704.7.4	TR-4
6	Underpinning	BC 1704.9.1	TR-1
7	Exterior Insulation Finish Systems (EIFS)	BC 1704.12	TR-1
8	Smoke Control Systems	BC 1704.14	TR-1
6	Structural Safety - Structural Stability	BC 1704.19	TR-1
10	Excavation - Sheeting, Shoring, and Bracing	BC 1704.19, BC 3304.4.1	TR-1
11	Sprinkler Systems	BC 1704.21	TR-1
12	Firestop, Draftstop, and Fireblock Systems	BC 1704.25	TR-1
13	Concrete Test Cylinders	BC 1905.6	TR-2
14	Concrete Design Mix	BC 1905.3	TR-3
15	Prelimenary	28-116.21, BC 109.2	TR-1
16	Footing and Foundation	BC 109.3.1	TR-1
17	Energy Code Compliance Inspections	BC 109.3.5	TR-8
18	Fire-Resistance Rated Construction	BC 109.3.4	TR-1
19	Protection of Foundation Insulation	(IA1), (IIA1)	TR-8
20	Insulation Placement and R Values	(IA2), (IIA2)	TR-8
21	Fenestration Thermal Values and Ratings	(IA3), (IIA3)	TR-8
22	HVAC and Service Water Heating Equipment	(IB3), (IIB3)	TR-8
23	HVAC and Service Water Heating System Controls	(IB4), (IIB4)	TR-8
24	Lighting in Dwelling Units	(IC2), (IIC2)	TR-8
25	Interior Lighting Power	(IIC3)	TR-8
26	Exterior Lighting Power	(IIC4)	TR-8
27	Lighting Controls	(IIC5)	TR-8
28	Exit Signs	(IIC6)	TR-8

PLUMBING AND DRAINAGE NOTES:

1. ALL PLUMBING AND GAS PIPING WORK SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE SUBCHAPTER 16 AND REFERENCE STANDARD RS–16 OF THE NEW YORK CITY BUILDING CODE.
2. ALL MATERIALS AND EQUIPMENT INSTALLED SHALL BE OF MANUFACTURE AND MODEL APPROVED FOR USE IN NEW YORK CITY, COMPLETE WITH M.E.A. APPROVAL NO'S.
3. ALL GAS–FIRED EQUIPMENT TO BE A.G.A OR M.E.A. APPROVED.
4. PLUMBING CONTRACTOR TO EXAMINE PROPOSED LAYOUT WITH REGARD TO EXISTING FIELD CONDITIONS, AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN ASSUMED FIELD CONDITIONS AND THOSE ENCOUNTERED DURING CONSTRUCTION. PLUMBING CONTRACTOR SHALL INFORM ARCHITECT OF ANY REVISIONS TO PLAN WHICH SHALL BE NECESSARY, BASED ON CONDITIONS UNCOVERED IN THE FIELD, IN ORDER TO INSTALL ALL FIXTURES, EQUIPMENT AND PIPING IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE AND/OR AS PER DESIGNS SHOWN IN THE CONTRACT DOCUMENTS.
5. PLUMBING CONTRACTOR SHALL ARRANGE AND OBTAIN INSPECTIONS AND REQUIRED SIGN–OFFS.
6. WATER SUPPLY BRANCHES AND RISERS SHALL BE SIZED TO ,PRODUCE VELOCITIES NOT IN EXCESS OF 8 FPS FOR THE PROBABLE DEMAND FLOW.
7. A SHUT–OFF VALVE AND DRAIN VALVE SHALL BE INSTALLED AT THE FOOT OF EACH WATER SUPPLY RISER, AS PER RS–16,P107.69(B).

MECHANICAL VENTILATION NOTES:

1. ALL BATHROOM AND TOILET ROOMS TO HAVE MECHANICAL VENTILATION PROVIDING MINIMUM 50 CFM EXHAUST. BATHROOM DUCT RISERS TO BE 8X8, MINIMUM 18 GA SHEET METAL.
2. ALL KITCHENETTES TO BE PROVIDED WITH MECHANICAL VENTILATION PROVIDING MIN 125 CFM EXHAUST KITCHEN DUCT RISERS TO 8X10, MINIMUM 18 GA SHEET METAL.
3. DUCT RISERS TO BE FIRE RETARDED WITH TWO (2)IAYERS TYPE 'X' GYPSUM BOARD ON ALL SIDES, ATTACHED WITH CONSTRUCTION ADHESIVE AND 18 GA WIRE TIES @ 4'–0' O.C. (NO SCREWS TO BE USED).
4. WHERE DUCTS PASS THROUGH FLOOR, FLOOR OPENINGS TO BE CUT TIGHT TO DUCT, AND REMAINING GAP BETWEEN DUCT AND FLOOR CONSTRUCTION TO BE FILLED WITH MINERAL WOOL.
5. EACH BATHROOM AND KITCHEN TO BE EQUIPPED WITH ITS OWN INDEPENDENT EXHAUST BLOWER WITH BACKDRAFT DAMPER.
6. EACH BATHROOM AND KITCHEN OUTLET TO BE EQUIPPED WITH A BS&A APPROVED FIRE DAMPER.
7. ALL DUCT WORK SHALL BE CONSTRUCTED AS PER RS–13–1 (301), DUCT HANGERS SHALL BE AS PER RS–13–1 (319).
8. MINIMUM 8'X8' OUTDOOR AIR INTAKE (F.A.I.) with BS&A APPROVED FIRE DAMPER TO BE PROVIDED FOR BOILER ROOM.

NOISE CONTROL IN MULTIPLE DWELLING BUILDINGS:

1. NOISE CONTROL IN MULTIPLE DWELLING BUILDINGS TO MEET N.Y.C. BUILDING CODE 27–768, 27–769 AND 27–770.

MULTIPLE DWELLING LAW NOTES:

1. LIGHTING AND VENTILATION OF ROOMS SHALL BE AS PER SECTION 31 OF MDL.
2. SIZE OF ROOMS AS PER SECTION 31 OF MDL.
3. ALCOVES SHALL BE AS PER SECTION 32 OF MDL
4. COOKING SPACES SHALL BE AS PER SECTION 33 OF MDL.
5. ROOMS IN BASEMENTS AND CELLARS SHALL BE AS PER SECTION 34 OF MDL.
6. BUILDING ENTRANCE DOORS AND LIGHTS SHALL BE AS PER SECTION 35 OF MDL.
7. WINDOWS AND SKYLIGHTS FOR PUBLIC HALLS AND STAIRS SHALL BE AS PER SECTION 36 OF MDL.
8. ARTIFICIAL HALL LIGHTING SHALL BE AS PER SECTION 37 OF MDL.
9. ENTRANCE HALLS TO BE AS PER SECTION 50 OF MDL.
10. BUILDING ENTRANCE DOORS, LOCKS AND INTERCOM SYSTEM SHALL BE SECTION 50–A OF MDL.
11. ALL SHAFTS, ELEVATORS AND DUMBWAITERS SHALL BE AS PER SECTION 51 OF MDL.
12. APARTMENT PEEPHOLES SHALL BE AS PER SECTION 51–A OF MDL.
13. MIRRORS IN SELF–SERVICE ELEVATORS SHALL BE AS PER SECTION 51–B OF MDL.
14. STAIRS SHALL BE AS PER SECTION 52 OF MDL.
15. FIRE ESCAPES SHALL BE AS PER SECTION 53 OF MDL.
16. WAINSCOTING SHALL BE AS PER SECTION 55 OF MDL.
17. ENTRANCE BOLTS AND MAIL BOXES SHALL BE AS PER SECTION 57 OF MDL.
18. ALL INCOMBUSTIBLE MATERIALS SHALL BE AS PER SECTION 58 OF MDL.
19. PARAPETS AND GUARD RAILINGS SHALL BE AS PER SECTION 62 OF MDL.
20. BELOW GRADE FLOORS SHALL COMPLY AS PER SECTION 63 OF MDL.
21. LIGHTING, GAS METERS, GAS AND OIL APPLIANCES, SHALL BE AS PER SECTION 64 OF MDL.
22. BOILER ROOMS SHALL BE AS PER SECTION 65 OF MDL.
23. WATER SUPPLY SHALL BE AS PER SECTION 75 OF MDL.
24. WATER CLOSET AND BATH ACCOMMODATIONS SHALL BE AS PER SECTION 76 OF MDL.
25. PLUMBING AND DRAINAGE SHALL BE AS PER SECTION 77 OF MDL.
26. REPAIRS SHALL BE MADE AS PER SECTION 78 OF MDL.
27. HEAT SHALL BE PROVIDED AS PER SECTION 79 OF MDL.
28. CLEANLINESS SHALL BE AS PER SECTION 80 OF MDL.
29. RECEPTACLES FOR WASTE MATTER SHALL BE AS PER SECTION 81 OF MDL.
30. PRIVACY SHALL BE AS PER SECTION 82 OF MDL.
31. JANITORIAL SERVICES SHALL BE AS PER SECTION 83 OF MDL.
32. CONSTRUCTION STANDARDS FOR THE CONTROL OF NOISE SHALL BE AS PER SECTION 84 OF MDL.

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

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Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

Notes: 1

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

N-100.00

Sheet:	26 of 30
Scale:	NTS

DOB Scan Sticker

BUILDING CODE NOTES:

1. ALL MATERIALS, ASSEMBLIES, FORMS AND METHODS OF CONSTRUCTION AND SERVICE EQUIPMENT SHALL COMPLY WITH THE REQUIREMENTS OF THE SECTION C27-130.
2. ALL ELEVATIONS INDICATED ARE ACTUAL ELEVATIONS AND REFER TO DATUM USED BY TOPOGRAPHICAL BUREAU, BOROUGH PRESIDENT'S OFFICE, MANHATTAN, WHICH IS 2.75' ABOVE THE U.S. COAST AND GEODETIC SURVEY MEAN SEA LEVEL DATUM AT SANDY HOOK.
3. AT LEAST 24 HOUR WRITTEN NOTICE SHALL BE GIVEN TO THE COMMISSIONER BEFORE COMMENCEMENT OF WORK (C27-195).
4. FIVE DAYS PRIOR NOTICE SHALL BE GIVEN TO ADJOINING LOT OWNERS AFFECTED BY FOUNDATION, EARTHWORK OR DEMOLITION (C27-165 & C27-169).
6. ALL PAVED WALKS, SURFACES AND AREAWAYS WILL BE DRAINED ADEQUATELY WITHIN THE SITE.
7. WHERE PIPES, WIRES, CONDUITS, DUCTS, ETC. PIERCE FIRE PROTECTION OF % INDIVIDUALLY ENCASED STRUCTURAL MEMBERS, SUCH PENETRATION SHALL NOT EXCEED 2 OF ANY ONE FACE OF SUCH PROTECTION, AND SHALL BE CLOSED OFF WITH CLOSE FITTING METAL ESCUTCHEONS OR PLATES. (C27-324A).
8. CEILINGS THAT CONTRIBUTE TO THE REQUIRED FIRE-RESISTANCE RATING OF A FLOOR OR ROOF ASSEMBLY SHALL BE CONTINUOUS BETWEEN FIRE DIVISION, FIRE SEPARATIONS OR VERTICAL PARTITIONS HAVING THE SAME FIRE RESISTANCE RATING AS THE CEILING. CONCEALED SPACE NOT EXCEEDING ABOVE SUCH CEILING, UNLESS SPRINKLERED, SHALL BE FIRE STOPPED INTO AREAS 3,000 SQUARE FEET, PROTECTED BY SELF-CLOSING OPENING PROTECTIVES (C27-327).
9. DUCTS, PIPES, AND CONDUITS PASSING THROUGH RATED CONSTRUCTION SHALL HAVE SPACES NOT EXCEEDING 1/2 INCH PACKED WITH ROPE ASBESTOS OR MINERAL WOOL AND CLOSED OFF WITH CLOSE FITTING METAL ESCUTCHEONS. AGGREGATE AREA OF SUCH OPENING SHALL NOT EXCEED 25 SQUARE INCHES IN ANY 100 SQUARE FEET OF WALL OR FLOOR AREAS UNLESS PROTECTED BY RATED SELF-CLOSING DEVICES (C27-343).
10. FIRE DIVISIONS SHALL COMPLY WITH PROVISIONS OF SECTION C27-340 AND SHALL BE CONTINUOUS THROUGH ANY CONCEALED SPACE IN FLOOR OR ROOF CONSTRUCTION.
11. TENANTS NOT SEPARATED BY FIRE DIVISIONS, SHALL BE SEPARATED BY FIRE SEPARATIONS, BUT NOT LESS THAN ONE HOUR SEPARATIONS SHALL CONTINUE SHALL CONTINUE THROUGH CONCEALED SPACES ABOVE (C27-341).
12. OPENING IN FIRE DIVISIONS AND SEPARATIONS TO COMPLY WITH SECTION C27-342.
13. CONCEALED SPACES WITHIN PARTITIONS, WALLS, FLOORS, STAIR, FURRING, PIPE SPACES, COLUMN ENCLOSURES, ETC., SHALL BE FIRE STOPPED (EXCEPT WHERE CONCEALED SPACE IS SPRINKLERED) WITH NON-COMBUSTIBLE MATERIAL. (C27-351)
14. FINISHED FLOORING IN ALL EXITS SHALL BE OF NON-COMBUSTIBLE MATERIAL (C27-351).
15. ALL EXITS SHALL BE KEPT READILY ACCESSIBLE AND UNOBSTRUCTED AT ALL TIMES.
16. STAIRS SHALL HAVE HANDRAILS ON EACH SIDE (EXCEPT THAT STAIRS LESS THAN 44 INCHES WIDE SHALL HAVE A HANDRAIL ON ONE SIDE ONLY). HANDRAILS SHALL PROVIDE A FINGER CLEARANCE OF 1 1/2 INCHES AND SHALL PROJECT NOT MORE THAN 3 1/2 INCHES INTO REQUIRED STAIR WIDTH. STAIRS MORE THAN 88 INCHES WIDE SHALL HAVE INTERMEDIATE HANDRAILS. HEIGHT OF HANDRAIL SHALL BE BETWEEN 30 AND 34 INCHES ABOVE THE TREAD NOSING. MATERIALS OF HANDRAILS SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 150. HANDRAILS SHALL BE DESIGNED TO RESIST A SIMULTANEOUS APPLICATION OF A LATERAL FORCE OF 40#/L.F. AND VERTICAL LOAD OF 50#/L.F. LANDINGS AND PLATFORMS SHALL BE ENCLOSED ON SIDES BY WALL OR RAILINGS, AT LEAST 3-0" HIGH. RISERS SHALL BE MAXIMUM 7 3/4" HIGH, TREADS MINIMUM 9 1/2" WIDE, EXCLUSIVE OF NOSING AND THE SUM OF 2 RISERS PLUS ONE TREAD EXCLUSIVE OF NOSING SHALL BE NOT LESS THAN 24 NOR MORE THAN 25 1/2.
17. TREADS AND LANDING SHALL BE BUILT OF/OR SURFACED WITH NONSKID MATERIALS.
18. ILLUMINATION OF AT LEAST 5 FOOT CANDLES MEASURED AT THE FLOOR LEVEL SHALL BE MAINTAINED CONTINUOUSLY DURING OCCUPANCY, IN EXITS AND THEIR ACCESS FACILITIES (C27-381).
19. EXIT LIGHTING SHALL BE ON CIRCUITS, TAKEN OFF AHEAD OF MAIN SWITCH.
20. LOCATION OF EVERY EXIT ON FLOOR SHALL BE CLEARLY INDICATED BY EXIT SIGNS PLACED IF REQUIRED AT ANGLE WITH EXIT OPENINGS. INSTALL DIRECTIONAL SIGNS TO SERVE AS GUIDES FROM ALL PORTIONS OF THE CORRIDOR OPENING ON FLOOR (C27-383).
21. EXIT SIGNS SHALL BE INTERNALLY LIGHTED, HAVING AN INITIAL BRIGHTNESS OR LETTER OF AT LEAST 25 FOOT LAMBERTS. LETTERS SHALL BE RED, THE BACKGROUND SHALL BE WHITE. LETTERS SHALL BE BLOCK LETTERING AT LEAST 4 1/2" HIGH, WITH 9/16" STROKES BACKGROUND. %
22. CORRIDORS AND EXIT PASSAGEWAYS SHALL HAVE A CLEAR HEIGHT OF 7'-6" FOR AT LEAST 75 OF THE FLOOR AREA WITH NO POINT LESS THAN 7 FEET IN HEIGHT. PROJECTION BELOW THE CEILING SHALL NOT OBSTRUCT FULL VIEW OF EXIT SIGNS (C27-369B).
23. CONDUITS IN FIRE-RATED PARTITIONS WILL NOT EXCEED 3/4 INCH DIAMETER. OUTLETS IN SUCH PARTITIONS WILL BE BACKED UP WITH APPROVED MATERIALS.
24. NO CONDUITS, PIPES, MEDICINE CABINETS, ETC., SHALL ENCROACH UPON FIRE RATED PARTITIONS ENCLOSING PUBLIC CORRIDORS, STAIRS, ELEVATOR SHAFTS OR VENT SHAFTS.
25. EXIT DOORS SHALL BE READILY OPERABLE AT ALL TIMES FROM THE SIDE FROM WHICH EGRESS IS TO BE MADE. DOORS OPENING INTO INTERIOR ENCLOSED STAIRS SHALL NOT BE LOCKED FROM TENANT SIDE, EXCEPT THEY MAY BE LOCKED TO PREVENT ACCESS TO THE STAIR FROM THE OUTDOORS AT STREET LEVEL.
26. ALL WIRE GLASS IN RATED DOORS AND WINDOWS WILL BE OF A TYPE APPROVED BY THE B.S.A.
27. ALL CLEANING OF WINDOWS WILL BE IN CONFORMITY WITH THE WINDOW CLEANING CODE.
28. PENETRATION OF OPENINGS IN WALLS, PARTITIONS, OR FLOORS FOR PIPE SLEEVES, MEDICINE CABINETS, HAMPERS, ELECTRIC DEVICES, ETC., SHALL BE PACKED, SEALED, LINED, OR OTHERWISE ISOLATED TO MAINTAIN THE REQUIRED S.T.C. RATING.
29. ALL OPENINGS TO ELEVATOR SHAFTS WILL BE PROVIDED WITH DOORS HAVING A 1 1/2 HOUR RATING. ALL DOORS TO BE SELF-CLOSING AND AT OPTION OF THE OWNER PROVIDED WITH VISION PANEL OF APPROVED TYPE CLEAR WIRE PLATE GLASS.
30. MASONRY MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF RS 10-1, SECTION 3. MORTAR TO BE TYPE "N".
31. THE DESIGN OF MASONRY WALLS IS PREDICATED UPON ANALYSIS OF STRESSES AS PER RS 10-1, SEC. 4.
32. ALL MASONRY LOAD BEARING AND NON-LOAD BEARING WALLS SHALL BE BONDED IN ACCORDANCE WITH SECTION 7, RS 10-1.
33. CONTRACTOR SHALL CHECK ALL CONDITIONS AND DIMENSIONS AT SITE BEFORE COMMENCING CONSTRUCTION. ARCHITECT SHALL BE NOTIFIED OF ANY ERROR OR OMISSIONS BEFORE WORK IN QUESTION IS STARTED.
34. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED PRIOR TO STARTING THE WORK AND ALSO OBTAIN THE CERTIFICATE OF OCCUPANCY.
35. REMOVE ALL EXISTING WALLS, PARTITIONS, DOORS, FLOORING, CEILINGS, FIXTURES, ETC. AS SHOWN ON DRAWINGS OR AS REQUIRED TO INSTALL NEW WORK.
36. WHERE EXISTING BEARING WALLS, BEAMS OR ANY OTHER STRUCTURAL SUPPORT OF THE EXISTING BUILDING IS BEING REMOVED, CONTRACTOR SHALL DO ALL NECESSARY SHORING, NEEDLING, UNDERPINNING, ETC. AS REQUIRED TO MAINTAIN THE SAFETY OF THE STRUCTURE, THE WORKERS, AND THE GENERAL PUBLIC. THE STRUCTURE, THE WORKERS, AND THE GENERAL PUBLIC.
37. PATCH AND REPAIR EXISTING CONSTRUCTION WHERE DISTURBED BY NEW WORK AND AS CALLED FOR ON DRAWINGS.
38. ALL SUCH MATERIALS DESIGNATED FOR "CONTROLLED INSPECTION" SHALL BE INSPECTED BY AN ARCHITECT OR ENGINEER RETAINED BY THE OWNER.
39. ORNAMENTAL PROJECTIONS AND DOOR SWINGS SHALL NOT PROJECT MORE THAN 18" BEYOND THE BUILDING LINE.
42. INTERIOR FINISHES, EXCEPT FINISHED FLOORING, FLOOR COVERINGS, WALL COVERINGS AND COATING LESS THAN .036 IN TOTAL THICKNESS, SHALL HAVE A FLAME SPREAD RATING NOT GREATER THAN THAT OF THE FOLLOWING INTERIOR FINISH CLASSES:

LOCATION	CLASS R-2	
EXITS AND SHAFTS	A	(0-25)
ROOMS GREATER THAN 1500 SQ. FEET	B	(26-75)
ROOMS LESS THAN 1500 SQ. FEET	B	(26-75)

43. ALL NEW STEEL RESTING ON MASONRY SHALL HAVE THREE COURSES OF BRICK UNDER SAME AND BEARING PLATES UNDER STEEL.
44. ALL REINFORCED CONCRETE MATERIALS, DESIGNS AND CONSTRUCTION SHALL BE AS PER ACT 318, 1963 EDITION WITH MODIFICATIONS PER RS 10-3.
45. PLAIN CONCRETE SHALL HAVE A MINIMUM FACTOR OF FIVE BAGS PER CUBIC YARD AND SHALL DEVELOP A STRENGTH OF 2,500 P.S.I. AS PER TABLE 10.3, AND A WATER-CEMENT RATIO SLUMP OF 5:1. OTHER CONCRETE REQUIREMENTS ARE LISTED ON THE STRUCTURAL DRAWINGS.
46. THREE TEST CYLINDERS SHALL BE PROVIDED FOR EACH FIFTY CUBIC YARDS OF CONCRETE PLACED IN ONE DAY, AS PER RS 10.
47. ALL STRUCTURAL STEEL FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST ASTM SPECIFICATIONS FOR A-36 AND A-50 STEEL.]
48. CONTRACTOR SHALL FILE THE AFFIDAVIT OF THE PRODUCER OF STEEL, CERTIFYING THAT THE PROVISIONS OF THE LOCAL CODE ARE MET.
49. ALL CONNECTIONS SHALL BE 3/4" BOLTS OR GREATER, AS REQUIRED.
50. ALL STEEL SURFACES NOT IN CONTACT WITH CONCRETE, SHALL RECEIVE ONE SHOP COAT OF APPROVED PAINT.
51. ALL WELDING TO BE PERFORMED BY N.Y.C. LICENSED WELDERS.
52. LINTELS OVER OPENINGS WIDER THAN FOUR FEET IN MASONRY WALLS SHALL BE FIRE-PROTECTED WITH MATERIALS HAVING THE REQUIRED FIRE RESISTANCE RATING OF THE WALL SUPPORTED.
53. NEW MASONRY SHALL BE LAID UP IN TYPE M OR S PORTLAND CEMENT MORTAR, 1:3 MIX WITH % LIME BY VOLUME, AS PER RS 10-46, ASTM C270, 1964. NOT MORE THAN 10.
54. BRICK SHALL BE ANCHORED TO BLOCK WITH TRUSS-TYPE GALVANIZED METAL ANCHORS EVERY 160 SQUARE INCHES.
55. BLOCK WALLS SHALL HAVE "DUR-O-WALL" METAL WALL TIES EVERY OTHER BLOCK COURSE.
56. A MINIMUM OF THREE COURSES OF BRICK SHALL BE PROVIDED UNDER ALL JOISTS RESTING ON MASONRY.
57. ALL PLUMBING WORK SHALL BE PERFORMED BY A LICENSED PLUMBER AND SHALL CONFORM TO ALL CODE REQUIREMENTS.
58. ALL FIXTURES SHALL BE PROPERLY VENTED AND SHALL HAVE SHUT-OFF VALVES AT EACH FIXTURE WITH WATER SUPPLY IN COPPER PIPES.
59. ALL SOIL, WASTE AND VENT LINES IN FLOOR 2" AND LARGER, SHALL BE E.H.C.I., AND SHALL HAVE CLEAN OUTS AT THE BASE OF ALL LINES. VENTS SHALL PROJECT THROUGH THE ROOF, 4"-0".
60. TEMPERATURE REQUIREMENTS SHALL BE A 70 DEGREE INSIDE TEMPERATURE WHEN 0 DEGREES OUTSIDE, FOR ALL OCCUPIED AREAS.
61. VENTILATION OF TOILETS SHALL COMPLY WITH CODE.
62. ALL DUCTWORK AND FIRE DAMPERS SHALL COMPLY WITH CODE.
63. ALL SERVICE EQUIPMENT SHALL MEA APPROVED AND AN EQUIPMENT USE PERMIT SHALL BE OBTAINED BY THE INSTALLATION CONTRACTOR FOR ALL SUCH EQUIPMENT.
64. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
65. THE ENTIRE ELECTRICAL INSTALLATION SHALL CONFORM WITH ALL LOCAL LAWS, THE NATIONAL ELECTRICAL CODE AND LOCAL UTILITY'S REQUIREMENTS.
66. ALL PARTITIONS TO BE WEDGED TIGHTLY TO CEILING.
67. PLATE GLASS TO COMPLY WITH SECTION C26-550.2.
68. GLASS DOORS TO COMPLY WITH 501-68 SR AS APPROVED BY THE B.S.A. 69. HUNG CEILING TO COMPLY WITH SECTION C27-350 & RS 5-16.
70. HUNG CEILING TO BE OF INCOMBUSTIBLE MATERIAL.
71. PROVIDE B.S.A. APPROVED TYPE PHOSPHORESCENT EXIT LIGHTS AND SIGNS AS PER SECTION C26-607.1.
72. PROVIDE SIGNS AT ELEVATOR LANDINGS AS PER SECTION C27-388.
73. PROVIDE FLOOR NUMBERING SIGNS AS PER SECTION C27-394.
74. PROVIDE STAIR AND ELEVATOR IDENTIFICATION SIGNS AS PER SECTION C27-393.
75. COMPLY WITH LOCAL LAW 76 FOR ASBESTOS.
76. COMPLY WITH LOCAL LAW 58 FOR HANDICAPPED ACCESSIBILITY.
77. UPON COMPLETION OF WORK, OWNER SHALL OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT.

TENANT SAFETY NOTES:

1. BUILDING TO BE VACANT DURING CONSTRUCTION.

LOCAL LAW 58/87 NOTES:

1. All units shall be adaptable as required by Local Law 58/87.
2. Adaptable units shall have door widths and clear floor spaces per RS 4-6.
3. Interior access, floor surfaces, adaptable kitchens, adaptable kitchenettes and adaptable bathrooms shall be per RS 4-6.
4. Adaptability shall apply to water closet and toilet paper dispenser, lavatory and removable base cabinet, mirrors, medicine cabinet, bathtub and controls, bathtub and shower enclosure, reinforced areas for grab bars, clearance between opposing base cabinets, counter tops, appliances and walls, adjustable or replaceable sink and removable base cabinet, as well as storage cabinets, drawers and shelves.

GENERAL NOTES: HOUSING MAINTENANCE CODE:

1. THE OWNER OF THE MULTIPLE DWELLINGS SHALL KEEP THE PREMISES IN GOOD REPAIR.
2. THE OWNER SHALL KEEP THE ROOF, YARDS, COURTS & OTHER OPEN SPACES CLEAN & FREE FROM DIRT, FILTH, GARBAGE OR OTHER OFFENSIVE MATERIALS.
3. PAINTING OF PUBLIC PARTS & WITHIN DWELLINGS TO COMPLY WITH SECTION D26-12.01 H.M.C. 4. PAINTING OF WINDOW FRAMES TO COMPLY WITH SECTION D26-12.03 H.M.C.
5. PREMISES TO BE MAINTAINED & KEPT FREE OF RODENT & INSECT INFESTATION AS PER SECTION D26-13.03 & D26-13.05 H.M.C.
6. RECEPTACLES FOR COLLECTION OF WASTE MATTER TO BE PROVIDED AS PER SECTION D26-13.03 & D26-14.05 H.M.C.
7. PROVIDE & MAINTAIN A SUPPLY OF PURE & WHOLESOME WATER SUFFICIENT IN QUANTITY & AT SUFFICIENT PRESSURE TO KEEP ALL PLUMBING FIXTURES ADEQUATELY SUPPLIED FOR THEIR SANITARY MAINTENANCE.
8. MAINTAIN & KEEP IN GOOD REPAIR THE PLUMBING & DRAINAGE SYSTEM INCLUDING WATER CLOSETS, TOILETS, SINKS & OTHER FIXTURES.
9. THE DRAINAGE OF ROOFS, COURTS & YARDS SHALL COMPLY WITH D26-16.03 H.M.C.
10. HEAT & HOT WATER REQUIREMENTS AS PER ARTICLE 17 OF H.M.C. CENTRAL HEATING SYSTEM AS PER BUILDING CODES; MINIMUM TEMPERATURES TO BE MAINTAINED AS PER SECT. D26-17.03. CENTRAL HEATING SYSTEM TO BE INSPECTED YEARLY BY QUALIFIED PERSON IN ACCORDANCE WITH SECTION D26-17.05 OF H.M.C. SUPPLY OF HOT WATER AS PER SECTION D26-17.07.
11. YEARLY INSPECTIONS OF CENTRAL HEATING PLANT BY QUALIFIED PERSON TO BE MADE AS PER SECTION D26-17.05 H.M.C.
12. PROVIDE ELECTRIC LIGHTING EQUIPMENT IN ALL DWELLINGS AS PER SECTION D26-19.01.
13. PROVIDE & MAINTAIN ELECTRIC LIGHTING FIXTURES IN EVERY PUBLIC HALL, STAIR OR FIRESTAIR IN ACCORDANCE WITH SECTION D26-19.03 & 19.05.
14. PROPER ELECTRIC LIGHTS TO BE PROVIDED NEAR ENTRANCE WAYS, YARDS & COURTS AS PER SECTION D26-19.07 H.M.C., ON SEPARATE CIRCUIT OR CONNECTED TO HOUSE LINE SERVICING PUBLIC HALLS, AND IN ACCORDANCE WITH REQUIREMENTS & APPROVAL OF THE DEPARTMENT OF WATER SUPPLY, GAS & ELECTRICITY.
15. BOARD OF STANDARDS & APPEALS APPROVED TYPE PEEPHOLES APPROXIMATELY 5 FEET ABOVE FINISHED FLOOR TO BE PROVIDED IN ENTRANCE DOORS OF DWELLING UNITS AS PER SECTION D26.01 H.M.C. & DEPARTMENT RULES & REGULATIONS.
16. ENTRANCE DOORS SHALL BE PROVIDED WITH HEAVY DUTY LATCH SET & A HEAVY DUTY DEAD BOLT OPERABLE WITH A KEY FROM THE OUTSIDE & A THUMB-TURN FROM THE INSIDE. EQUIP DOORS WITH A CHAIN DOOR GUARD SO AS TO PERMIT PARTIAL OPENING. 17. PROPERLY MOUNTED & SECURED POLISHED METAL VIEWING MIRRORS TO BE PROVIDED WITHIN SELF-SERVICE ELEVATORS AS PER SECTION D26-20.03 H.M.C. & DEPARTMENT RULES & REGULATIONS.
18. KEY LOCK IN THE ENTRANCE DOOR TO EACH DWELLING UNIT WITH AT LEAST ONE KEY TO BE PROVIDED BY OWNER AS PER SECITION D26-20.05 H.M.C.
19. APPROVED TYPE MAIL RECEPTACLES & DIRECTORY OF PERSONS LIVING IN DWELLING TO BE PROVIDED AS PER SECTION D26-21.01 H.M.C. & REGULATIONS OF POST OFFICE DEPARTMENT.
20. PROPER FLOOR SIGNS TO BE PROVIDED IN PUBLIC HALL NEAR STAIRS & ELEVATORS & WITHIN STAIR ENCLOSURE AS PER SECTION D26-21.03 H.M.C. & DEPARTMENT RULES & REGULATIONS.
21. PROPER STREET NUMBERS TO BE PROVIDED IN PUBLIC HALL OF THE DWELLING AS PER SECTION 82 (3)-1.0 ADMINISTRATIVE CODE, SECTION D26-21.03 H.M.C. AND RULES & REGULATIONS OF BOROUGH PRESIDENT.
22. A RESIDENT MANAGER RESPONSIBLE FOR OPERATION & MAINTENANCE OF ROOMING UNITS TO BE PROVIDED AS PER SECTION D26-21.09 H.M.C.
23. PROPER JANITORIAL SERVICES TO BE PROVIDED AS PER SECTION D26-22.05 H.M.C.
24. ALL COMBUSTIBLE MATERIALS WITHIN ONE FOOT OF COOKING APPARATUS TO BE PROPERLY FIRE RETARDED & MINIMUM 2-FOOT CLEARANCE MAITAINED ABOVE EXPOSED COOKING SURFACE. COMBUSTIBLE MATERIAL BETWEEN 2 FEET & 3 FEET ABOVE EXPOSED COOKING SURFACE TO BE FIRE RETARDED. SECTION D26-32.05 H.M.C. & DEPARTMENT REULES & REGULATIONS.
25. NO KITCHEN SHALL BE OCCUPIED FOR SLEEPING PURPOSES. SECTION D26-33.05 H.M.C.
26. MAXIMUM TWO BOARDERS, ROOMERS OR LODGERS PERMITTED TO EACH FAMILY EXCEPT THAT MAXIMUM ONE BOARDER, ROOMER OR LODGER PERMITTED IF LOCATED IN ZONING TO ONE & TWO FAMILY DWELLINGS.
27. REGISTRATION STATEMENT TO BE FILED AS PER SECTION D26-41.01 & D26-41.03 H.M.C.
28. REGISTRATION IDENTIFICATION SIGN CONTACT AND DWELLING SERIAL NUMBER TO BE POSTED AS PER SECTION D26-41.15 H.M.C.
29. IDENTIFICATION OF MANAGING AGENT OR OWNER TO BE INDICATED ON TENANT'S RENT RECEIPT AS PER SECTION D26-41.17 H.M.C.

RECREATION ROOM NOTES:

1. SAID RECREATION ROOMS ARE BEING PROVIDED IN CONJUNCTION WITH THE APARTMENTS DIRECTLY ABOVE.
2. SAID RECREATION ROOMS WILL BE SMALLER THAN THE APARTMENTS THAT THEY ARE ACCESSORY TO.
3. SAID RECREATION ROOMS ARE CONNECTED WITH APARTMENTS DIRECTLY ABOVE VIA INTERNAL PRIVATE STAIR.
4. SAID RECREATION ROOMS ARE PROVIDED WITH EGRESS VIA FPSC DORS AT THE LOWER LEVEL DIRECTLY INTO THE PUBLIC HALL.
5. SAID RECREATION ROOMS WILL NOT BE USED AS "LIVING ROOMS" OR FOR SLEEPING PURPOSES.
6. SAID RECREATION ROOMS WILL NOT BE RENTED INDEPENDENTLY.
7. SAID RECREATION ROOMS WILL BE PROVIDED WITH A MINIMUM SIZED POWDER ROOM BARELY LARGE ENOUGH TO ACCOMODATE A WATER CLOSET AND LAVATORY. SAID MINIMAL TOILET IS PROVIDED FOR CONVENIENCE PURPOSES ONLY.

REFUSE CHUTES AND REFUSE ROOMS:

§24-01 CONSTRUCTION AND MAINTENANCE OF REFUSE CHUTES AND REFUSE ROOMS.

§24-01 (A) REFUSE CHUTE ENCLOSURES. REFUSE CHUTES USED FOR CONVEYANCE OF GARBAGE AND RUBBISH FROM UPPER FLOORS OF A BUILDING TO A CELLAR OR OTHER LOCATION SHALL BE CONSTRUCTED WITH AN ENCLOSURE OF BRICK MASONRY AT LEAST EIGHT INCHES IN THICKNESS OR OF REINFORCED CONCRETE AT LEAST SIX INCHES IN THICKNESS, EXCEPT AS OTHERWISE PROVIDED IN THIS SECTION.

§24-01 (B) HEIGHT AND SERVICE OPENINGS. REFUSE CHUTES SHALL EXTEND FROM THE REFUSE COLLECTION ROOM TO A HEIGHT OF AT LEAST SIX FEET ABOVE THE ROOF. A SPARK ARRESTOR SHALL BE PROVIDED AT THE TOP OF THE CHUTE ABOVE THE ROOF. SERVICE OPENINGS INTO THE CHUTE SHALL BE EQUIPPED WITH APPROVED SELF-CLOSING HOPPERS SO CONSTRUCTED THAT THE CHUTE IS CLOSED OFF WHILE THE HOPPER IS BEING LOADED AND SO THAT NO PART WILL PROJECT INTO THE CHUTE. THE AREA OF SERVICE OPENING SHALL NOT EXCEED ONE THIRD THE AREA OF THE CHUTE. HOPPER DOORS SHALL HAVE A FIRE RESISTIVE RATING OF AT LEAST ONE HOUR, UNLESS SEPARATED FROM THE CORRIDOR BY A FIREPROOF, SELF-CLOSING DOOR IN WHICH CASE THEY SHALL BE CONSTRUCTED OF INCOMBUSTIBLE MATERIAL.

§24-01 (D) REFUSE CHUTES IN NEW CONSTRUCTION. WHERE REFUSE COMPACTING SYSTEMS ARE REQUIRED HEREAFTER IN NEW CONSTRUCTION, REFUSE CHUTES SHALL BE REQUIRED FOR CONVEYANCE OF GARBAGE AND RUBBISH TO REFUSE COLLECTION ROOMS, EXCEPT THAT REFUSE CHUTES WILL NOT BE REQUIRED IN CLASS A MULTIPLE DWELLINGS WHICH ARE FOUR STORIES OR LESS IN HEIGHT. REFUSE CHUTES ERECTED HEREAFTER IN NEW CONSTRUCTION SHALL BE OF A TYPE APPROVED BY THE BOARD OR SHALL COMPLY WITH THE REQUIREMENTS OF SUBDIVISIONS (A) AND (B) OF THIS SECTION. CHUTES SHALL BE CONSTRUCTED STRAIGHT AND PLUMB, WITHOUT PROJECTIONS OF ANY KIND WITHIN THE CHUTE. REFUSE CHUTES SHALL HAVE AN INSIDE DIMENSION OF AT LEAST TWENTY-FOUR INCHES FOR THE FULL HEIGHT OF THE CHUTE. ALL CHUTES SHALL BE SUPPORTED ON FIREPROOF CONSTRUCTION HAVING AT LEAST A THREE HOUR RESISTIVE RATING.

§24-01 (E) REFUSE COLLECTION ROOMS. A REFUSE COLLECTION ROOM SHALL BE PROVIDED AT THE BOTTOM OF ALL CHUTES AT THE CELLAR OR LOWEST STORY LEVEL TO RECEIVE THE REFUSE. SUCH ROOMS SHALL BE ENCLOSED WITH WALLS AND ROOFS CONSTRUCTED OF MATERIAL HAVING A MINIMUM FIRE RESISTIVE RATING OF THREE HOURS, EXCEPT THAT GYPSUM MASONRY MAY NOT BE USED FOR SUCH ENCLOSURE WALLS. OPENINGS TO SUCH ROOMS SHALL BE PROVIDED WITH FIREPROOF, SELF-CLOSING DOORS HAVING A MINIMUM FIRE RESISTIVE RATING OF ONE AND ONE-HALF HOURS. IT SHALL BE UNLAWFUL TO KEEP SUCH DOORS OPEN. REFUSE CHUTES SHALL EXTEND TO THE UNDERSIDE OF THE ROOF OF THE REFUSE ROOM OR LOWER. ROOFS SHALL BE AT LEAST SIX INCHES AWAY FROM COMBUSTIBLE FLOOR OR WALL CONSTRUCTION. REFUSE ROOMS SHALL BE USED ONLY FOR RECEIPT OF REFUSE AND FOR REFUSE COMPACTING EQUIPMENT. REFUSE ROOMS SHALL BE PROVIDED WITH SUFFICIENT SPRINKLERS TO SPRINKLE ALL PARTS OF THE ROOM, WITH AT LEAST TWO SPRINKLER HEADS PROVIDED AND WITH SPRINKLERS SO SEPARATED AS TO SPRINKLE A MAXIMUM AREA OF THE ROOM WHEN ONE OF THE SPRINKLERS IS BLOCKED OR NOT OPERATING. A HOSE CONNECTION SHALL BE PROVIDED WITHIN THE REFUSE ROOM. EXISTING REFUSE ROOMS AND INCINERATOR ROOMS THAT HAVE BEEN APPROVED BY THE DEPARTMENT FOR SUCH USE MAY BE RETAINED AS APPROVED.

§24-01 (F) COLLECTION ROOM FLOORS. THE FLOOR WITHIN THE ROOM FOR THE COLLECTION OF REFUSE SHALL BE CONSTRUCTED OF CONCRETE AND SHALL BE SLOPED TO A FLOOR DRAIN WITHIN THE ROOM CONNECTED TO THE HOUSE DRAIN. THE DRAIN SHALL BE PROVIDED WITH A PROTECTIVE SCREEN TO RETAIN SOLID MATERIAL. FLOOR DRAIN TRAPS SHALL BE READILY ACCESSIBLE FOR CLEANING.

§24-01 (G) USE OF EXISTING COMBUSTION CHAMBERS. EXISTING INCINERATOR COMBUSTION CHAMBERS MAY BE USED IN WHOLE OR IN PART AS REFUSE COLLECTING ROOMS FOR COLLECTION OF REFUSE AND FOR COMPACTING EQUIPMENT PROVIDED THE GRATES ARE REMOVED AND PROVIDED THEY COMPLY WITH THE PROVISIONS OF SUBDIVISION (E) OF THIS SECTION.

§24-01 (H) SPRINKLER OPERATION AND WATER SUPPLY. SPRINKLERS SHALL BE DESIGNED TO OPERATE AUTOMATICALLY AT A TEMPERATURE NOT EXCEEDING ONE HUNDRED SIXTY-FIVE DEGREES FAHRENHEIT. THEY MAY BE ELECTRICALLY CONTROLLED PROVIDED SUCH SPRINKLERS ARE APPROVED BY THE BOARD OF STANDARDS AND APPEALS. SPRINKLERS MAY BE CONNECTED TO THE COLD WATER SUPPLY OF THE BUILDING AT THE POINT WHERE SUCH SERVICE ENTERS THE BUILDING OR AT THE BASE OF A WATER SUPPLY RISER PROVIDED THE PIPING OF SUCH SERVICE OR RISER IS OF ADEQUATE SIZE. NO CONNECTIONS, EXCEPT THOSE FOR SPRINKLERS, SHALL BE MADE TO THE SPRINKLER PIPING.

§24-01 (I) HOPPERS, CUT OFF DOORS AND COMPACTORS. A HOPPER AND CUT OFF DOOR SHALL BE PROVIDED AT THE BOTTOM OF THE REFUSE CHUTE TO REGULATE AND GUIDE THE FLOW OF REFUSE INTO CONTAINERS. WHERE COMPACTORS ARE INSTALLED SO THAT THE REFUSE FLOWS DIRECTLY INTO THE COMPACTING EQUIPMENT, THE EQUIPMENT MAY BE USED IN PLACE OF THE HOPPER AND CUT OFF DOOR. COMPACTING EQUIPMENT SHALL BE ARRANGED TO OPERATE AUTOMATICALLY WHEN THE LEVEL OF RUBBISH IS NOT HIGHER THAN THREE FEET BELOW THE LOWEST DOOR.COMPACTORS SHALL BE LOCATED ENTIRELY WITHIN THE ENCLOSURE OF THE REFUSE ROOM AND FORMER COMBUSTION CHAMBER WHERE THE LATTER IS RETAINED, EXCEPT THAT MOTORS, PUMPS AND CONTROLS MAY BE INSTALLED IN ADJACENT ROOMS.WHERE REFUSE IS REMOVED MANUALLY, THE REFUSE SHALL BE REMOVED WITH SUFFICIENT FREQUENCY SO THAT IT WILL AT NO TIME EXTEND LESS THAN THREE FEET BELOW THE LEVEL OF THE LOWEST HOPPER DOOR OPENING INTO THE CHUTE.

§24-01 (J) NUMBER OF SPRINKLER HEADS. SUFFICIENT SPRINKLERS SHALL BE INSTALLED IN THE REFUSE ROOM AND FORMER COMBUSTION CHAMBER TO PROVIDE SPRINKLER COVERAGE FOR THE ENTIRE AREA OF EACH UNIT.

§24-01 (J) (1) ADEQUATE LIGHTING SHALL BE PROVIDED IN REFUSE ROOMS.

§24-01 (J) (2) REFUSE CHUTES, REFUSE ROOMS, HOPPERS AND ALL PARTS OF THE REFUSE COLLECTING SYSTEM SHALL BE MAINTAINED IN A CLEAN AND SANITARY CONDITION AT ALL TIMES, FREE OF VERMIN, ODORS AND DEFECTS, AND SHALL BE MAINTAINED IN GOOD OPERATING CONDITION. FUSED SPRINKLER HEADS SHALL BE REPLACED PROMPTLY.

§24-01 (J) (3) THE OWNER SHALL ESTABLISH A PROGRAM TO ENSURE THAT THE REFUSE CHUTE AND THE REFUSE ROOM AND APPURTENANCES WILL BE TREATED AS OFTEN AS MAY BE NECESSARY TO PREVENT INFESTATION WITH INSECTS OR RODENTS. THE OWNER SHALL MAINTAIN A RECORD OF SUCH TREATMENTS WHICH SHALL BE AVAILABLE AT ALL TIMES FOR INSPECTION BY THE DEPARTMENT.

§24-01 (K) THESE RULES SHALL APPLY ONLY TO REFUSE CHUTES IN NEW CONSTRUCTION AND TO REFUSE CHUTES RESULTING FROM THE CONVERSION OF EXISTING INCINERATOR FLUES AND TO EXISTING REFUSE CHUTES.

§24-01 (L) COLLECTION AND DISPOSAL OF REFUSE WITHIN PREMISES. THE COLLECTION AND DISPOSAL OF REFUSE WITHIN ANY BUILDING OR ON ANY PREMISES SHALL BE PERFORMED AS DEEMED NECESSARY TO PROVIDE FOR THE SAFETY, HEALTH AND WELL BEING OF THE OCCUPANTS OF BUILDINGS AND OF THE PUBLIC. THE CONSTRUCTION, OPERATION, MAINTENANCE, CLEANLINESS AND SANITATION OF REFUSE CHUTES AND REFUSE ROOMS AND EXTERMINATION TREATMENT FOR INSECTS AND RODENTS, AND THE KEEPING OF RECORDS OF SUCH TREATMENTS FOR REFUSE CHUTES AND REFUSE ROOMS SHALL BE IN ACCORDANCE WITH REGULATIONS ESTABLISHED BY THIS DEPARTMENT IN CONSULTATION WITH THE DEPARTMENT OF HEALTH.

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

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Brooklyn, NY 11208

Consultants:

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Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
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License Number: 023279

Architect's Seal:

Project:

New Development @
818 Lexington Ave.
Brooklyn, NY

Notes: 2

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Date:	1 June 2014
Drawn By:	S.H.T.
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N-101.00

Sheet:	27 of 30
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DOB Scan Sticker

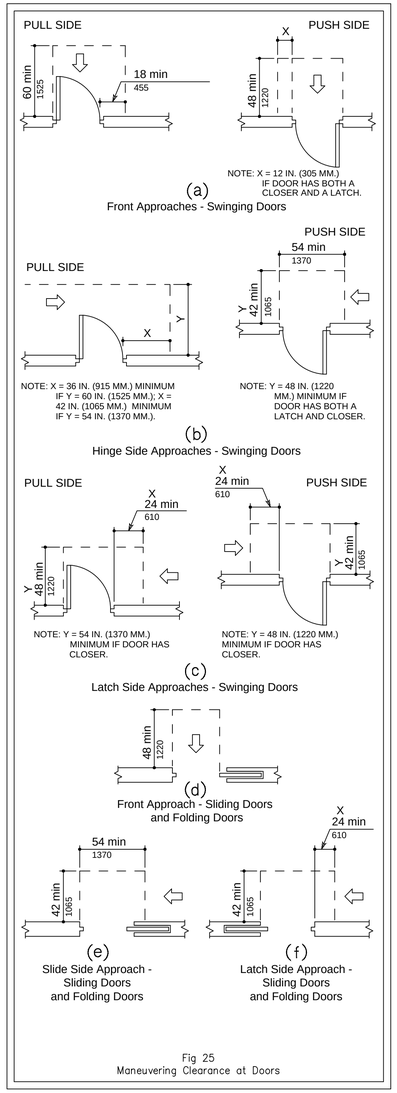

Fig 25
Maneuvering Clearance at Doors

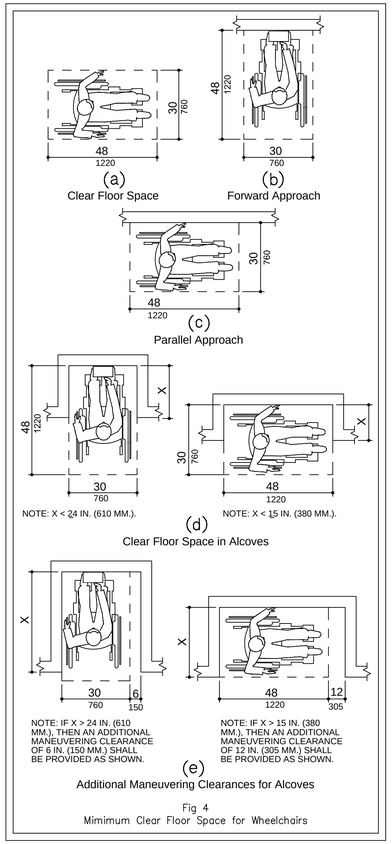

Fig 4
Mimimum Clear Floor Space for Wheelchairs

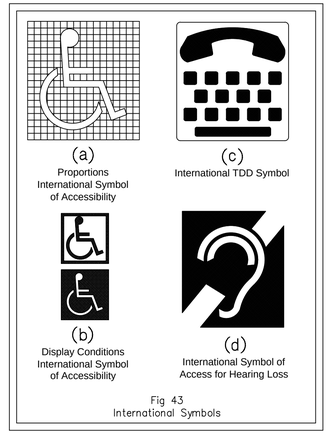

Fig 43
International Symbols

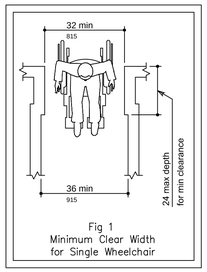

Fig 1
Minimum Clear Width for Single Wheelchair

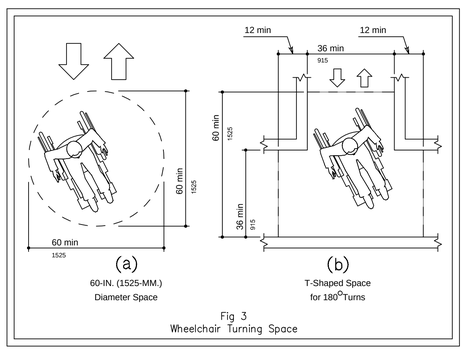

Fig 3
Wheelchair Turning Space

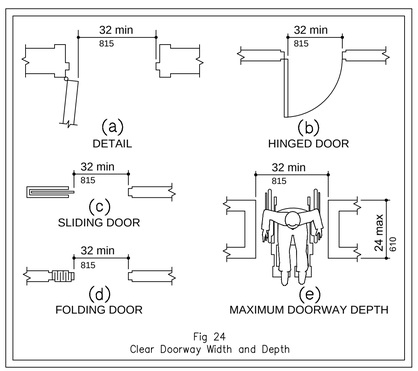

Fig 24
Clear Doorway Width and Depth

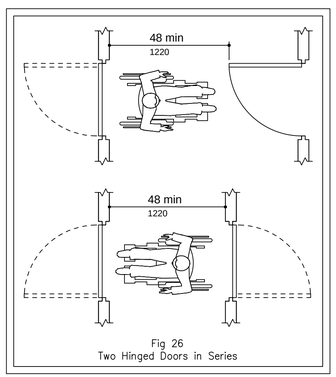

Fig 26
Two Hinged Doors in Series

GENERAL NOTES:

ACCESSIBLE ROUTE:
A CONTINUOUS UNOBSTRUCTED PATH CONNECTING ALL ACCESSIBLE SPACES AND ROOMS IN A BUILDING THAT CAN BE NEGOTIATED BY ALL CATEGORIES OF PEOPLE HAVING PHYSICAL DISABILITIES.

PORTIONS OF ACCESSIBLE ROUTES WITH SLOPES OF MORE THAN 1:20 ARE RAMPS AND SHALL COMPLY WITH REQUIREMENTS FOR RAMPS.

AN INTERIOR ACCESSIBLE ROUTE SHALL BE PROVIDED FROM THE ENTRANCE OF THE BUILDING TO ALL DWELLING UNITS IN THE BUILDING. ALL DWELLING UNITS ARE TO BE ADAPTABLE.

ADAPTABLE DWELLING UNITS:
DWELLING UNITS WHICH ARE CONSTRUCTED ON AN ACCESSIBLE ROUTE AND EQUIPPED AS SET FORTH IN REFERENCE STANDARD RS 4-6 OF THE NYC BUILDING CODE SO THAT THEY CAN BE CONVERTED TO BE USED, WITH A MINIMUM OF STRUCTURAL CHANGE, BY ALL CATEGORIES OF PERSONS HAVING PHYSICAL DISABILITIES.

ADAPTABLE DWELLING UNITS SHALL BE EQUIPPED WITH DOOR WIDTHS AND CLEAR FLOOR SPACES FOR POSSIBLE OCCUPANTS WITH PHYSICAL DISABILITIES. ADAPTABLE SPACES WITHIN DWELLING UNITS SHALL INCLUDE KITCHENS AND BATHROOMS AND THEIR RESPECTIVE DOORWAYS.

THE INFORMATION SHOWN ON THIS DRAWING IS FOR GUIDANCE PURPOSES ONLY AND OUTLINE THE MOST COMMON ACCESSIBILITY CRITERIA APPLICABLE TO THIS JOB. THEY DO NOT CONSTITUTE A COMPREHENSIVE DESCRIPTION OF ALL POSSIBLE CRITERIA WHICH ARE GIVEN IN THE NYC BLDG. CODE AND ANSI A 117.1 - 2003 AS MODIFIED BY THE NYC BLDG. CODE
THE GENERAL CONTRACTOR MUST DO ALL WORK IN ACCORDANCE WITH THESE REGULATIONS.

818 Lexington

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Notes: Handicap Details 1

Project Number:	5010
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N-102.00

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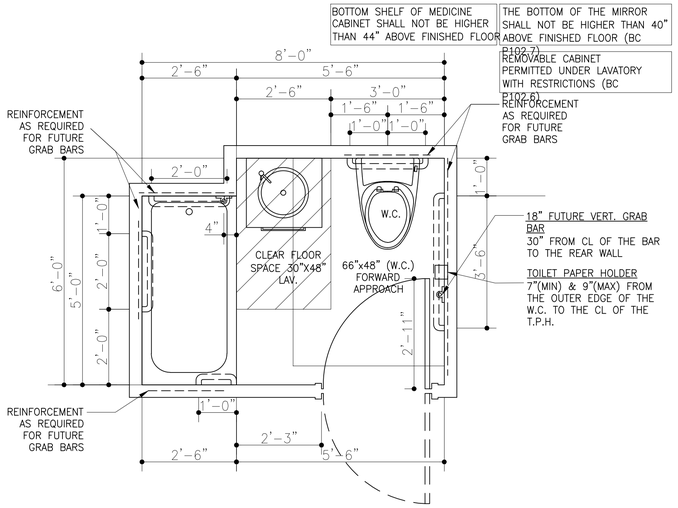
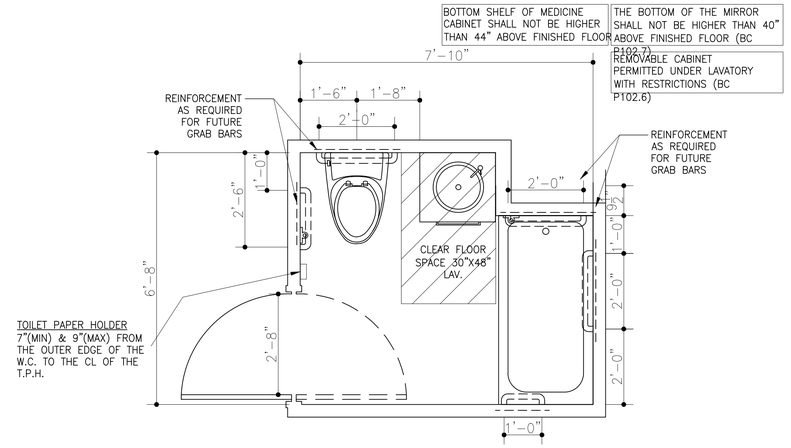
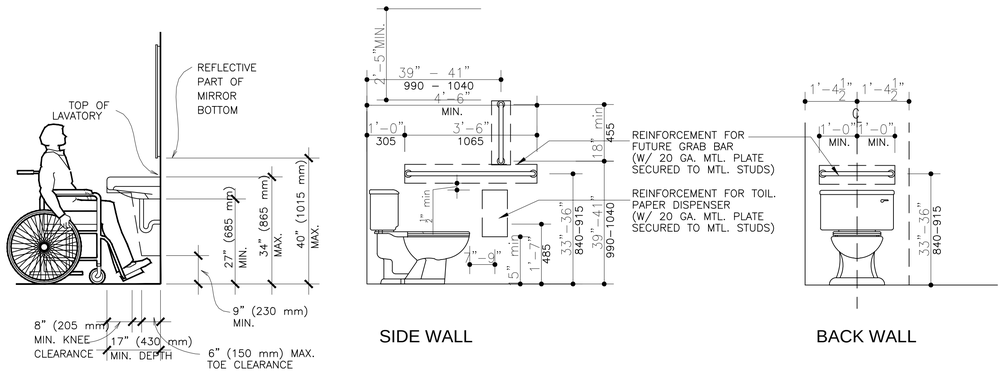


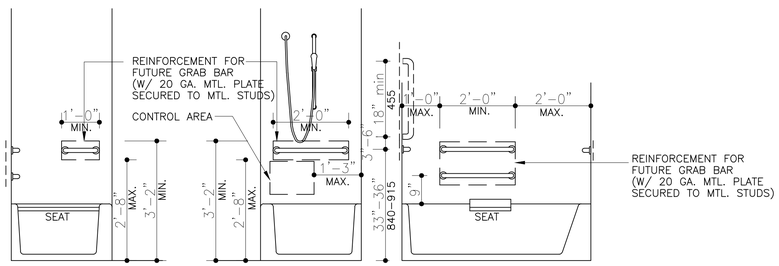
R-2 OCCUPANCY 'APPENDIX P' TYPE B UNIT
BATHROOM FRONT APPROACH



R-2 OCCUPANCY TYPE B UNIT
BATHROOM SIDE APPROACH



SIDE WALL BACK WALL



HEAD FOOT BACK

GENERAL NOTES:

ACCESSIBLE ROUTE:
A CONTINUOUS UNOBSTRUCTED PATH CONNECTING ALL ACCESSIBLE SPACES AND ROOMS IN A BUILDING THAT CAN BE NEGOTIATED BY ALL CATEGORIES OF PEOPLE HAVING PHYSICAL DISABILITIES.

PORTIONS OF ACCESSIBLE ROUTES WITH SLOPES OF MORE THAN 1:20 ARE RAMPS AND SHALL COMPLY WITH REQUIREMENTS FOR RAMPS.

AN INTERIOR ACCESSIBLE ROUTE SHALL BE PROVIDED FROM THE ENTRANCE OF THE BUILDING TO ALL DWELLING UNITS IN THE BUILDING. ALL DWELLING UNITS ARE TO BE ADAPTABLE.

ADAPTABLE DWELLING UNITS:
DWELLING UNITS WHICH ARE CONSTRUCTED ON AN ACCESSIBLE ROUTE AND EQUIPPED AS SET FORTH IN REFERENCE STANDARD RS 4-6 OF THE NYC BUILDING CODE SO THAT THEY CAN BE CONVERTED TO BE USED, WITH A MINIMUM OF STRUCTURAL CHANGE, BY ALL CATEGORIES OF PERSONS HAVING PHYSICAL DISABILITIES.

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320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @
818 Lexington Ave.
Brooklyn, NY

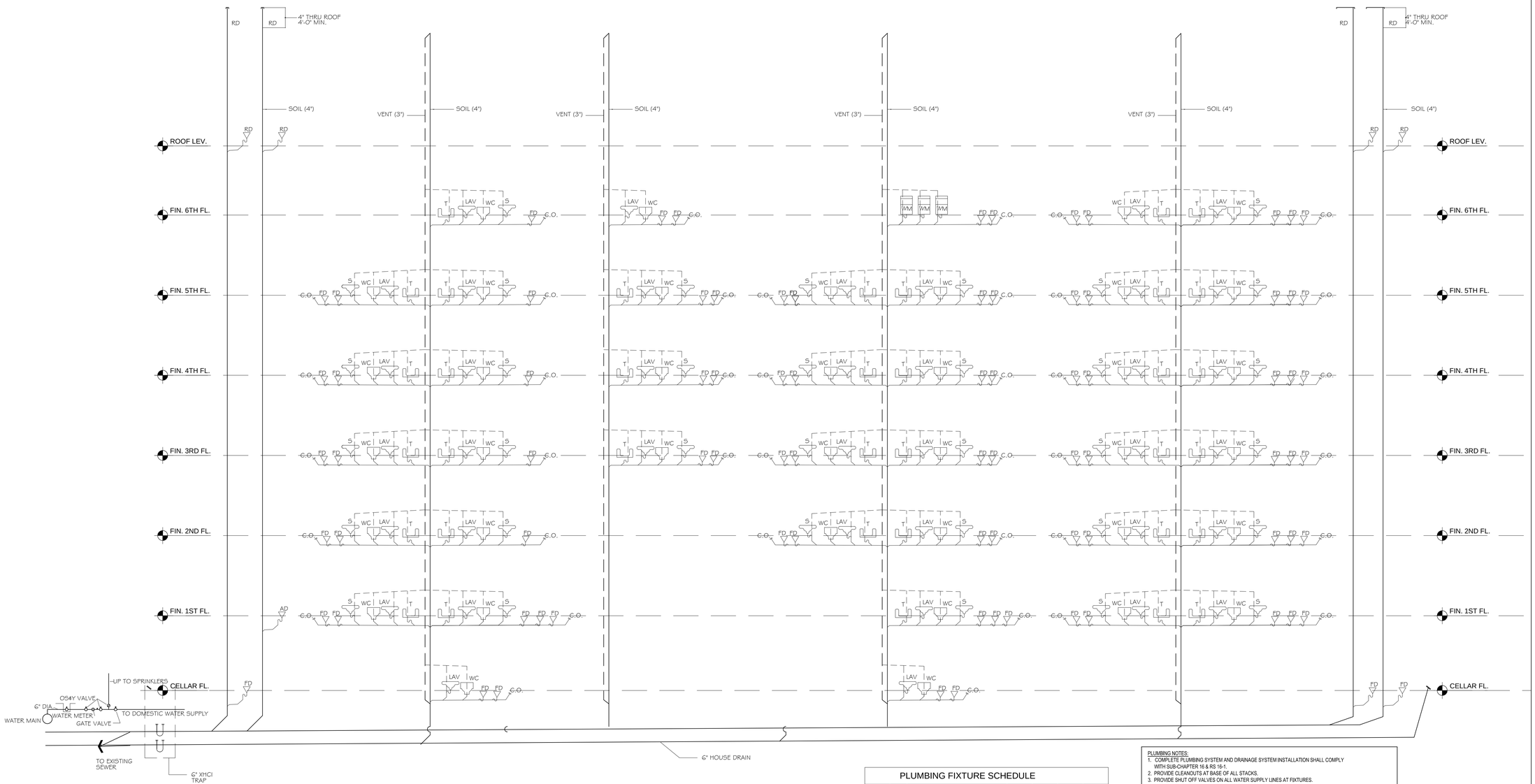
Notes: Handicap Details 2

Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

N-103.00

Sheet:	29 of 30
Scale:	NTS

DOB Scan Sticker



PLUMBING FIXTURE SCHEDULE

SYMBOL	ABBR	DESCRIPTION	S/ W	V	HW	CW
	LAV	WALL HUNG LAVATORY - WITH CENTER SET - POP - UP DRAIN 24 x 20	1 1/2"	1 1/2"	1/2"	1/2"
	LAV	LAVATORY - SELF - RIMMING SET IN COUNTER TOP WITH CENTER SET 4 OPEN DRAIN	1 1/2"	1 1/2"	1/2"	1/2"
	WC	WATER CLOSET FLUSH TANK FLOOR MOUNTED WHITE, WITH OPEN FRONT SOLID PLASTIC SEAT - VITREOUS CHINA	4"	2"		3/4"
	S	KITCHEN SINK - 1 OR 2 COMPARTMENTS, 18 GA. STAINLESS STEEL	2"	1 1/2"	1/2"	1/2"
	T	BATHTUB - ENAMEL CAST IRON	1 1/2"	1 1/2"	1/2"	1/2"
	WM	WASHER- DRYER				
	HW	HOT WATER HEATER				
	B	GAS BOILER (<350 K>)				
	FD	FLOOR DRAIN				
	RD	ROOF DRAIN				
	AD	AREA DRAIN				

NOTES:
1. BATHROOMS AND TOILETS TO HAVE TILE ON THE WALLS, MIN. 4'-0" HIGH AND A TILE FLOOR + TILE BASE 6" HIGH.
2. WALL ABOVE TILES SHALL HAVE MOISTURE RESISTANT BSA APPROVED WALL BOARDS.
3. ALL BATHROOM DUCTS TO BE 6" x 6" INDIVIDUAL DUCTS.

PLUMBING NOTES:
1. COMPLETE PLUMBING SYSTEM AND DRAINAGE SYSTEM INSTALLATION SHALL COMPLY WITH SUB-CHAPTER 16 & RS 16-1.
2. PROVIDE CLEANOUTS AT BASE OF ALL STACKS.
3. PROVIDE SHUT OFF VALVES ON ALL WATER SUPPLY LINES AT FIXTURES.
4. PURGE ALL WATER AND GAS LINES BEFORE FINAL CONNECTIONS.
5. PROVIDE AIR CHAMBERS AT TOP OF WATER RISERS MINIMUM 18" HIGH, 12" DIA.
6. STANDARD WEIGHT BLACK STEEL PIPE FOR GAS SYSTEM WITH GALVANIZED STEEL FITTINGS.
7. FLOOR DRAINS SHALL BE PROVIDED WITH REMOVABLE STRAINER AS PER RS 16.
8. TRAPS FOR FLOOR DRAINS SHALL BE DEEP SEAL TYPE.
9. APPROVED TYPE WATER METER TO BE INSTALLED TO CONFORM WITH LEGISLATION SIGNED INTO LAW ON JULY 31, 1985.
10. ALL PIPING INSTALLED TO SERVICE BUILDING AND WITHIN BUILDING SHALL BE THERMALLY INSULATED AS PER NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE.
11. WATER METERS LOCATED OUTSIDE OF THE BUILDING AND WITHIN THE PROPERTY LINE, SHALL BE INSTALLED IN AN ACCESSIBLE, WATERTIGHT AND FROST PROOF PIT OR METER BOX AS PER SEC. P107.3 (B).
12. PLUMBING VENT LINE TO EXTEND 2'-0" MINIMUM ABOVE FINISHED ROOF.
13. INSTALLATION OF WATER SUPPLY SERVICE LINES SHALL COMPLY WITH SEC. P107.2.
14. SEPARATION OF WATER SUPPLY SERVICE AND BUILDING SEWER SHALL COMPLY WITH SEC. P107.2 (B) (6).
15. PROTECTIVE COVER FOR SERVICE PIPE SHALL COMPLY WITH SEC. P107.2 (B) (6).
16. WATER METER LOCATION SHALL BE SUBJECT TO APPROVAL BY THE DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY, AND SHALL COMPLY WITH SEC. P107.3 (B).
17. PRIOR TO THE INSTALLATION OF HOUSE DRAIN, PLUMBING CONTRACTOR SHALL CHECK AND VERIFY DEPTH OF SEWER/SEWERS IN STREET, TO ASCERTAIN THE COMPLIANCE OF PROVIDING THE MINIMUM REQUIRED PITCH OF HOUSE SEWER, AS PER BUILDING CODE REQUIREMENTS. ANY DISCREPANCIES SHALL BE REPORTED TO ARCHITECT IMMEDIATELY PRIOR TO START OF ANY WORK.
18. ROOF GUTTERS SHALL BE AS PER RS 16-19.
19. PLUMBING CONTRACTOR SHALL VERIFY ALL INVERTS AND EXISTING CONDITIONS PRIOR TO THE INSTALLATION OF NEW WORK.
20. ALL HOT AND COLD WATER LINES TO BE INSULATED WITH FIBERGLASS-FOIL BACKED INSULATION JACKETS.
21. WASHING MACHINES TO BE PROVIDED WITH VACUUM BREAKERS. ALL WASHING MACHINES SHALL BE M.E.A. APPROVED TYPE, VACUUM BREAKER BY SINGER CORP., M.E.A. 398-87E.
22. LAUNDRY ROOM / BOILER ROOM FLOOR DRAINS, TRAPS FOR FLOOR DRAINS, SHALL BE DEEP SEAL TYPE AND SHALL HAVE A WATER SUPPLY AVAILABLE FROM A PLUMBING FIXTURE LOCATED IN THE SAME ROOM OR FROM A FAUCET OR VALVED OUTLET LOCATED NOT MORE THAN 3'-0" ABOVE THE FLOOR DRAIN. AUTOMATIC PRIMING DEVICES WILL BE PERMITTED ONLY WHEN AN AIR GAP IS PROVIDED BETWEEN THE PORTABLE WATER SUPPLY AND THE WATER SUPPLY FOR THE DRAIN AS PER SEC. P104.17.
23. PLUMBING FIXTURES TO COMPLY WITH NATIONAL STANDARD OF REFERENCE STANDARDS RS-16.
24. ALL NEW WATER CLOSETS AND ASSOCIATED FLUSH VALVES INSTALLED MUST MEET WATER SAVING PERFORMANCE STANDARDS AS WELL AS PROPER LABELING AS SET FORTH IN LOCAL LAW 29/89. WATER CLOSETS AND ASSOCIATED FLUSH VALVES SHALL BE ON THE APPROVED LIST OF WATER SAVING DEVICES COMPILED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.

818 Lexington

Revisions		
No.	Description	Date
.00	Initial Submittal	

Client:

Jam 818 Lex LLC

1000 Stanley Ave.
Brooklyn, NY 11208

Consultants:

The BAC Group, LTD.

366 Broadway, Brooklyn, NY 11211
Tel: 1-(718)-599-1559
Fax: 1-(718)-599-1865

Architect:

Jeffrey Kamen, RA

320 Bond Street
New York, NY 10012
Tel: 1-(212)-982-5112

License Number: 023279

Architect's Seal:

Project:

New Development @ 818 Lexington Ave. Brooklyn, NY

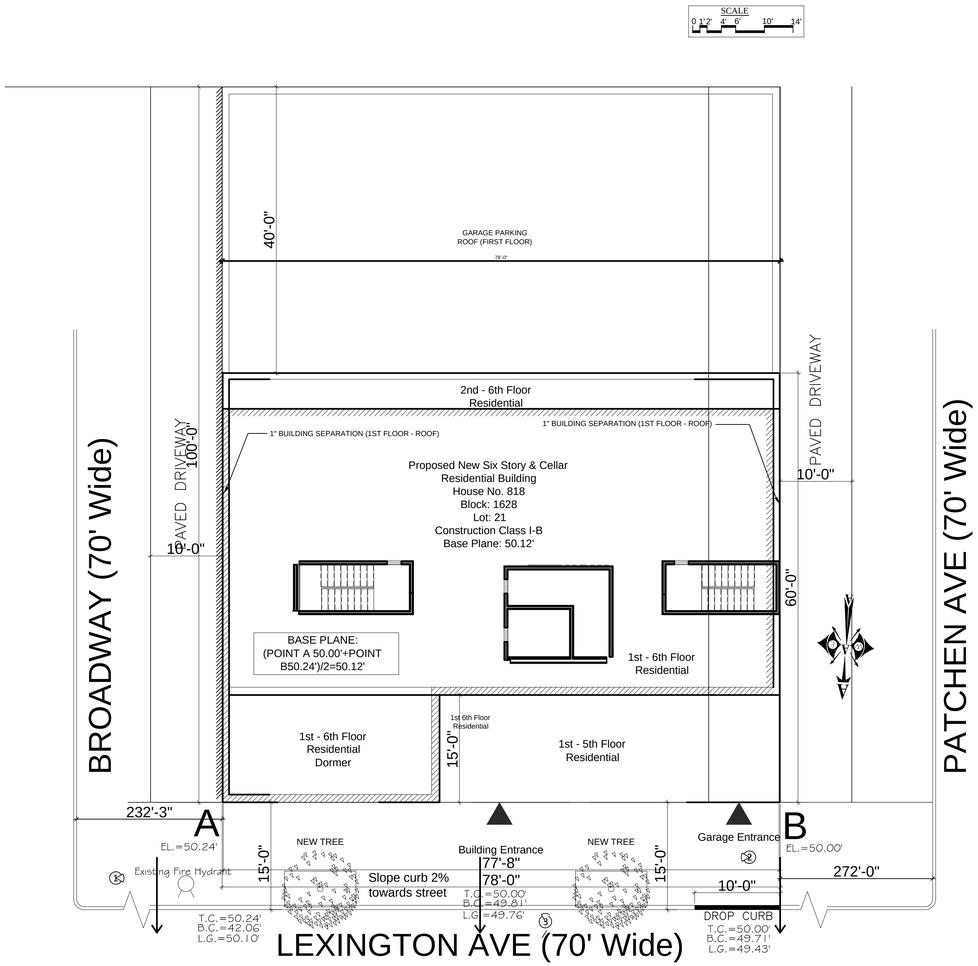
Plumbing Riser Diagram

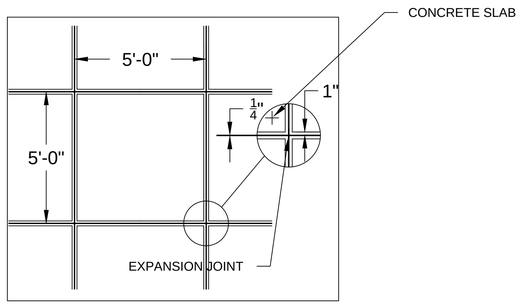
Project Number:	5010
Date:	1 June 2014
Drawn By:	S.H.T.
Checked By:	N.T.

P-100.00

Sheet:	30 of 30
Scale:	NTS

DOB Scan Sticker





SIDEWALK DETAIL

Proposed Tree Planting Schedule:
-1 Trees to be planted offise or paid into tree fund
-2 Trees to be planted on site as shown

A Proposed tree pit of 5'-0" x 6'-0" is the standard proposed per tree pit configuration sheet on page 23 of the NYC parks and recreations department's "Tree planting standards" issued on April 2008

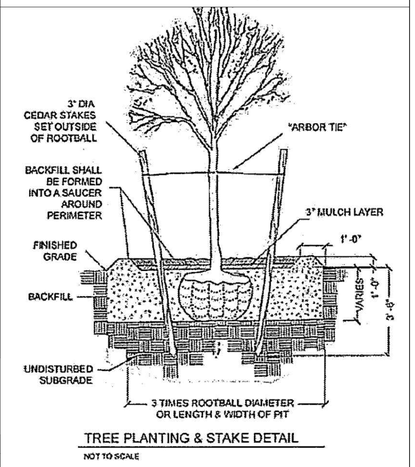
CURB CUT DETAIL
AS PER DOT STD. H-1035
TO BE FILED SEPERATELY

Exact locationof trees to be determined by Dept of Parks and Recreation

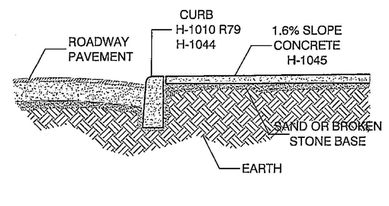
Species of new trees to be determined by NYC Parks Department

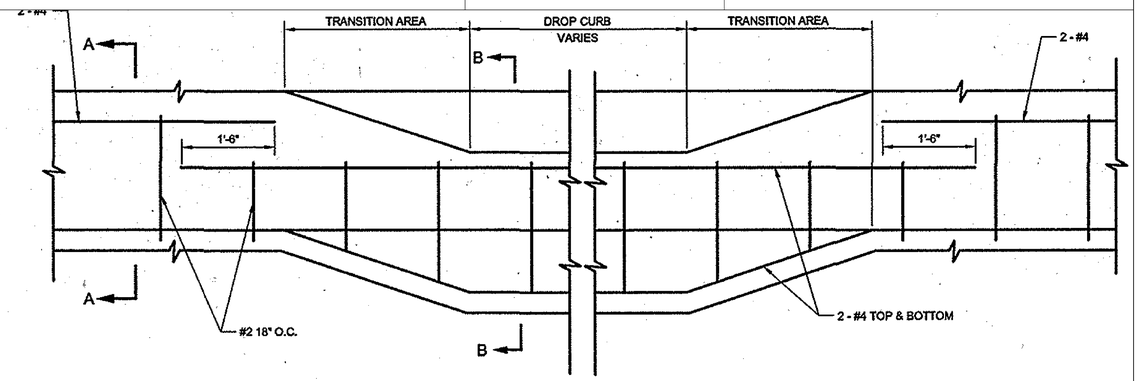
BLOCK: 1628; LOT 21

ZONING R6A / C2-4; MAP 17a



TREE PLANTING & STAKE DETAIL
NOT TO SCALE





CURB ELEVATION VIEW
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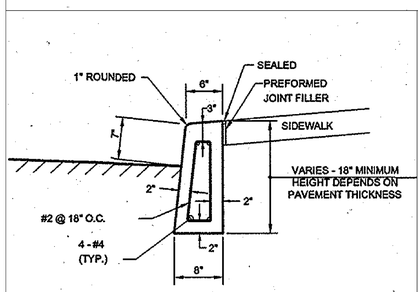

SECTION A-A
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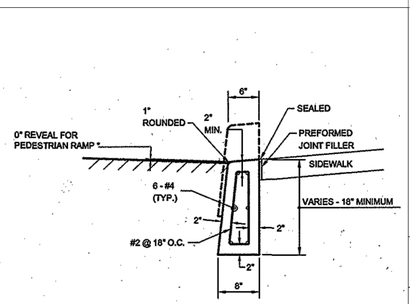

SECTION B-B
NOT TO SCALE

* REVEAL AT PEDESTRIAN RAMPS SHALL BE 0" AS SHOWN. REVEAL AT DRIVEWAY TO BE 1-1/2".

SIDEWALK NOTES

CURB LINEAR FT. = 78'-0"
SIDEWALK = 780 SQ. FT.
NEW TREES = 3 REQUIRED
ON SITE = 2
OFF SITE = 1

1	DENOTES NUMBER AND DIRECTION OF PICTURES
	DENOTES LIGHT POLE
	DENOTES TRAFFIC SIGN
	DENOTES NEW 6'-0" X 5'-0" TREE PIT

GENERAL REQUIREMENTS:

1. ALL DESIGNS, MATERIALS, CONSTRUCTION METHODS AND WORKMANSHIP SHALL COMPLY WITH THE FOLLOWING PUBLICATIONS OF THE BUREAU OF HIGHWAYS:

STANDARD SPECIFICATIONS, STANDARD DETAILS OF CONSTRUCTION; RULES OF THE BUREAU OF HIGHWAY OPERATIONS; GUIDELINES FOR THE DESIGN OF INFRASTRUCTURE COMPONENTS.

1. ALL NONSTANDARD MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE SPECIFICALLY APPROVED IN WRITING BY THE DOT.
2. ANY WORK NOT COMPLYING WITH THE REQUIREMENTS OF THE DOT SHALL BE REMOVED AND REPLACED.
3. THIS PLAN SHALL BE VALID FOR THE ISSUANCE OF CONSTRUCTION PERMITS FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL OR SELF-CERTIFICATION, AS APPLICABLE.
4. ALL SIDEWALK AND STREET AREAS CONSTRUCTED UNDER THIS PLANS SHALL REMAIN OPEN TO THE PUBLIC AT ALL TIMES.

ISSUANCE OF PERMITS

6. NO SIDEWALK, CURB OR ROADWAY WORK SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH SUPERINTENDENT. APPLICATION SHALL BE MADE THREE DAYS BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL HAVE ALL REQUIRED INSURANCE COVERAGE ON FILE.
7. NO WORK ON DRAINAGE STRUCTURES SHALL BE DONE WITHOUT A PERMIT FROM THE BOROUGH OFFICE OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
8. ANY VAULT WORK AT THE SITE SHALL BE DONE AS PER THE APPLICABLE RULES OF THE DOT AND DEPT. OF BUILDINGS.

CONSTRUCTION ACTIVITY

1. A CONSTRUCTION PLAN SHOWING MAINTENANCE AND PROTECTION OF TRAFFIC INCLUDING PLACEMENT 0.10 SIDEWALK BRIDGES, BARRIERS AND SIGNAGE, SHALL BE SUBMITTED TO THE BOROUGH HIGHWAY OFFICE BEFORE CONSTRUCTION BEGINS.
2. NO SIDEWALK SHALL BE CLOSED WITHOUT A PERMIT. PEDESTRIAN AND TRAFFIC SAFETY SHALL BE PROTECTED AT ALL TIMES. ROADWAY CLOSINGS SHALL BE AS DIRECTED.
3. THE SITE SHALL BE MAINTAINED IN A CLEAN AND SAFE CONDITION.

FINAL SIGN-OFF

4. PERMITS SHALL BE PRESENTED FROM ALL PUBLIC AGENCIES AND UTILITIES HAVING OWNERSHIP OF STRUCTURES RELOCATED OR REMOVED DURING CONSTRUCTION.
5. ALL PAVEMENT MARKINGS INCLUDING THERMOPLASTIC LANE DIVIDERS, REMOVED DURING CONSTRUCTION, SHALL BE REPLACED IN KIND TO THE BUREAU OF TRAFFIC STDS.
6. ALL EXISTING CATCH BASIN ON SITE SHALL BE CLEANED AND MADE OPERABLE
7. ALL DAMAGE CAUSED BY CONSTRUCTION ON THIS PROJECT OUTSIDE THE PROJECT LIMITS SHALL BE REPAIRED AS DIRECTED.
8. THE ROADWAY SHALL BE PAVED TO THE REQUIREMENTS OF THE DOT AND AS DIRECTED.
9. WILL CONTACT NYC PARKS IF ANY UNDERGROUND INFRASTRUCTURE (GAS/WATER/ELECTRIC ETC.) AFFECTS ANY PROPOSED/EXISTING TREES ON SITE. PROJECT MANAGER IS AWARE THAT ANY WORK DONE ON OR NEAR A CITY TREE REQUIRES A PERMIT FROM NYC PARKS. THIS INCLUDES UTILITY, SIDEWALK, PRUNING OR ANY OTHER WORK WITHIN THE DRIPLINE OF A TREE (WITHN THE RIGHT OF WATY) DONE BY THE GENERAL CONTRACTOR OR ANY SUBCONTRACTORS. WILL FOLLOW NYC PARKS PLANTING AND FORESTRY SPECIFICATIONS. UTILITIES MAY NOT BE LABELLED. IF UNKOWN, THE PROJECT MANAGER MUST AMEND PLAN WITH NYC PARKS IN THE FUTURE.

818 Lexington

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BPP

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BPP-100.00

Sheet:	1 of 1
Scale:	NTS

DOB Scan Sticker

SITE PLAN DIAGRAM

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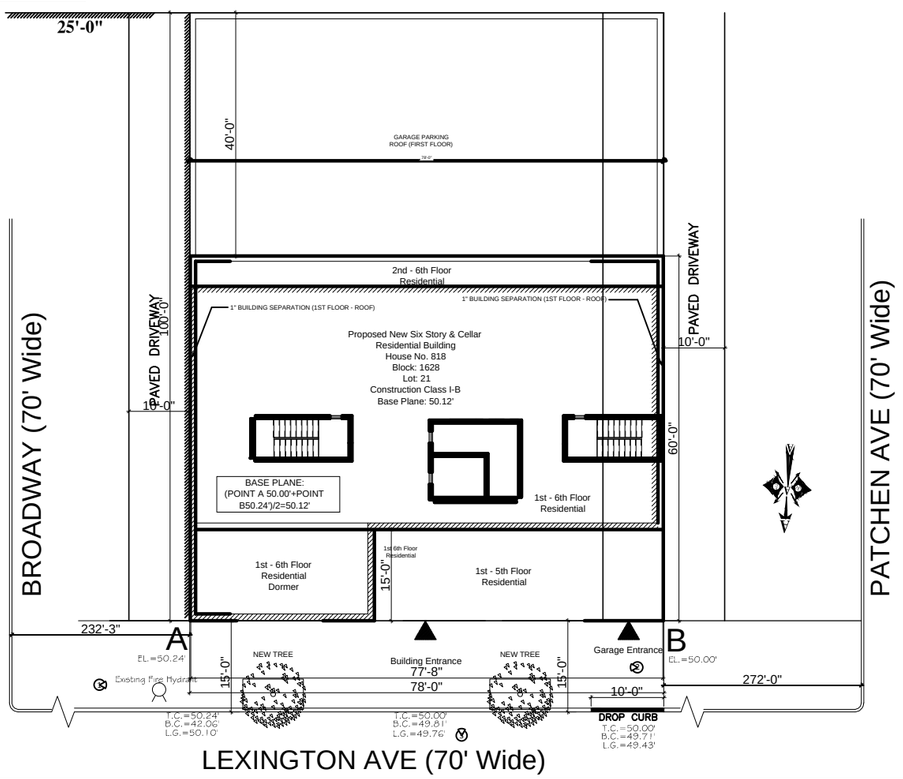
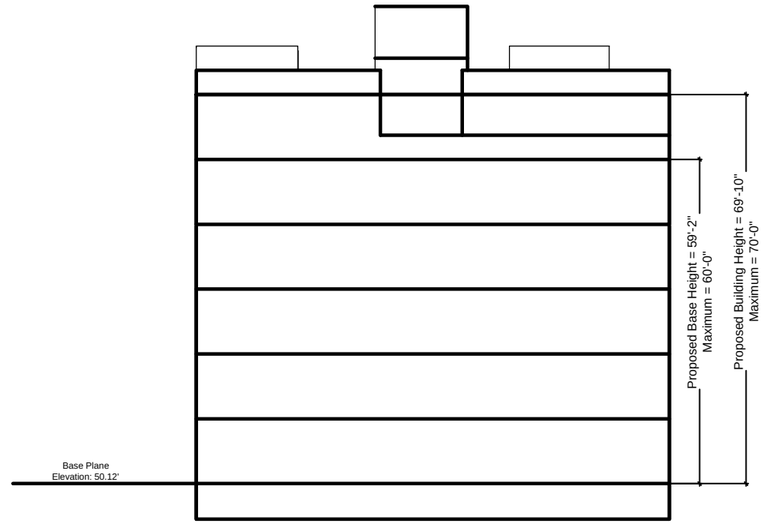


ELEVATION DIAGRAM

Skillman St.
Not to Scale



AXONOMETRIC DIAGRAM

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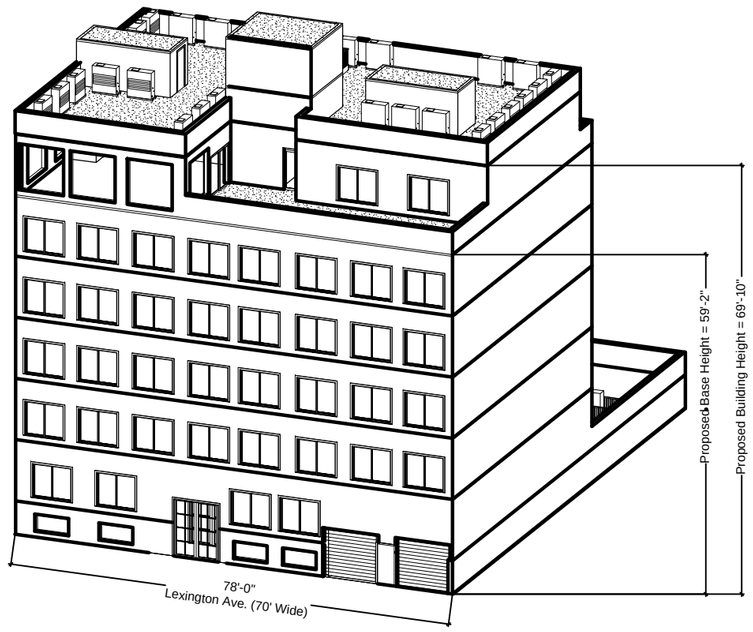


LEGEND

ZONING DISTRICT: R6A/C2-4 QUALITY HOUSING PROGRAM	YARD REQUIREMENT Min. 30'-0" Rear Yard Required as per ZR- 23-47 Proposed: 40'-0" Rear Yard No Front Yard Required as per ZR- 34-23 No Side Yard Required as per ZR- 34-232
LOT AREA COMPLIANCE Allowed Min. Area = 1,700 S.F. as per ZR-23-32 Lot Area = 78'-0" X 100' = 7,800 S.F.	REQUIRED SETBACKS Lexington Ave.: 15'-0" as per ZR-23-633b
LOT DIMENSION COMPLIANCE Allowed Min. Dimension = 18' as per ZR-23-32 Min. Lot Dimension = 78'-0"	PROPOSED BUILDING ZONING LOT LINE EXISTING TREE PROPSED TREE
LOT COVERAGE COMPLIANCE Max 65% of 7,800 SF = 5,070 SF as per ZR23-145 Proposed = 4,670 SF < 5,070 SF	
STREET TREE COMPLIANCE 1 Tree per 25' Frontage as per ZR- 26-41 Required: 78'-0"/25' = 3.12 Trees Proposed: 3 Trees	
MAX BASE HEIGHT AND MAX HEIGHT 60' Max Base Height as per ZR- 23-633c 70' Max Building Height as per ZR- 23-633c	

NYC Buildings

ZD1 Zoning Diagram

Must be typewritten.

Orient and affix BIS job number label here

Submitted to resolve objections stated in a notice of intent to revoke issued pursuant to rule 101-15.

☐ Yes ☒ No

Location Information

House No(s)	818
Street Name	Lexington Avenue
Borough	Brooklyn
Block	1628
Lot	21
BIN	3397928

Falsification of any statement is a misdemeanor and is punishable by a fine or imprisonment, or both. It is unlawful to give to a city employee, or for a city employee to accept, any benefit, monetary or otherwise, either as a gratuity for properly performing the job or in exchange for special consideration. Violation is punishable by imprisonment or fine or both. I understand that if I am found after hearing to have knowingly or negligently falsified or allowed to be falsified any certificate, form, signed statement, application, report or certification of the correction of a violation required under the provisions of this code or of a rule of any agency, I may be barred from filing further applications or documents with the Department.

Name (please print)

Jeffrey Kamen, R.A.

Signature Date

P.E. / R.A. Seal *(apply seal, then sign and date over seal)*

Internal Use Only

BIS Doc #_____

PLAN EXAMINER SIGN AND DATE

NYC Buildings

ZD1 Zoning Diagram

Must be typewritten.

Sheet 1 of 1

1 Applicant Information *Required for **all** applications.*

Last Name Kamen First Name Jeffrey Middle Initial

Business Name Business Telephone 212-982-5112

Business Address 320 Bond Street Business Fax

City New York State NY Zip 10012 Mobile Telephone

E-Mail License Number 023279

2 Additional Zoning Characteristics *Required as applicable.*

Dwelling Units 34 Parking area 4472 sq. ft. Parking Spaces: Total 17 Enclosed 17

3 BSA and/or CPC Approval for Subject Application *Required as applicable.*

Board of Standards & Appeals (BSA)

- ☐ Variance Cal. No._____ Authorizing Zoning Section 72-21
- ☐ Special Permit Cal. No._____ Authorizing Zoning Section_____
- ☐ General City Law Waiver Cal. No._____ General City Law Section_____
- ☐ Other Cal. No._____

City Planning Commission (CPC)

- ☐ Special Permit ULURP No. _____ Authorizing Zoning Section _____
- ☐ Authorization App. No. _____ Authorizing Zoning Section _____
- ☐ Certification App. No. _____ Authorizing Zoning Section _____
- ☐ Other App. No. _____

4 Proposed Floor Area *Required for **all** applications. One Use Group per line.*

Floor Number	Building Code Gross Floor Area (sq. ft.)	Use Group	Zoning Floor Area (sq. ft.)				FAR
			Residential	Community Facility	Commercial	Manufacturing	
C	5304	2	0	0	0	0	0
L	1,202.18	2	156.18	0	0	0	.020
1	3,588.85	2	3,184.89	0	0	0	.408
2	4,670	2	4,482.78	0	0	0	.567
3	4,670	2	4,453.84	0	0	0	.571
4	4,670	2	4,453.84	0	0	0	.571
5	4,670	2	4,453.84	0	0	0	.571
6	3,498.31	2	2,048.95	0	0	0	.262
Bulkhead	454.01	2	0	0	0	0	0

ZD1 Sheet 1 of 1

4 Proposed Floor Area *Required for **all** applications. One Use Group per line.*

Floor Number	Building Code Gross Floor Area (sq. ft.)	Use Group	Zoning Floor Area (sq. ft.)				FAR
			Residential	Community Facility	Commercial	Manufacturing	
Totals	32,727.35		23,234.32	0	0	0	2.97

Total Zoning Floor Area	23,234.32

GENERAL NOTES

1. All Structural work, including material stresses and methods of construction shall conform to the New York City Building Code, latest edition.
2. The contractor shall properly shore, brace, and make safe all floors, walls, and adjacent property as job conditions require.
3. The contractor shall coordinate all Structural work with the Architectural, Mechanical and Electrical drawings and specifications.
4. All dimensions indicated on the drawings are approximate. The contractor shall field verify all dimensions prior to ordering or fabricating material.
5. Centerlines of footings, walls, grade beams, columns, and beams shall coincide, unless otherwise noted.
6. All elevations are measured with respect to datum indicated on Architectural drawings, unless otherwise noted.

STRUCTURAL STEEL

1. Structural steel shall conform to the latest AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings", as amended by Chapter 22–Steel of the New York City Building Code.
2. Structural steel shall conform to ASTM A992 –wide flanges; ASTM A500 –HSS sections; ASTM A36 –channels, angles steel plates.
3. Steel connections are shown schematically. Fabricator is responsible for design and detailing of connections. Fabricator shall provide fabrication drawings and calculations bearing the seal of a Professional Engineer licensed in the State of New York.
4. Each beam connection shall be designed for one half of the total load shown in the AISC tables for the respective span, unless a greater design reaction is indicated on the drawings.
5. Where possible, each beam connection shall be of the two sided web angle type as per AISC specification, unless otherwise noted on the drawings. Minimum connection shall be two (2) bolts.
6. All connections not specifically detailed on the drawings shall be either welded connections, or bolted connections using ASTM A325 bolts, unless otherwise noted.
7. Bolts shall be a minimum of 3/4 inches diameter, unless otherwise noted.
8. Unless specifically detailed otherwise, splices shall be designed to develop the full capacity of the member at the point of the splice.
9. Cuts, holes, copes, etc., required for the work of other trades shall be shown on shop drawings and made in the shop. Field cutting or burning of holes will not be permitted.
10. All welding shall be performed in accordance with AWS specifications, latest edition, and shall conform to Section BC 2204; 2205; 2206; 2209; 2210. All welding shall be performed by certified welders who are licensed by the Commissioner of Buildings. Welding electrodes shall conform to ASTM A233, Class E70XX. Minimum weld size shall be ¼ inches (fillet) unless otherwise noted. Welded connections shall be designed to be stressed to less than 50% of their allowable capacities.
11. Structural steel shall receive a shop coat of rust inhibiting paint except as follows:
    a) Contact milled bearing surfaces.
    b) Bearing surfaces under washers of friction type, high strength bolts.
    c) Within two inches of field welds.
12. After erection, all damaged areas in the shop coat shall be touched up with the same paint used for the shop coat.

DEMOLITION NOTES

1. Contractor shall perform all operations of demolition and removal indicated on the drawings and as may be required by the work. All work shall be done carefully and neatly, in a systematic manner.
2. All existing surfaces and equipment to remain shall fully protected from damage. The Contractor shall assume full responsibility for damage and shall make repairs required without additional cost to the Owner.
3. No debris shall be allowed to accumulate on the site. Debris shall be removed by the Contractor as the job proceeds. The site shall be left broom clean at the completion of demolition.
4. No structural elements shall be removed unless portions affected are adequately supported by either temporary shoring or new structural elements as required to protect the stability and integrity of the existing structure.
5. All adjoining property affected by any operations of demolition shall be protected per the requirements of Article 19 of the NYC Building Code.
6. Remove or relocate all wiring, plumbing, and mechanical equipment affected by removal of partitions. Removed pipes and/or lines shall be cut to a point of concealment behind or below finish surfaces, and shall be properly capped or plugged.
7. The Contractor shall provide, erect and maintain all temporary barrier and guards, and all temporary shoring and bracing as required by Department of Building rules and regulations.
8. The Contractor shall provide adequate weather protection for the building and its contents during the course of the work. All openings in any wall or roof shall be protected from all forms of weather or water penetration.
9. The Contractor shall file all necessary Certificates of Insurance with the Department of Buildings, pay all fees, obtain all permits and provide any and all bonds required by any city agency in order to do the work herein described.

CONCRETE MASONRY

1. Construction of concrete masonry walls shall conform to the "Specification for the Design and Construction of Load Bearing Concrete Masonry", published by the NCMA, as modified by Chapter 21–Masonry of the New York City Building Code.
2. Concrete block shall be of lightweight aggregate and shall have a minimum strength f'm = 2500 psi, and conform to the following standards:
   * Hollow Block: ASTM C90, Grade N1
   * Solid Block: ASTM C145, Grade N1
3. All mortar shall be ASTM C270, Type S. Minimum average compressive strength of mortar to be 1,800 psi at 28 days.
4. All grout shall be non–shrink, and shall have a minimum compressive strength of 5000 psi at 28 days, as measured in accordance with ASTM C–109.
5. Block dimensions indicated on Structural drawings are nominal dimensions.
6. Masonry units shall be laid in running bond, unless otherwise noted. Horizontal and vertical joints shall have a uniform width of 3/8 inches.
7. Fill all hollow units with mortar under all concentrated loads for a height of three (3) courses and a length of four (4) feet. Fill continuously with mortar for a height of two courses under all floor and roof framing member, unless otherwise noted.
8. The contractor shall verify dimensions and locations of all slots, pipe sleeves, anchor bolts, etc., and shall install as required by other trades. Fill cores around all embedded items solidly with mortar.
9. Provide loose lintels over all openings in exterior and interior non bearing walls as listed below, except where otherwise indicated on drawings.
   * 4'–11" or less: L 4 x 3–1/2 x 5/16
   * 5'–0" to 7'–0": L 6 x 3–1/2 x 5/16
   * 7'–1" to 8'–0": W 8 x 31 + L6 x 3–1/2 x 3/8 (Brick)
   a) 3–1/2" legs are horizontal.
   b) Provide one L for each 4" of nominal wall thickness.
   c) Minimum bearing to be 6" at each end.
10. Angle lintels for masonry openings greater than 5'–0" shall be welded or bolted together at ends and at mid–span unless otherwise noted.
11. Reinforcement (Duro wall) shall be installed in bed joints 16" apart vertically. In addition, place reinforcement in the two bed joints 8" apart immediately above and below openings, extending a minimum of 3 –0" beyond the opening.
12. Reinforcement (Duro wall) shall consist of two parallel deformed longitudinal rods welded at 16 inches intervals in the same plane to a continuous diagonal cross rod, forming a truss design. Rods shall be No. 9 gauge, galvanized. Reinforcement shall be of proper width to span within 3/4" of each face of wall.
13. For construction using brick and concrete masonry units, reinforcement shall be similar to the above, except that there shall be three (3) longitudinal bars, (two in the concrete and one in the brick), and the truss shall be formed between the outer longitudinal bars.
14. Reinforcement shall be continuous and lapped at least six inches at splices. Reinforcement shall be spliced at all corners and intersections.
15. Fill all cells of masonry units for the first two courses above all foundation walls and slabs.
16. Grout for filling cells shall conform to ASTM C476, fine grout.

COMPOSITE METAL DECK

1. See plans for depth and gauge of composite metal deck, and designation of welded wire fabric reinforcing.
2. Unless otherwise noted, deck gauges shown on plans have been selected to sustain the weight of wet concrete without shoring.
3. Contractor shall provide shoring for metal deck for concrete placement where deck spans and construction loads exceed the values recommended by the manufacturer.
4. Contractor shall provide header members for metal deck at openings, if required.
5. All metal deck is to be manufacturers specifications
6. All metal deck units shall be fastened to the supporting framework by welding, in accordance with the manufacturer's requirements. Minimum welds to support shall be 5/8" diameter puddle welds at each support, such that average weld spacing does not exceed 12" on centers. Side laps are to be welded at a maximum spacing of 36" on center.

OPEN WEB STEEL JOISTS

1. Manufacture and installation of open web steel joists shall conform to the "Standard Specifications for Steel Joists and Joist Girders," of the Steel Joist Institute, as modified by Chapter 22–Steel of the New York City Building Code.
2. All bridging shall be welded to joists. The design and spacing of bridging shall conform to the Steel Joist Institute specifications, unless otherwise noted on drawings.
3. Provide extended bottom chords on joists at columns. Extended bottom chords shall be welded to the supporting steel after deck is in place.
4. All joists are to be welded to supporting steel.
5. Provide minimum camber to joists and joist girders, in accordance with recommendations of the Steel Joist Institute.

CONCRETE

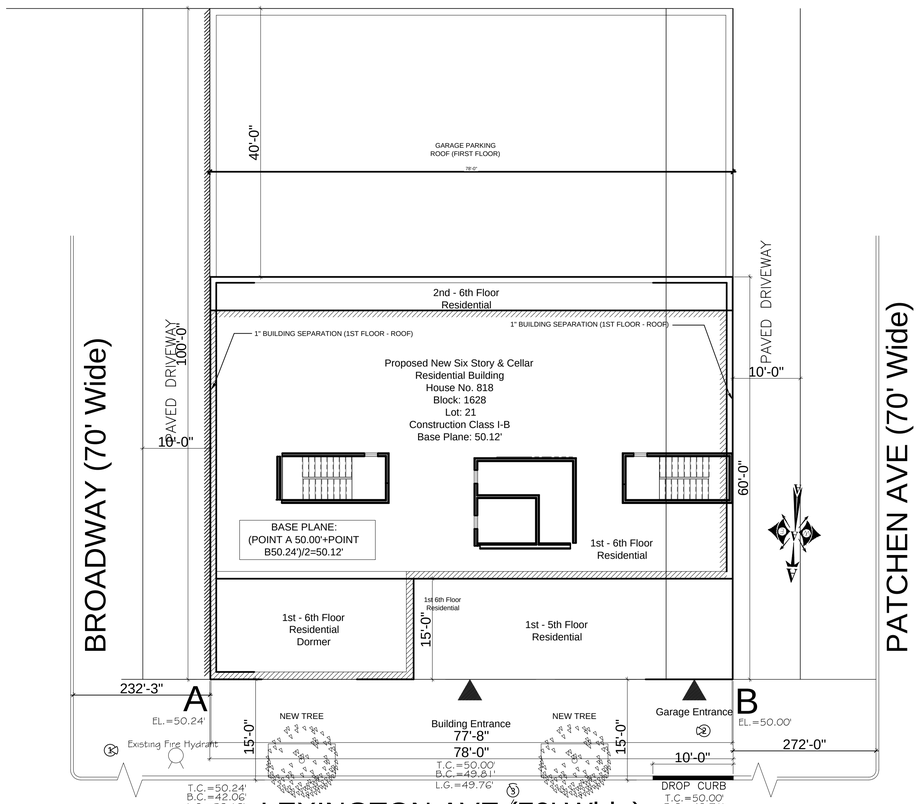
1. Concrete shall conform to ACI 318, as amended by Chapter 19–Concrete, of the New York City Building Code.
2. Exterior concrete exposed to view shall conform to Architectural finish requirements.
2. All coarse aggregate for normal weight concrete (NWC) (to be used on all foundations) shall be crushed stone or gravel, conforming to ASTM C33. Cement shall be Portland Cement, conforming to ASTM C–150, Type I, or Type II.
3. Concrete for poured in place construction shall have a minimum ultimate strength (f'c) of 3,500 p.s.i. at 28 days, unless otherwise noted.
4. All concrete to be used above grade shall have an air entraining agent.
5. Do not place concrete when the air temperature is below 40 degrees F, unless using an add mixture, to be approved by controlled inspection engineer. Concrete already placed and not yet adequately cured shall be properly protected.
6. The contractor shall submit mix designs in conformance with ACI 318 and Section BC 1903 of the NYC Building Code, and shall pour no concrete until receiving approval for the proposed mixes. Mixes shall be proportioned by a licensed testing laboratory, retained by the contractor, and approved by the Architect.
7. All grout shall be non–shrink, and shall have a minimum compressive strength of 5000 p.s.i. at 28 days, as measured in accordance with ASTM C–109.
8. Membrane curing compound shall be used on all top surfaces, and shall conform to ASTM C309.
9. Reinforcing bar shall be deformed steel conforming to ASTM A615, Grade 60.
10. Provide clearance from the face of concrete to reinforcing as follows:
    –slab & interior face of walls ¾"
    –footings & concrete formed against earth 3"
    –walls:
    ** interior face 3/4"
    ** exterior face 2" for #6 or larger
    1½" for #5 or smaller
11. Reinforcing shall be held securely in position while placing concrete. If required, additional bars, stirrups, or accessories shall be provided by the contractor to furnish support for all bars.
12. Metal accessories shall be galvanized where legs will be exposed in finished concrete surfaces.
13. Cast slabs, walls, and beams monolithically to the profiles shown, except where construction joints are specifically indicated on the plans.
14. Water stops are to be placed in all construction joints below the elevation of the existing water table.
15. Forms and shoring shall conform to Section BC 1906 of the New York City Building Code. Shoring for formwork shall remain in place until concrete has attained strength to withstand imposed loads without overstress.
16. The contractor shall verify dimensions and locations of all slots, pipe sleeves, anchor bolts, etc., and shall install as required by other trades before placing concrete.
17. Plumbing slots shall be filled with concrete to the same depth as the floor slab after the piping is installed.
18. For floor finish over slab, floor drains, slab depressions, waterproofing details, etc., see Architectural drawings.

SPECIAL & PROGRESS INSPECTIONS AND QUALITY CONTROL

1. 1. Special Inspections and Progress Inspections per the New York City Building Code shall be performed for:
   •Structural Steel – Welding BC 1704.3.1
   •Structural Steel – Erection & Bolting BC 1704.3.2, BC 1704.3.3
   •Concrete – Cast–In–Place BC 1704.9
   •Masonry BC 1704.5
   •Soils – Investigations (Boring/Test Pits) TR4 BC 1704.7.4
   •Concrete Test Cylinders TR2 BC 1905.6
   •Concrete Design Mix TR3 BC 1905.3
   •Frame Inspection BC 109.3.3
   •Form TR–1 Technical Report: Statement of Responsibility shall be filed with the New York City Department of Buildings by the Engineer(s) designated by the Owner to perform Controlled Inspections in each of the above mentioned categories.
2. The Contractor shall notify the Engineer responsible for Controlled Inspection at least 48 hours prior to the start of work requiring inspection.

1 General Notes
N.T.S.

ADDRESS: 818 Lexington Ave.
BLOCK: 1628
LOT: 21
ZONING: R6A /C2-4
ZONING MAP: 17a



2 Plot Plan
3/32" = 1'-0"

3 Concrete Slab Schedule
N.T.S.

Concrete Slab Schedule	
Location	Specification
Cellar Floor	4" 4000 PSI N.W.C. Over 4" Gravel Bed Over 2" Insulating Structural Foam
First Floor	3 ½" 4000 PSI N.W.C. W-2.0xW-2.0-W.W.M.
First Floor Slab on Grade	4" 4000 PSI N.W.C. Over 4" Gravel Bed Over 2" Insulating Structural Foam
2nd Thru Roof	3 ½" 4000 PSI L.W.C. W-2.0xW-2.0-W.W.M.
Stail/Elevator Bulkhead/MachineRoom Roofs	4" 4000 PSI L.W.C. W-2.0xW-2.0-W.W.M.

4 Drawing List
N.T.S.

DRAWING LIST:
S-001 Notes & Plot Plans
S-002 Cellar Walls / 1st Floor Joists
S-003 1st Floor Walls / 2nd Floor Joists
S-004 2nd Floor Walls / 3rd Floor Joists
S-005 6th Floor Walls / Roof Joists
S-006-9 Shear Wall Details
S-010 ABS Details
S-011 Project Details

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818 Lexington Ave.
Brooklyn, NY

NOTES & PLOT PLAN

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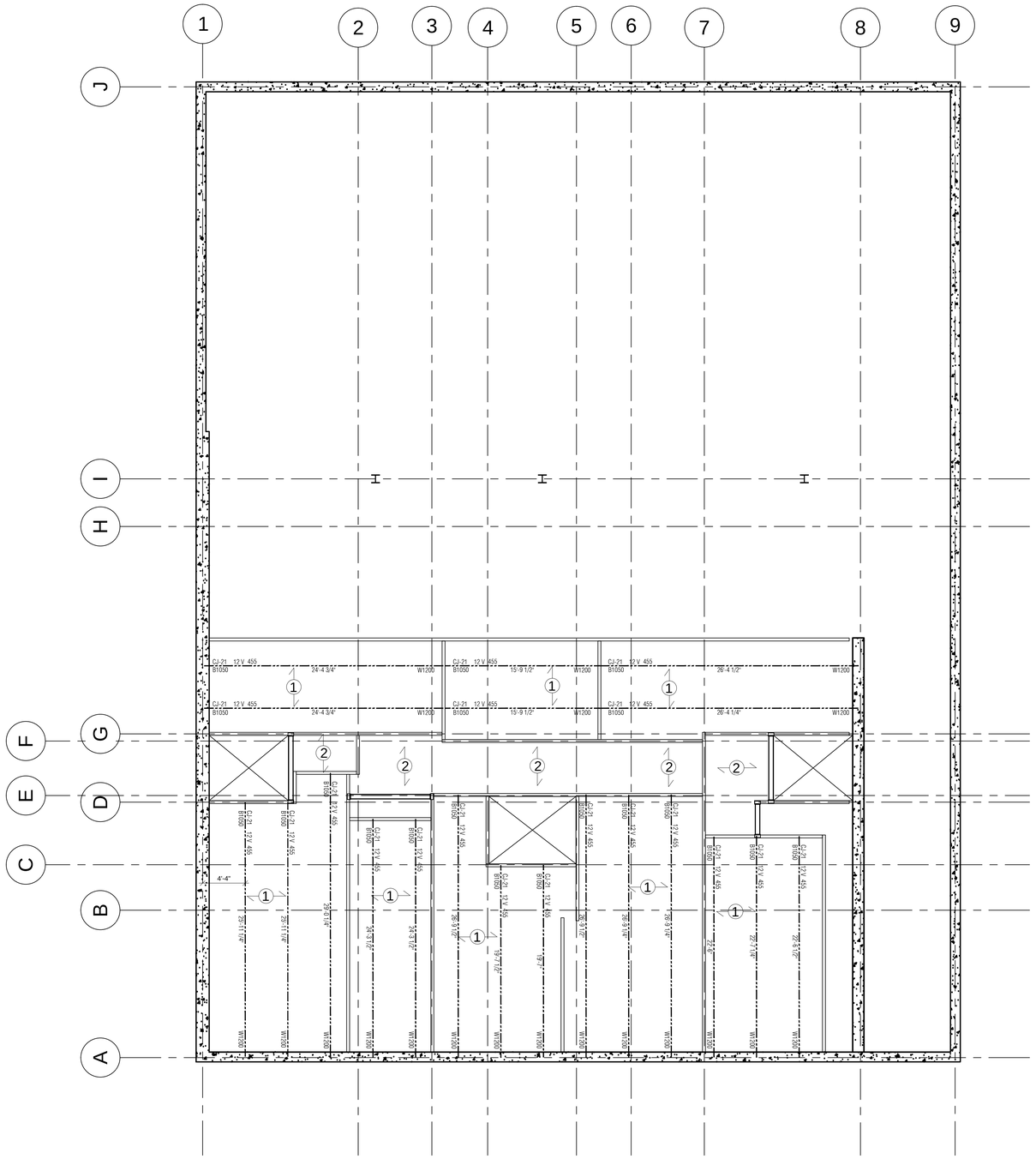
DATE: 06/01/2014
PROJECT No: ----
DRAWING BY: GA
DWG No:
S-001.00
PAGE No OF No: 1-11

NYC DOB NUMBER:



1 Cellar Walls and First Floor Joists
1/4" = 1'-0"

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00
Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00
Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule

Mark	Specification
<1>	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<2>	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<3>	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<4>	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

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818 Lexington Ave.
Brooklyn, NY

Cellar Walls and 1st Floor Joists

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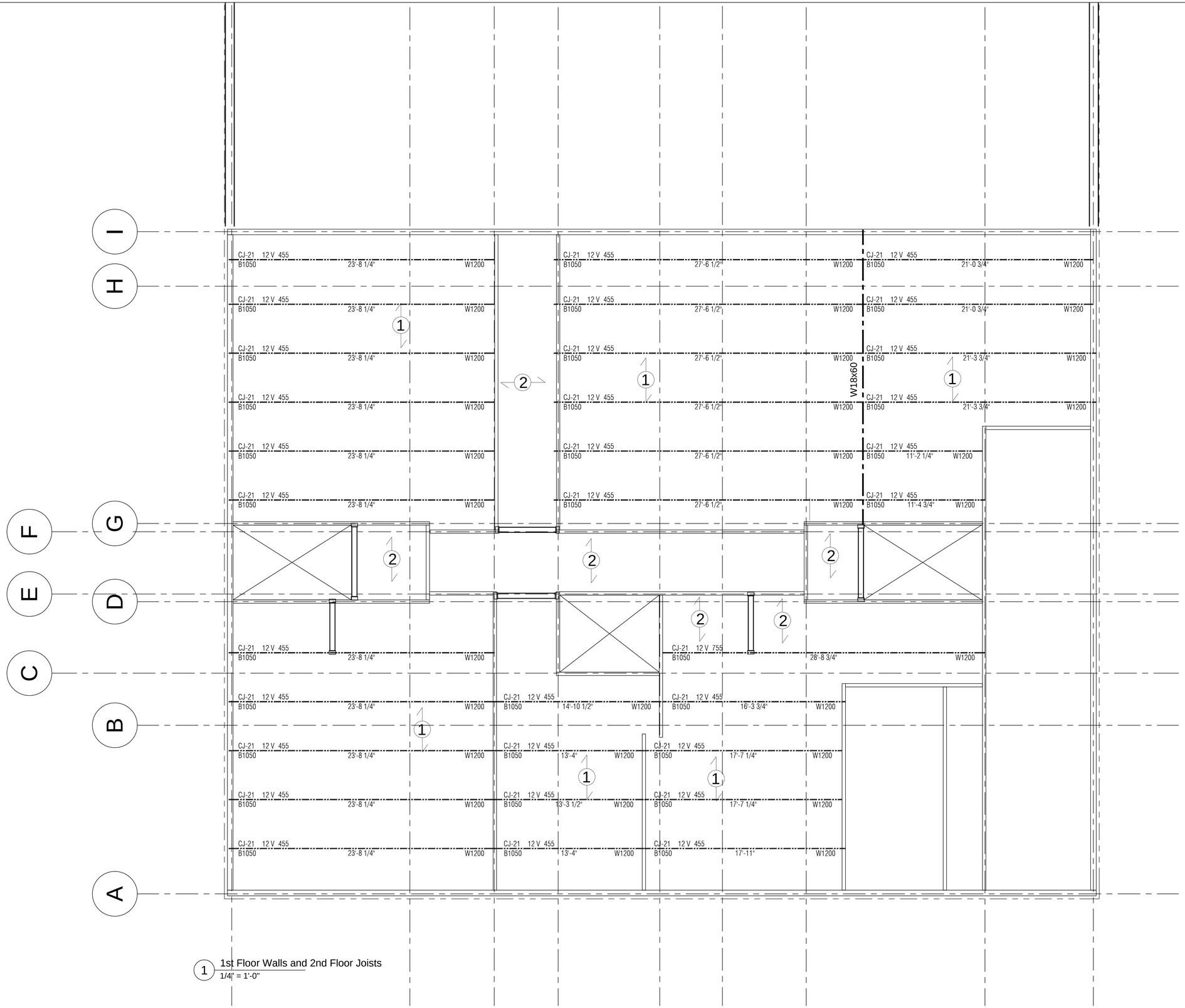
DATE: 06/01/2014
PROJECT No: ----
DRAWING BY: GA
DWG No:

S-002.00

PAGE No OF No: 2-11

NYC DOB NUMBER:



1 1st Floor Walls and 2nd Floor Joists
1/4" = 1'-0"

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00
Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00
Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule

Mark	Specification
<1>	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<2>	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<3>	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<4>	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

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818 Lexington Ave.
Brooklyn, NY

1st Floor Walls and
2nd Floor Joists

SEAL & SIGNATURE

DATE: 06/01/2014
PROJECT No: ----
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DWG No:

S-003.00

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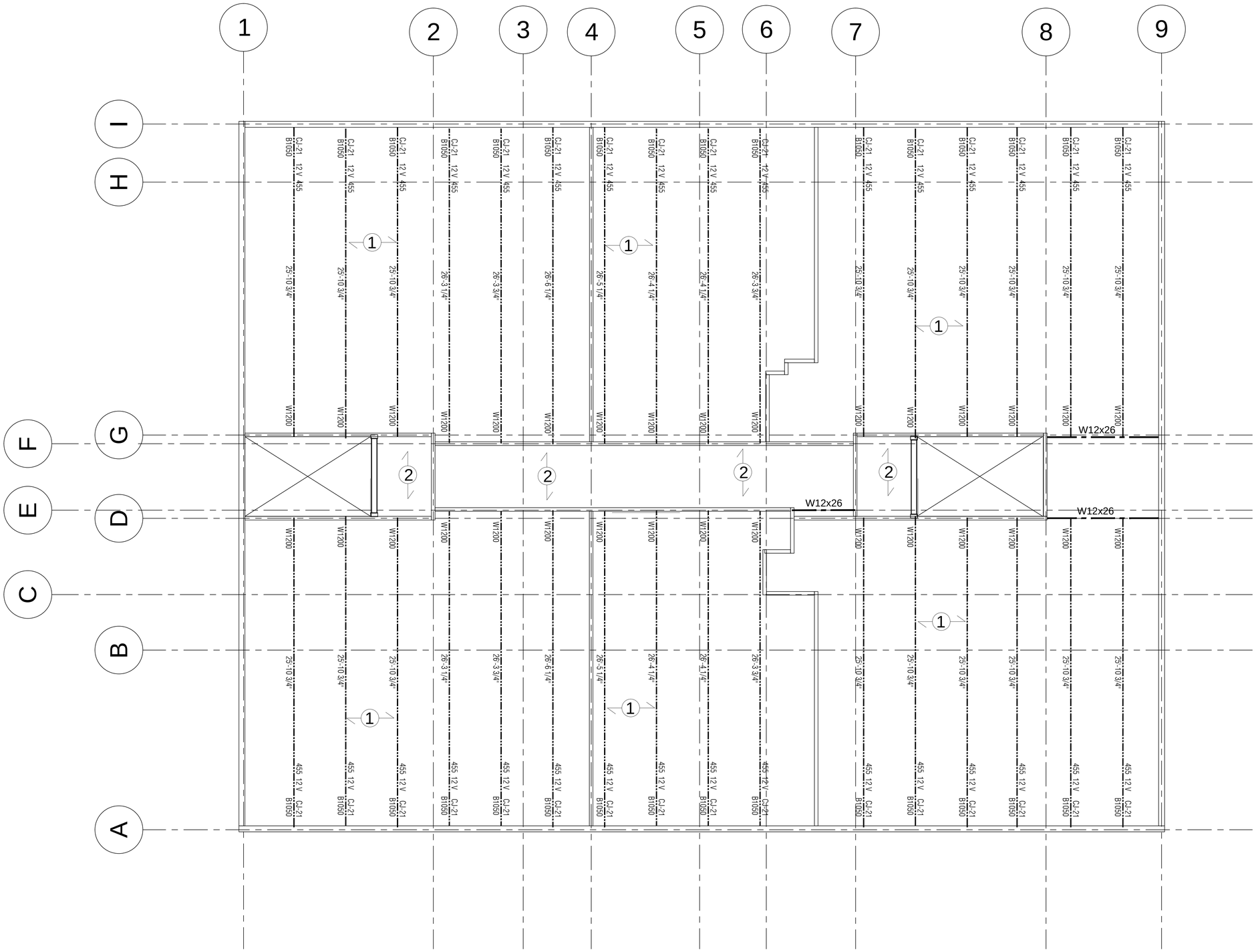

1 2nd Floor Walls and 3rd Floor Joists
1/4" = 1'-0"

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00

Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule	
Mark	Specification
1	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
2	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
3	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
4	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

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2nd Floor Walls and
3rd Floor Joists

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S-004.00

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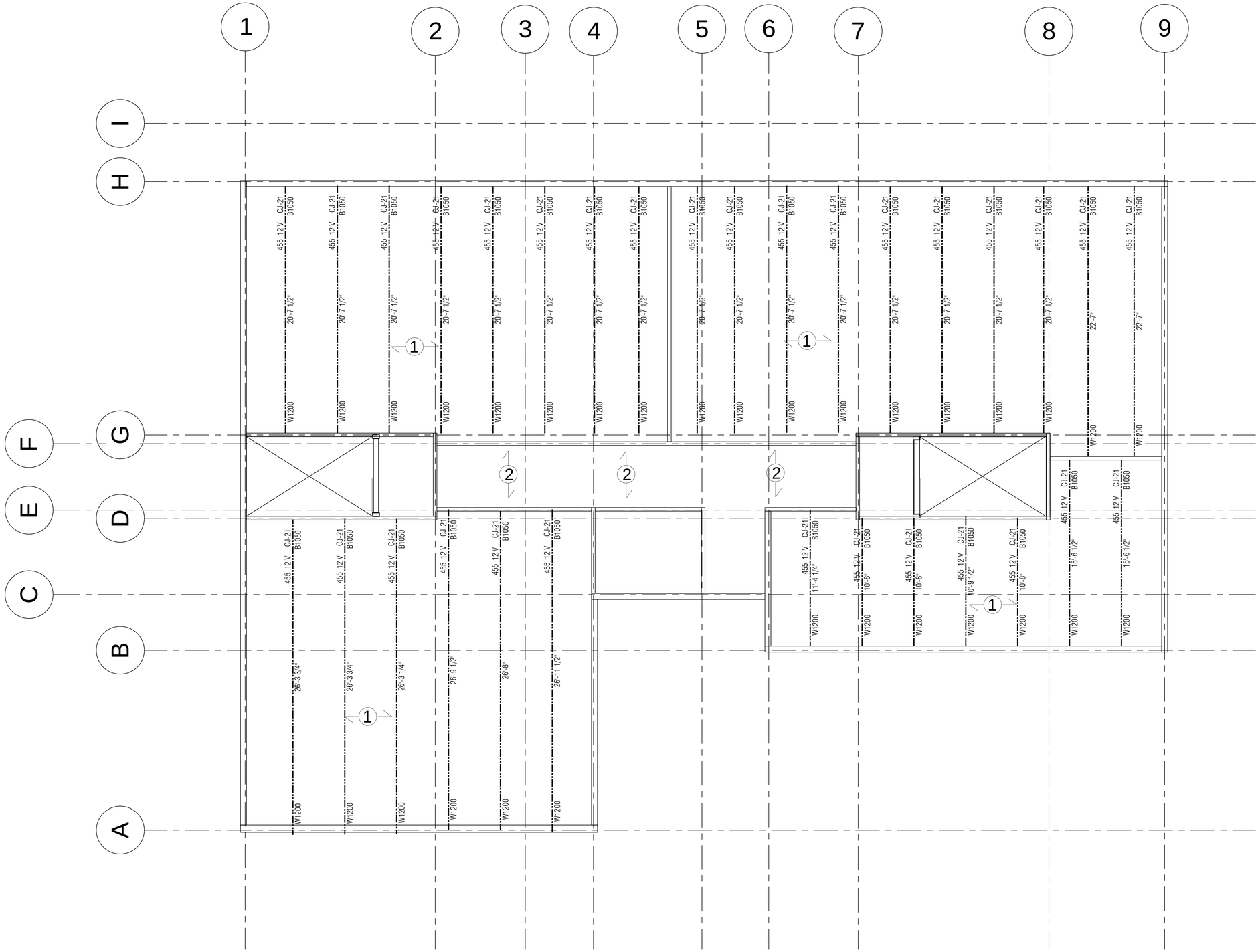

1 6th Floor Walls & Roof Joists
1/4" = 1'-0"

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00
Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00
Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule	
Mark	Specification
1	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
2	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
3	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
4	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

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6th Floor Walls and Roof Joists

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DATE: 06/01/2014
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S-005.00

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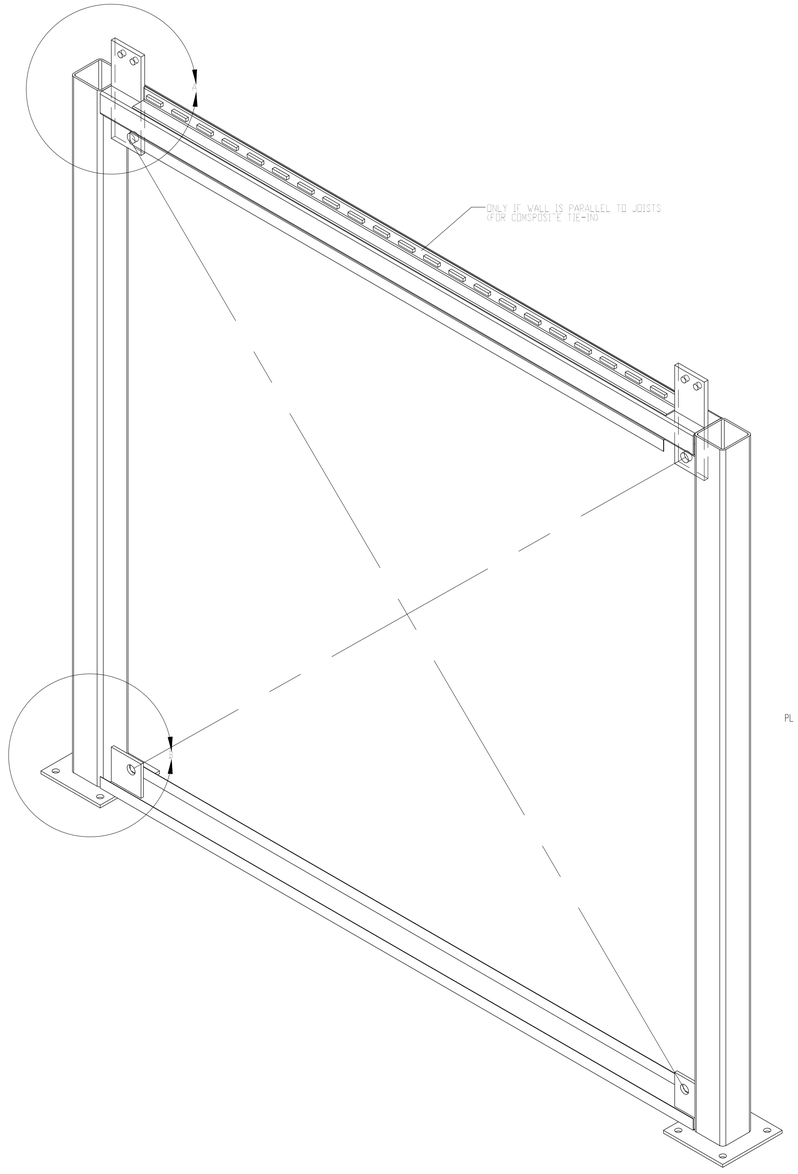
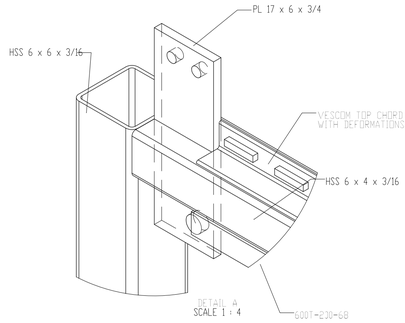
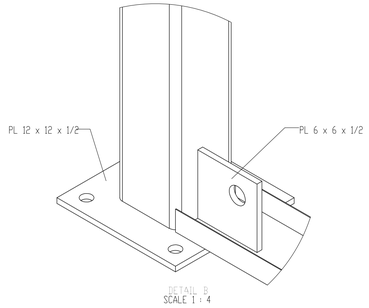
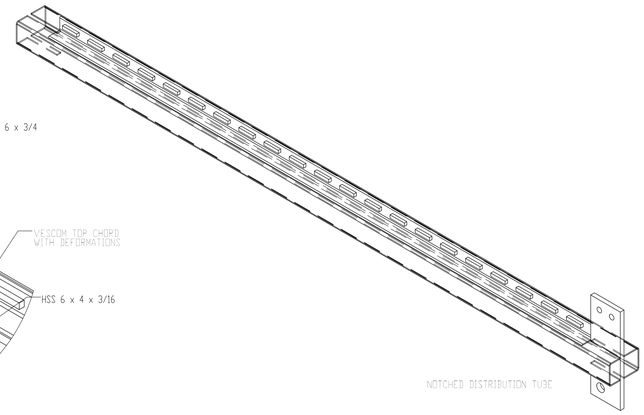
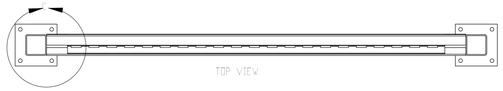


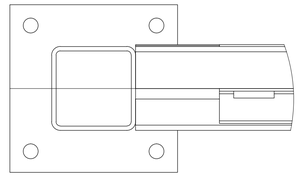
1 Shear Wall Details 1
N.T.S.











Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00

Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule	
Mark	Specification
1	1-5/16" UFX Gage 24 Uncoated 36" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max
2	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max
3	1-5/16" UFX Gage 24 Uncoated 36" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max
4	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

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818 Lexington Ave.
Brooklyn, NY

Shear Wall Details 1

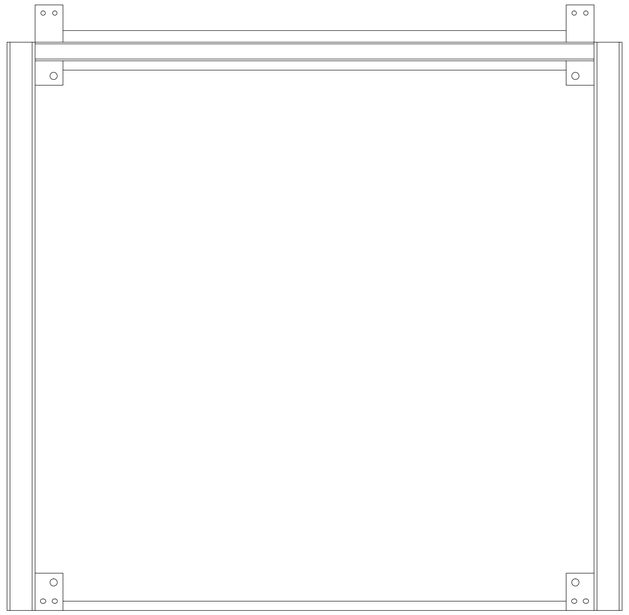
SEAL & SIGNATURE

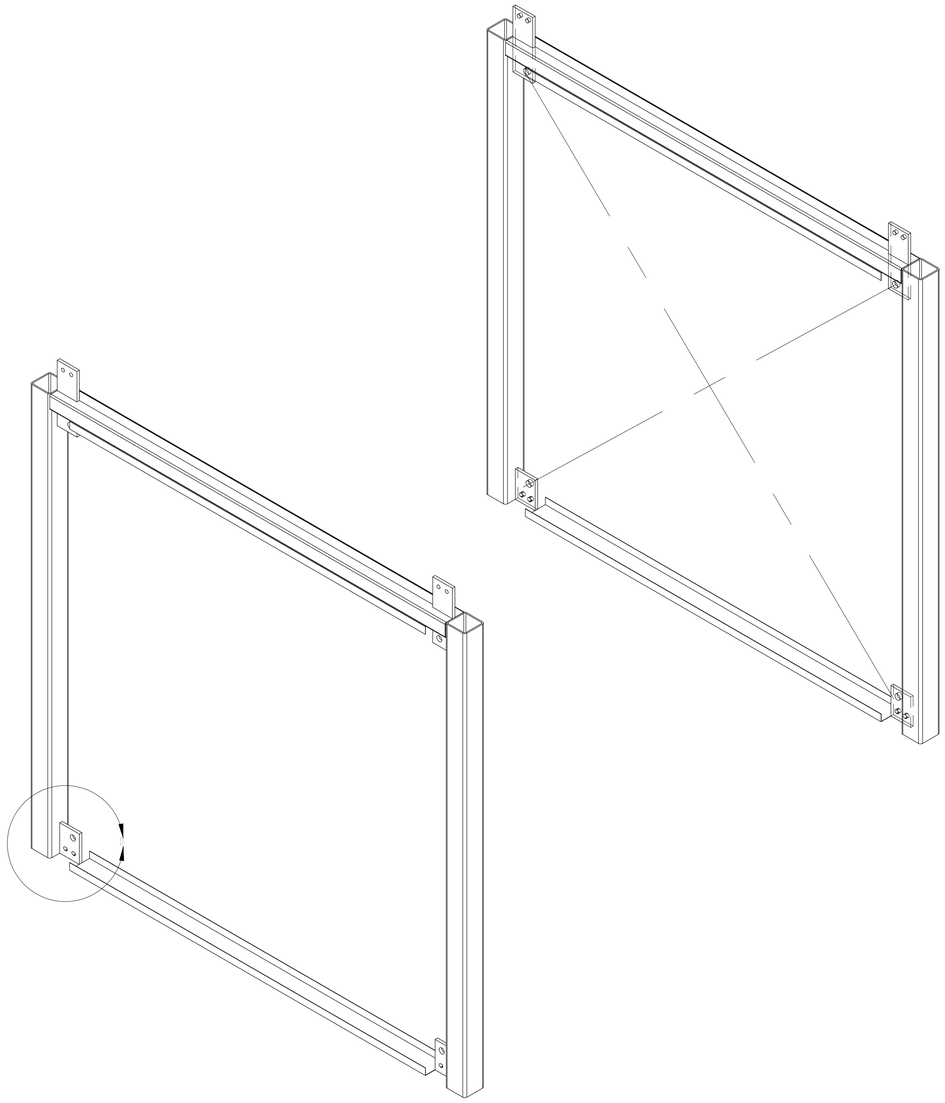
DATE: 06/01/2014
PROJECT No: ----
DRAWING BY: GA
DWG No:

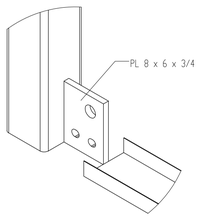
S-006.00

PAGE No OF No: 6-11

NYC DOB NUMBER:







DETAIL D
SCALE 1 : 6

1 Shear Wall Details 2
N.T.S.

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00

Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule	
Mark	Specification
①	1-5/16" UFX Gage 24 Uncoated 36" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max
②	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max
③	1-5/16" UFX Gage 24 Uncoated 36" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max
④	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage $\frac{3}{36}$ Pattern w/ #10 TEK Screw @ Midspan Or $\frac{5}{8}$" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

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Brooklyn, NY

Shear Wall Details 2

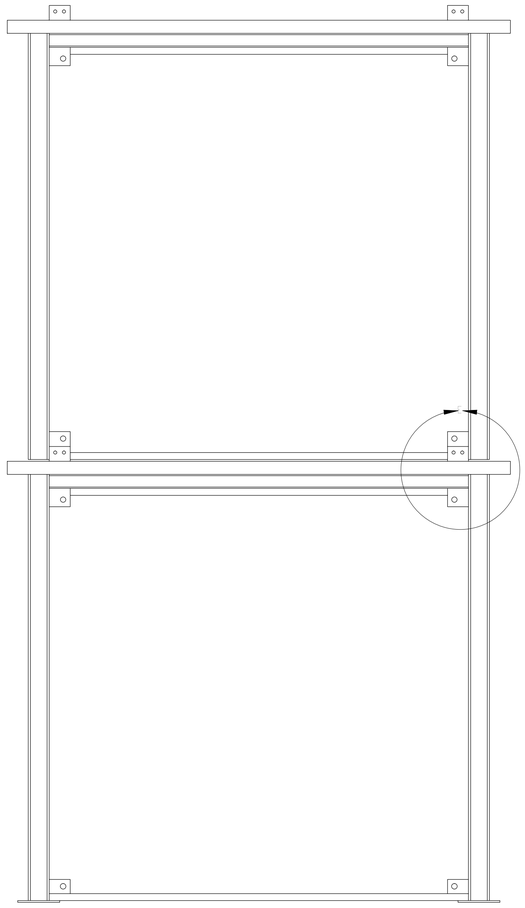
SEAL & SIGNATURE

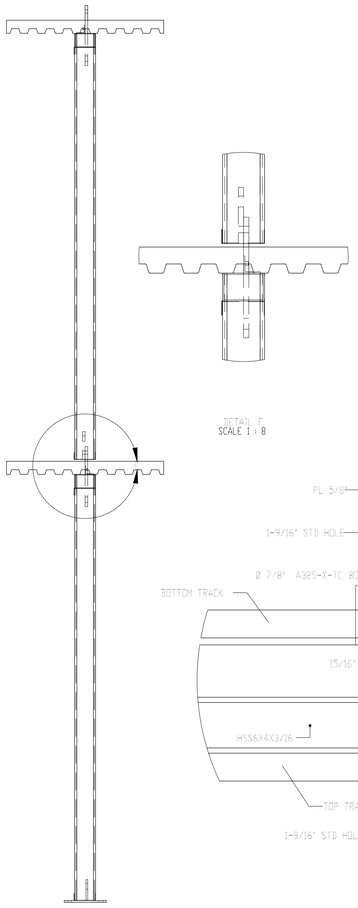
DATE: 06/01/2014
PROJECT No: ----
DRAWING BY: GA
DWG No:

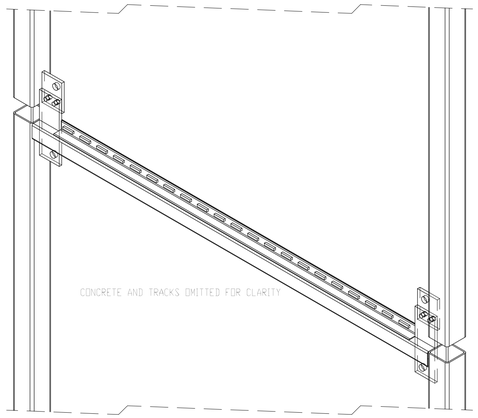
S-007.00

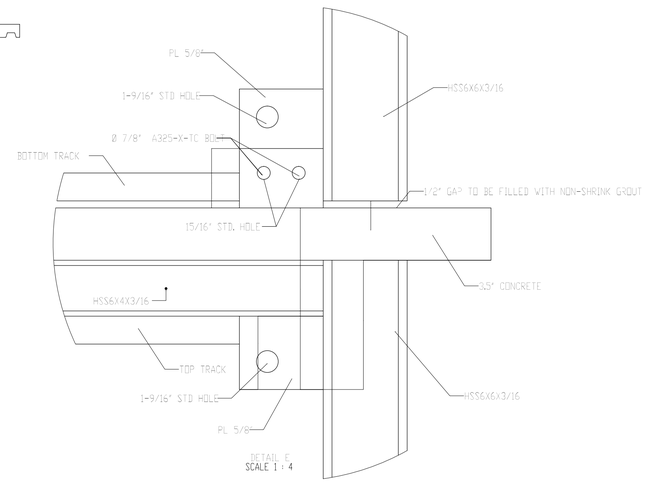
PAGE No OF No: 7-11

NYC DOB NUMBER:









1 Shear Wall Details 3
N.T.S.

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00
Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00
Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00
Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule	
Mark	Specification
<1>	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<2>	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<3>	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
<4>	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

Structural Engineer:
AVISHAY I. MAZOR P.E
1034 East 12th Street
Brooklyn, New York 11230
Tel: 718-859-6283
Fax: 718-859-6297
E-Mail: gatekeeper@aimazor.com

818 Lexington Ave.
Brooklyn, NY

Shear Wall Details 3

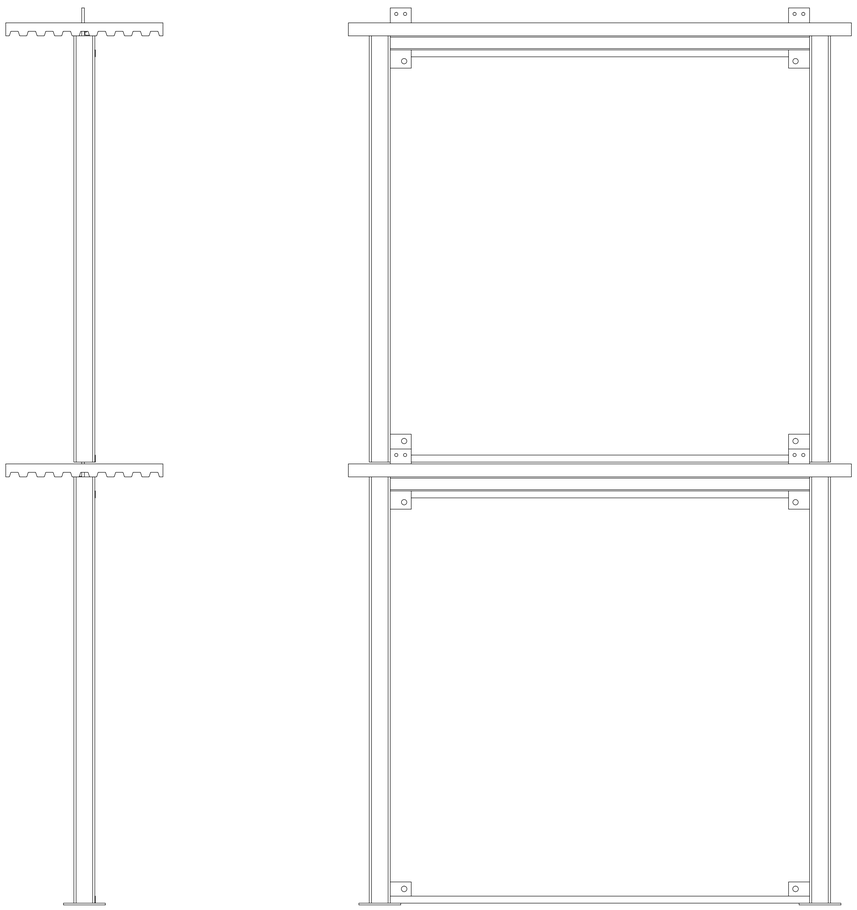
SEAL & SIGNATURE

DATE: 06/01/2014
PROJECT No: ----
DRAWING BY: GA
DWG No:

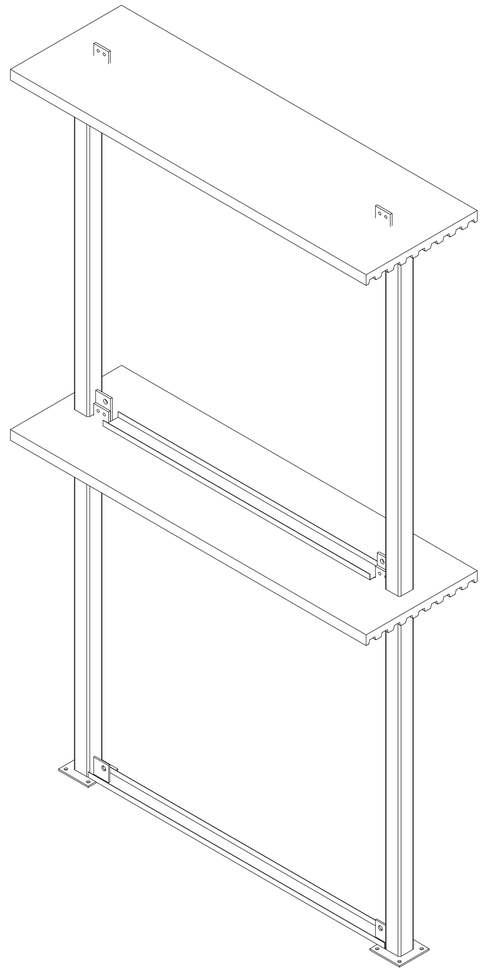
S-008.00

PAGE No OF No: 8-11

NYC DOB NUMBER:



1 Shear Wall Details 4
N.T.S.



2 Loading Schedule
N.T.S.

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00

Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

Decking Schedule	
Mark	Specification
1	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
2	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
3	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
4	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

Structural Engineer:
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818 Lexington Ave.
Brooklyn, NY

Shear Wall Details 4

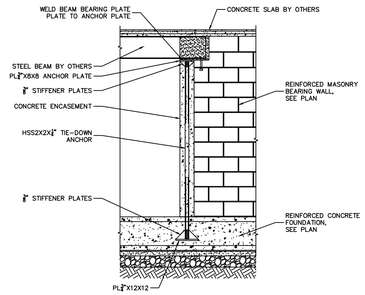
SEAL & SIGNATURE

DATE: 06/01/2014
PROJECT No: ----
DRAWING BY: GA
DWG No:

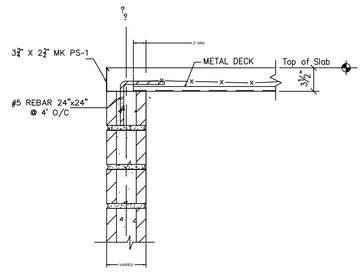
S-009.00

PAGE No OF No: 09-11

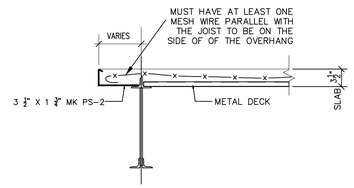
NYC DOB NUMBER:



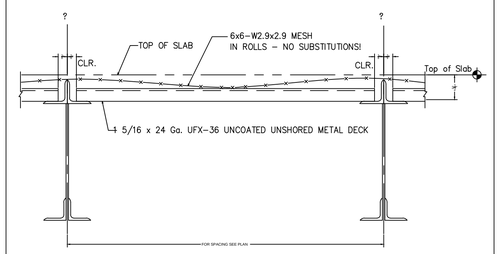
SECTION @ BRACING ANCHOR



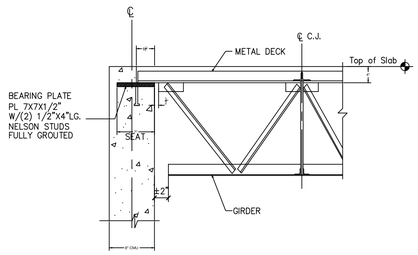
TYP. DECK TO WALL CONN. DETAIL



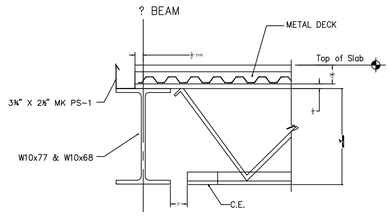
TYP. MESH LAYOUT @ SPANDREL JOISTS



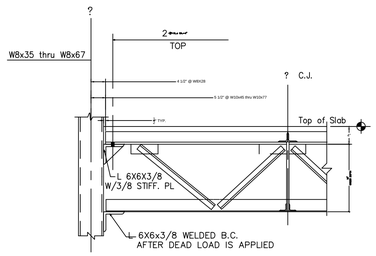
TYP. SLAB CONSTRUCTION DETAIL



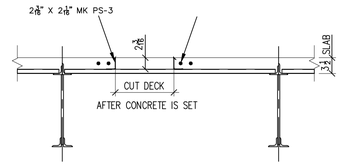
TYP. GIRDER TO WALL CONN. DETAIL



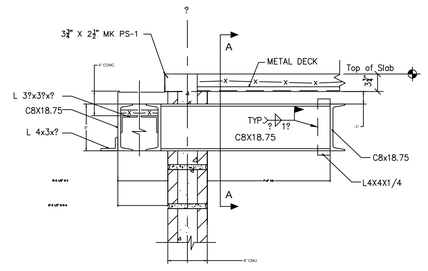
TYP. JOIST TO STEEL CONN. DETAIL



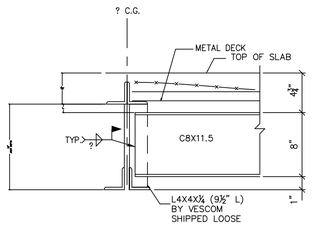
TYP. COMP GIRDER To COL. CONN. DETAIL



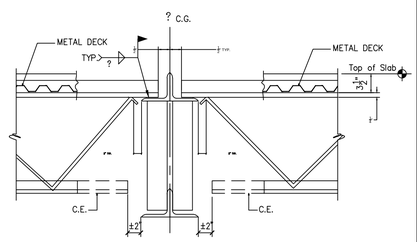
TYP. DETAIL @ OPENING NEXT TO COMP. JOIST



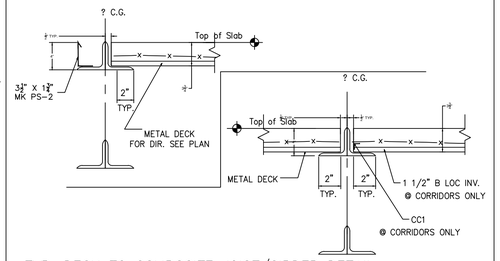
TYP. BALCONY CONN. DETAIL 5/5A



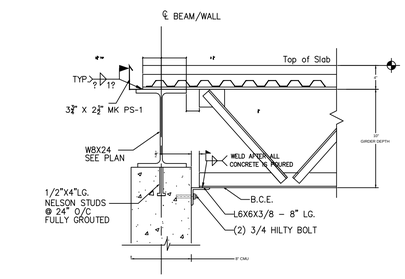
SECTION A-A, 6



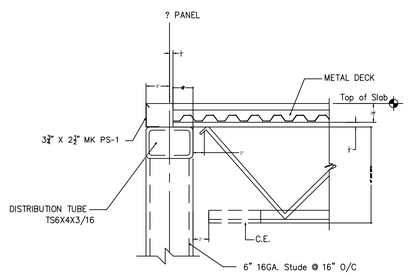
TYP. JOIST TO GIRDER CONN. DETAIL



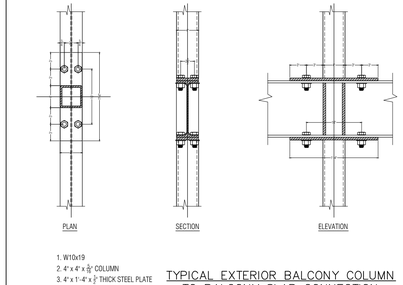
TYP. DECK TO COMPOSITE JOIST/GIRDER DETAIL



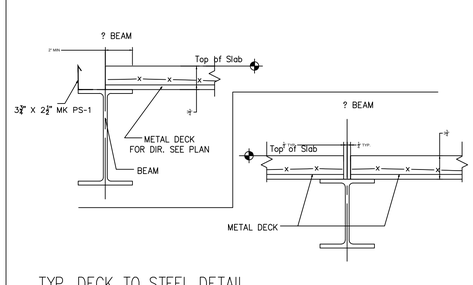
TYP. GIRDER TO BEARING STEEL CONN. DETAIL



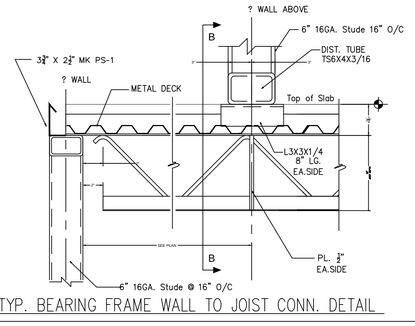
TYP. JOIST TO BEARING FRAME WALL CONN. DETAIL



TYPICAL EXTERIOR BALCONY COLUMN TO BALCONY SLAB CONNECTION



TYP. DECK TO STEEL DETAIL



TYP. BEARING FRAME WALL TO JOIST CONN. DETAIL

1 ABS Typical Details
N.T.S.

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00

Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule	
Mark	Specification
①	1-5/16" UFX Gage 24 Uncoated 36" Coverage ?" Pattern w/ #10 TEK Screw @ Midspan Or ?" Plug Weld 24" O.C. max
②	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage ?" Pattern w/ #10 TEK Screw @ Midspan Or ?" Plug Weld 24" O.C. max
③	1-5/16" UFX Gage 24 Uncoated 36" Coverage ?" Pattern w/ #10 TEK Screw @ Midspan Or ?" Plug Weld 24" O.C. max
④	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage ?" Pattern w/ #10 TEK Screw @ Midspan Or ?" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

Structural Engineer:
AVISHAY I. MAZOR P.E
1034 East 12th Street
Brooklyn, New York 11230
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Fax: 718-859-6297
E-Mail: gatekeeper@aimazor.com

818 Lexington Ave.
Brooklyn, NY

ABS Details

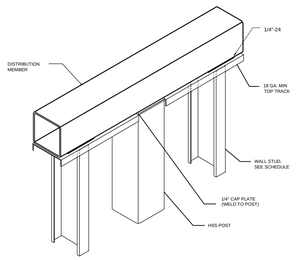
SEAL & SIGNATURE

DATE: 06/01/2014
PROJECT No: -----
DRAWING BY: GA
DWG No:

S-010.00

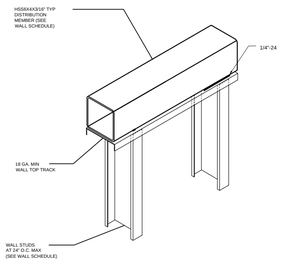
PAGE No OF No: 10-11

NYC DOB NUMBER:



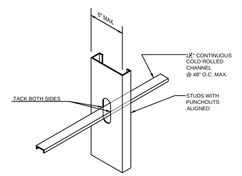
TYPICAL HSS POST IN WALL PANEL

NOT TO SCALE



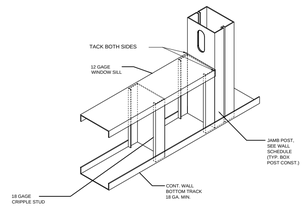
TYPICAL LDM-LOAD DISTRIBUTION MEMBER

NOT TO SCALE



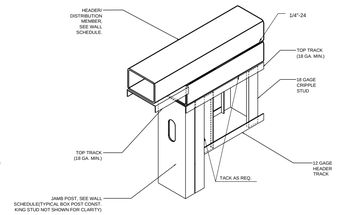
TYPICAL WALL BRIDGING DETAIL

NOT TO SCALE



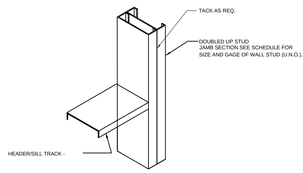
TYPICAL SILL CONSTRUCTION

NOT TO SCALE



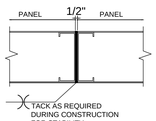
TYPICAL HEADER CONSTRUCTION OVER OPENING

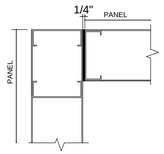
NOT TO SCALE



TYPICAL SINGLE TRACK SILL DETAIL
(HEADER SAME - OPPOSITE HAND)

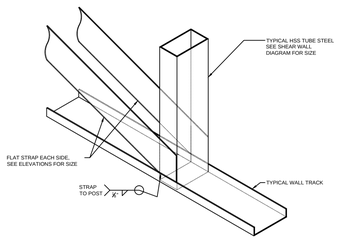
NOT TO SCALE





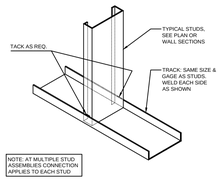
TYPICAL WALL PANELS INTERSECTION

NOT TO SCALE



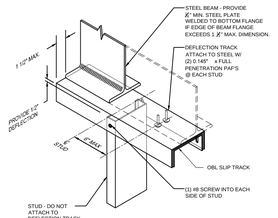
TYPICAL SHEAR WALL CONN. DETAIL

NOT TO SCALE



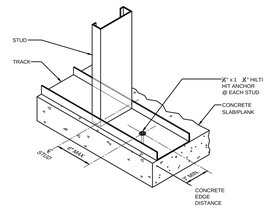
TYPICAL TRACK TO STUD DETAIL

NOT TO SCALE



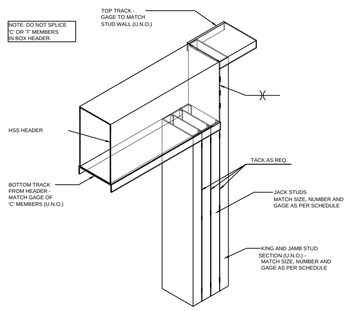
TYPICAL DEFLECTION TRACK DETAIL @ STUD

NOT TO SCALE



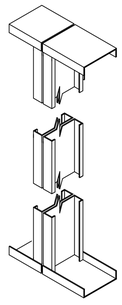
TYPICAL STUD/TRACK TO CONCRETE DETAIL

NOT TO SCALE

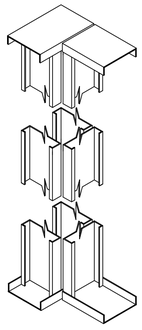


HSS HEADER AT BEARING WALL

NOT TO SCALE



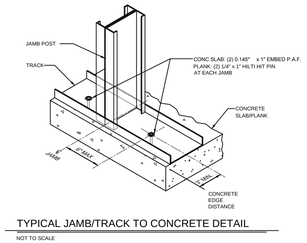
PARALLEL PANEL TO PANEL CONNECTION



PANEL TO PANEL CONNECTION @ CORNERS

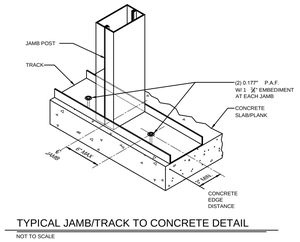
WALL PANEL TO WALL PANEL ATTACHMENTS

NOT TO SCALE



TYPICAL JAMB/TRACK TO CONCRETE DETAIL

NOT TO SCALE



TYPICAL JAMB/TRACK TO CONCRETE DETAIL

NOT TO SCALE

MATERIAL: ANCHORS=F1554/Gr.36; W SHAPE=A992; PLATES,BARS,CHANNELS AND ANGLES=A36; PIPES, HSS=A500Gr.B U.N.O.			
HOLES: 13/16 DIA. U/N	CONN'S: STD.	ELECTRODES: 70XX	WELD SIZE: 1/4" FILLET

APPROVAL / REVIEW AUTHORITY:
PLEASE REVIEW THIS DRAWING CAREFULLY.
IT REPRESENTS OUR INTERPRETATION OF THE INTENT OF THE CONTRACT DOCUMENTS. HOWEVER, THE STEEL FABRICATOR AND THE STRUCTURAL STEEL DETAILER ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING. THIS IS THE RESPONSIBILITY OF THE BUYER.

UNLESS NOTED TO THE CONTRARY ON THIS DRAWING WHEN IT IS RETURNED FROM APPROVAL. IT WILL BE ASSUMED THAT ALL INFORMATION SHOWN HEREIN HAS THE AFFIRMATION OF THE APPROVAL AUTHORITY.

SUBSEQUENT CHANGES TO INFORMATION SHOWN ON THESE DRAWINGS AFTER FIRST SUBMISSION WILL BE CONSIDERED CONTRACT CHANGES.

Adopted by the National Institute of Steel Detailing, 1977

1 Project Details
N.T.S.

Loading Schedule (PSF)

Loads Apartment	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Roof	
Dead Load	55.90
Live Load	40.00
Snow Load	30.00

Loads Balcony	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

Loads Hall/Lobby/Stair	
Dead Load	55.90
Live Load	40.00
Snow Load	00.00

Loads Parking/Driveway	
Dead Load	55.90
Live Load	60.00
Snow Load	30.00

2 Loading Schedule
N.T.S.

Decking Schedule	
Mark	Specification
1	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
2	1-1/2" "B" Lock Gage 20 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
3	1-5/16" UFX Gage 24 Uncoated 36" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max
4	Versa-Dek "S" Floor Gage 16 Uncoated 24.5" Coverage 3/36 Pattern w/ #10 TEK Screw @ Midspan Or 5/8" Plug Weld 24" O.C. max

3 Decking Schedule
N.T.S.

Structural Engineer:
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818 Lexington Ave.
Brooklyn, NY

Project Details

SEAL & SIGNATURE

DATE: 06/01/2014
PROJECT No: ----
DRAWING BY: GA
DWG No:

S-011.00

PAGE No OF No: 11-11

NYC DOB NUMBER:

ATTACHMENT B
CITIZEN PARTICIPATION PLAN

ATTACHMENT B
CITIZEN PARTICIPATION PLAN

The NYC Office of Environmental Remediation and Allan Lebovits PC have established this Citizen Participation Plan because the opportunity for citizen participation is an important component of the NYC Voluntary Cleanup Program. This Citizen Participation Plan describes how information about the project will be disseminated to the Community during the remedial process. As part of its obligations under the NYC VCP, Allan Lebovits PC will maintain a repository for project documents and provide public notice at specified times throughout the remedial program. This Plan also takes into account potential environmental justice concerns in the community that surrounds the project Site. Under this Citizen Participation Plan, project documents and work plans are made available to the public in a timely manner. Public comment on work plans is strongly encouraged during public comment periods. Work plans are not approved by the NYC Office of Environmental Remediation (OER) until public comment periods have expired and all comments are formally reviewed. An explanation of cleanup plans in the form of a public meeting or informational session is available upon request to OER's project manager assigned to this Site, Sarah Pong, who can be contacted about these issues or any others questions, comments or concerns that arise during the remedial process at (212) 788-8841.

Project Contact List. OER has established a Site Contact List for this project to provide public notices in the form of fact sheets to interested members of the Community. Communications will include updates on important information relating to the progress of the cleanup program at the Site as well as to request public comments on the cleanup plan. The Project Contact List includes owners and occupants of adjacent buildings and homes, principal administrators of nearby schools, hospitals and day care centers, the public water supplier that serves the area, established document repositories, the representative Community Board, City Council members, other elected representatives and any local Brownfield Opportunity Area (BOA) grantee organizations. Any member of the public or organization will be added to the Site Contact List on request. A copy of the Site Contact List is maintained by OER's project manager. If you would like to be added to the Project Contact List, contact NYC OER at (212) 788-8841 or by email at

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brownfields@cityhall.nyc.gov.

Repositories. A document repository is maintained in the nearest public library that maintains evening and weekend hours. This document repository is intended to house, for community review, all principal documents generated during the cleanup program including Remedial Investigation plans and reports, Remedial Action work plans and reports, and all public notices and fact sheets produced during the lifetime of the remedial project. Allan Lebovits PC will inspect the repositories to ensure that they are fully populated with project information. The repository for this project is:

Repository Name: Brooklyn Public Library - Dekalb Library Branch
Repository Address: 790 Bushwick Avenue, Brooklyn NY 11211
Repository Telephone Number: 718-455-3898
Repository Hours of Operation:

Mon	10:00AM - 6:00PM
Tue	10:00 AM - 6:00 PM
Wed	1:00 AM - 8:00 PM
Thu	10:00 AM - 6:00 PM
Fri	10:00 AM - 6:00 PM
Sat	10:00 AM - 5:00 PM
Sun	closed

Digital Documentation. NYC OER strongly encourages the use of digital documents in repositories as a means of minimizing paper use while also increasing convenience in access and ease of use.

Identify Issues of Public Concern. The major issues of concern to the public will be potential impacts of nuisance odors and dust during the disturbance of historic fill soils at the Site. This work will be performed in accordance with procedures which will be specified under a detailed

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Remedial Program which considers and takes preventive measures for exposures to future residents of the property and those on adjacent properties during construction. Detailed plans to monitor the potential for exposure including a Construction Health and Safety Plan and a Community Air Monitoring Plan are required components of the remedial program. Implementation of these plans will be under the direct oversight of the New York City Department of Environmental Remediation (NYCOER).

These plans will specify the following worker and community health and safety activities during remedial activity at the Site:

- On-Site air monitoring for worker protection,
- Perimeter air monitoring for community protection.

The Health and Safety Plan and the Community Air Monitoring Plan prepared as part of the Remedial Action Work Plan will be available for public review at the document repository.

Public Notice and Public Comment. Public notice to all members of the Project Contact List is required at three major steps during the performance of the cleanup program (listed below) and at other points that may be required by OER. Notices will include Fact Sheets with descriptive project summaries, updates on recent and upcoming project activities, repository information, and important phone and email contact information. All notices will be prepared by Allan Lebovits PC, LLC, reviewed and approved by OER prior to distribution and mailed by Allan Lebovits PC, LLC. Public comment is solicited in public notices for all work plans developed under the NYC Voluntary Cleanup Program. Final review of all work plans by OER will consider all public comments. Approval will not be granted until the public comment period has been completed.

Citizen Participation Milestones. Public notice and public comment activities occur at several steps during a typical NYC VCP project. See flow chart on the following page, which identifies when during the NYC VCP public notices are issued: These steps include:

- **Public Notice of the availability of the Remedial Investigation Report and Remedial**

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Action Work Plan and a 30-day public comment period on the Remedial Action Work Plan.

Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the availability of the Remedial Investigation Report and Remedial Action Work Plan and the initiation of a 30-day public comment period on the Remedial Action Work Plan. The Fact Sheet summarizes the findings of the RIR and provides details of the RAWP. The public comment period will be extended an additional 15 days upon public request. A public meeting or informational session will be conducted by OER upon request.

- **Public Notice announcing the approval of the RAWP and the start of remediation**

  Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the approval of the RAWP and the start of remediation.

- **Public Notice announcing the completion of remediation, designation of Institutional and Engineering Controls and issuance of the Notice of Completion**

  Public notice in the form of a Fact Sheet is sent to all parties listed on the Site Contact List announcing the completion of remediation, providing a list of all Institutional and Engineering Controls implemented for to the Site and announcing the issuance of the Notice of Completion

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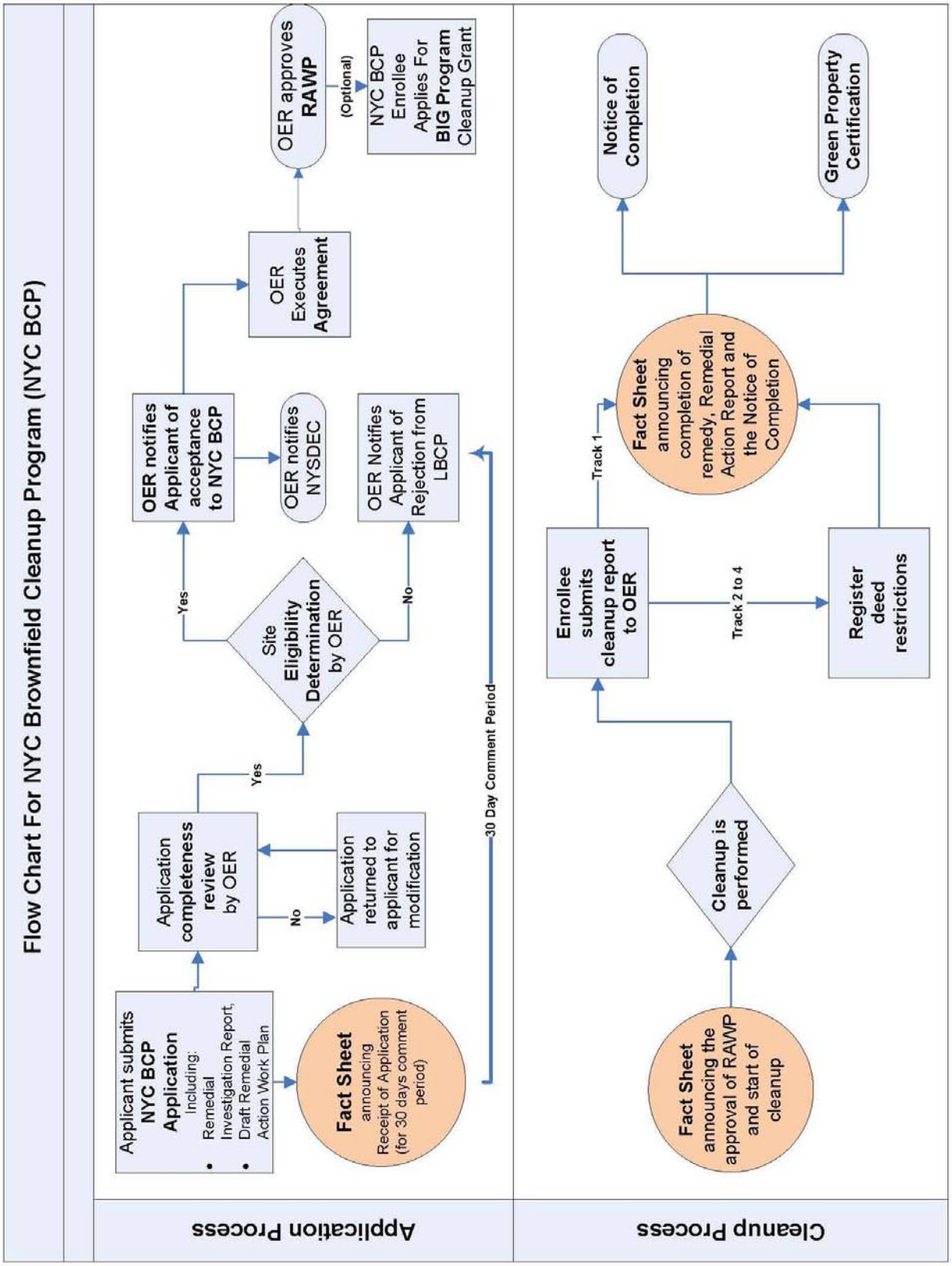

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ATTACHMENT C
SUSTAINABILITY STATEMENT

ATTACHMENT C
SUSTAINABILITY STATEMENT

This Sustainability Statement documents sustainable activities and green remediation efforts planned under this remedial action.

Reuse of Clean, Recyclable Materials. Reuse of clean, locally-derived recyclable materials reduces consumption of non-renewable virgin resources and can provide energy savings and greenhouse gas reduction.

This project intends to use recycled concrete aggregate wherever possible in grading and backfilling the Site. An estimate of the quantity (in tons) of clean, non-virgin materials (reported by type of material) reused under this plan will be quantified and reported in the RAR.

Reduce Consumption of Virgin and Non-Renewable Resources. Reduced consumption of virgin and non-renewable resources lowers the overall environmental impact of the project on the region by conserving these resources.

The project will reduce the consumption of virgin materials by substituting recycled concrete aggregate for mined gravel and/or sand backfill whenever possible. An estimate of the quantity (in tons) of virgin and non-renewable resources, the use of which will be avoided under this plan, will be quantified and reported in the RAR.

Reduced Energy Consumption and Promotion of Greater Energy Efficiency. Reduced energy consumption lowers greenhouse gas emissions, improves local air quality, lessens in-city power generation requirements, can lower traffic congestion, and provides substantial cost savings.

Recycled concrete materials and other backfill materials will be locally sourced reducing the energy consumption associated with transporting these materials to the Site. Best efforts will be made to quantify energy efficiencies achieved during the remediation and will be reported in the Remedial Action Report (RAR). Where energy savings cannot be easily quantified, a gross indicator of the amount of energy saved or the means by which energy savings was achieved will

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be reported.

Paperless Voluntary Cleanup Program. Allan Lebovits PC is participating in OER's Paperless Voluntary Cleanup Program. Under this program, submission of electronic documents will replace submission of hard copies for the review of project documents, communications and milestone reports.

Low-Energy Project Management Program. Allan Lebovits PC is participating in OER's low-energy project management program. Under this program, whenever possible, meetings are held using remote communication technologies, such as videoconferencing and teleconferencing to reduce energy consumption and traffic congestion associated with personal transportation.

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ATTACHMENT D
SOIL/MATERIALS MANAGEMENT PLAN

ATTACHMENT D
SOIL/MATERIALS MANAGEMENT PLAN

1.1 SOIL SCREENING METHODS

Visual, olfactory and PID soil screening and assessment will be performed under the supervision of a Qualified Environmental Professional and will be reported in the RAR. Soil screening will be performed during invasive work performed during the remedy and development phases prior to issuance of the Notice of Completion.

1.2 STOCKPILE METHODS

Excavated soil from suspected areas of contamination (e.g., hot spots, USTs, drains, etc.) will be stockpiled separately and will be segregated from clean soil and construction materials. Stockpiles will be used only when necessary and will be removed as soon as practicable. While stockpiles are in place, they will be inspected daily, and before and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. Excavated soils will be stockpiled on, at minimum, double layers of 8-mil minimum sheeting, will be kept covered at all times with appropriately anchored plastic tarps, and will be routinely inspected. Broken or ripped tarps will be promptly replaced.

All stockpile activities will be compliant with applicable laws and regulations. Soil stockpile areas will be appropriately graded to control run-off in accordance with applicable laws and regulations. Stockpiles of excavated soils and other materials shall be located at least of 50 feet from the property boundaries, where possible. Hay bales or equivalent will surround soil stockpiles except for areas where access by equipment is required. Silt fencing and hay bales will be used as needed near catch basins, surface waters and other discharge points.

1.3 CHARACTERIZATION OF EXCAVATED MATERIALS

Soil/fill or other excavated media that is transported off-Site for disposal will be sampled in a manner required by the receiving facility, and in compliance with applicable laws and regulations. Soils proposed for reuse on-Site will be managed as defined in this plan.

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1.4 MATERIALS EXCAVATION, LOAD-OUT AND DEPARTURE

The PE/QEP overseeing the remedial action will:

- oversee remedial work and the excavation and load-out of excavated material;
- ensure that there is a party responsible for the safe execution of invasive and other work performed under this work plan;
- ensure that Site development activities and development-related grading cuts will not interfere with, or otherwise impair or compromise the remedial activities proposed in this RAWP;
- ensure that the presence of utilities and easements on the Site has been investigated and that any identified risks from work proposed under this plan are properly addressed by appropriate parties;
- ensure that all loaded outbound trucks are inspected and cleaned if necessary before leaving the Site; and
- ensure that all egress points for truck and equipment transport from the Site will be kept clean of Site-derived materials during Site remediation.

Locations where vehicles exit the Site shall be inspected daily for evidence of soil tracking off premises. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site-derived materials.

Open and uncontrolled mechanical processing of historical fill and contaminated soil on-Site will not be performed without prior OER approval.

1.5 OFF-SITE MATERIALS TRANSPORT

Loaded vehicles leaving the Site will comply with all applicable materials transportation requirements (including appropriate covering, manifests, and placards) in accordance with applicable laws and regulations, including use of licensed haulers in accordance with 6 NYCRR Part 364. If loads contain wet material capable of causing leakage from trucks, truck liners will be used. Queuing of trucks will be performed on-Site, when possible in order to minimize off Site disturbance. Off-Site queuing will be minimized. The outbound truck transport route is shown on Figure 10.

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This routing takes into account the following factors: (a) limiting transport through residential areas and past sensitive sites; (b) use of mapped truck routes; (c) minimizing off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport. To the extent possible, all trucks loaded with Site materials will travel from the Site using these truck routes. Trucks will not stop or idle in the neighborhood after leaving the project Site.

1.6 MATERIALS DISPOSAL OFF-SITE

The following documentation will be established and reported by the PE/QEP for each disposal destination used in this project to document that the disposal of regulated material exported from the Site conforms with applicable laws and regulations: (1) a letter from the PE/QEP or Enrollee to each disposal facility describing the material to be disposed and requesting written acceptance of the material. This letter will state that material to be disposed is regulated material generated at an environmental remediation Site in Brooklyn, New York under a governmental remediation program. The letter will provide the project identity and the name and phone number of the PE/QEP or Enrollee. The letter will include as an attachment a summary of all chemical data for the material being transported; and (2) a letter from each disposal facility stating it is in receipt of the correspondence (1, above) and is approved to accept the material. These documents will be included in the RAR.

The Remedial Action Report will include an itemized account of the destination of all material removed from the Site during this remedial action. Documentation associated with disposal of all material will include records and approvals for receipt of the material. This information will be presented in the RAR.

All impacted soil/fill or other waste excavated and removed from the Site will be managed as regulated material and will be disposed in accordance with applicable laws and regulations. Historic fill and contaminated soils taken off-Site will be handled as solid waste and will not be disposed at a Part 360-16 Registration Facility (also known as a Soil Recycling Facility).

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Waste characterization will be performed for off-Site disposal in a manner required by the receiving facility and in conformance with its applicable permits. Waste characterization sampling and analytical methods, sampling frequency, analytical results and QA/QC will be reported in the RAR. A manifest system for off-Site transportation of exported materials will be employed. Manifest information will be reported in the RAR. Hazardous wastes derived from on-Site will be stored, transported, and disposed of in compliance with applicable laws and regulations.

If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e., clean soil removed for development purposes), including transport to a Part 360-16 Registration Facility, a formal request will be made for approval by OER with an associated plan compliant with 6NYCRR Part 360-16. This request and plan will include the location, volume and a description of the material to be recycled, including verification that the material is not impacted by site uses and that the material complies with receipt requirements for recycling under 6NYCRR Part 360. This material will be appropriately handled on-Site to prevent mixing with impacted material.

1.7 MATERIALS REUSE ON-SITE

Soil and fill that is derived from the property that meets the soil cleanup objectives established in this plan may be reused on-Site. The soil cleanup objectives for on-Site reuse are listed in Table 1. ‘Reuse on-Site’ means material that is excavated during the remedy or development, does not leave the property, and is relocated within the same property and on comparable soil/fill material, and addressed pursuant to the NYC VCP agreement subject to Engineering and Institutional Controls. The PE/QEP will ensure that reused materials are segregated from other materials to be exported from the Site and that procedures defined for material reuse in this RAWP are followed.

Organic matter (wood, roots, stumps, etc.) or other waste derived from clearing and grubbing of the Site will not be buried on-Site. Soil or fill excavated from the site for grading or other purposes will not be reused within a cover soil layer or within landscaping berms.

1.8 DEMARCATION

After completion of hotspot removal and any other invasive remedial activities, and prior to

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backfilling, the top of the residual soil/fill will be defined by one of three methods: (1) placement of a demarcation layer. The demarcation layer will consist of geosynthetic fencing or equivalent material to be placed on the surface of residual soil/fill to provide an observable reference layer. A description or map of the approximate depth of the demarcation layer will be provided in the SMP; or (2) a land survey of the top elevation of residual soil/fill before the placement of cover soils, pavement and associated sub-soils, or other materials or structures or, (3) all materials beneath the approved cover will be considered impacted and subject to site management after the remedy is complete. Demarcation may be established by one or any combination of these three methods. As appropriate, a map showing the method of demarcation for the Site and all associated documentation will be presented in the RAR.

This demarcation will constitute the top of the site management horizon. Materials within this horizon require adherence to special conditions during future invasive activities as defined in the Site Management Plan.

1.9 IMPORT OF BACKFILL SOIL FROM OFF-SITE SOURCES

This Section presents the requirements for imported fill materials to be used below the cover layer and within the clean soil cover layer. All imported soils will meet OER-approved backfill and cover soil quality objectives for this Site. The backfill and cover soil quality objectives are listed in Table 1.

A process will be established to evaluate sources of backfill and cover soil to be imported to the Site, and will include an examination of source location, current and historical use(s), and any applicable documentation. Material from industrial sites, spill sites, environmental remediation sites or other potentially contaminated sites will not be imported to the Site.

The following potential sources may be used pending attainment of backfill and cover soil quality objectives:

- Clean soil from construction projects at non-industrial sites in compliance with applicable laws and regulations;
- Clean soil from roadway or other transportation-related projects in compliance with

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applicable laws and regulations;

- Clean recycled concrete aggregate (RCA) from facilities permitted or registered by the regulations of NYS DEC.

All materials received for import to the Site will be approved by a PE/QEP and will be in compliance with provisions in this RAWP. The RAR will report the source of the fill, evidence that an inspection was performed on the source, chemical sampling results, frequency of testing, and a Site map indicating the locations where backfill or soil cover was placed.

Source Screening and Testing

Inspection of imported fill material will include visual, olfactory and PID screening for evidence of contamination. Materials imported to the Site will be subject to inspection, as follows:

- Trucks with imported fill material will be in compliance with applicable laws and regulations and will enter the Site at designated locations;
- The PE/QEP is responsible to ensure that every truck load of imported material is inspected for evidence of contamination; and
- Fill material will be free of solid waste including pavement materials, debris, stumps, roots, and other organic matter, as well as ashes, oil, perishables or foreign matter.

Composite samples of imported material will be taken at a minimum frequency of one sample for every 500 cubic yards of material. Once it is determined that the fill material meets imported backfill or cover soil chemical requirements and is non-hazardous, and lacks petroleum contamination, the material will be loaded onto trucks for delivery to the Site.

Recycled concrete aggregate (RCA) will be imported from facilities permitted or registered by NYSDEC. Facilities will be identified in the RAR. A PE/QEP is responsible to ensure that the facility is compliant with 6NYCRR Part 360 registration and permitting requirements for the period of acquisition of RCA. RCA imported from compliant facilities will not require additional testing, unless required by NYSDEC under its terms for operation of the facility. RCA imported to the Site must be derived from recognizable and uncontaminated concrete. RCA material is not acceptable for, and will not be used as cover material.

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1.10 FLUIDS MANAGEMENT

All liquids to be removed from the Site, including dewatering fluids, will be handled, transported and disposed in accordance with applicable laws and regulations. Liquids discharged into the New York City sewer system will receive prior approval by New York City Department of Environmental Protection (NYC DEP). The NYC DEP regulates discharges to the New York City sewers under Title 15, Rules of the City of New York Chapter 19. Discharge to the New York City sewer system will require an authorization and sampling data demonstrating that the groundwater meets the City's discharge criteria. The dewatering fluid will be pretreated as necessary to meet the NYC DEP discharge criteria. If discharge to the City sewer system is not appropriate, the dewatering fluids will be managed by transportation and disposal at an off-Site treatment facility.

Discharge of water generated during remedial construction to surface waters (i.e. a stream or river) is prohibited without a SPDES permit issued by New York State Department of Environmental Conservation.

1.11 STORM-WATER POLLUTION PREVENTION

Applicable laws and regulations pertaining to storm-water pollution prevention will be addressed during the remedial program. Erosion and sediment control measures identified in this RAWP (silt fences and barriers, and hay bale checks) will be installed around the entire perimeter of the remedial construction area and inspected once a week and after every storm event to ensure that they are operating appropriately. Discharge locations will be inspected to determine whether erosion control measures are effective in preventing significant impacts to receptors. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by OER. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and hay bale check functional. Undercutting or erosion of the silt fence toe anchor will be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

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1.12 CONTINGENCY PLAN

This contingency plan is developed for the remedial construction to address the discovery of unknown structures or contaminated media during excavation. Identification of unknown contamination source areas during invasive Site work will be promptly communicated to OER's Project Manager. Petroleum spills will be reported to the NYS DEC Spill Hotline. These findings will be included in the daily report. If previously unidentified contaminant sources are found during on-Site remedial excavation or development-related excavation, sampling will be performed on contaminated source material and surrounding soils and reported to OER. Chemical analytical testing will be performed for TAL metals, TCL volatiles and semi-volatiles, TCL pesticides and PCBs, as appropriate.

1.13 ODOR, DUST AND NUISANCE CONTROL

Odor Control

All necessary means will be employed to prevent on- and off-Site odor nuisances. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) use of foams to cover exposed odorous soils. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; and (e) use of chemical odorants in spray or misting systems.

This odor control plan is capable of controlling emissions of nuisance odors. If nuisance odors are identified, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. OER will be notified of all odor complaint events. Implementation of all odor controls, including halt of work, will be the responsibility of the PE/QEP's certifying the Remedial Action Report.

Dust Control

Dust management during invasive on-Site work will include, at a minimum:

- Use of a dedicated water spray methodology for roads, excavation areas and stockpiles.
- Use of properly anchored tarps to cover stockpiles.
- Exercise extra care during dry and high-wind periods.

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- Use of gravel or recycled concrete aggregate on egress and other roadways to provide a clean and dust-free road surface.

This dust control plan is capable of controlling emissions of dust. If nuisance dust emissions are identified, work will be halted and the source of dusts will be identified and corrected. Work will not resume until all nuisance dust emissions have been abated. OER will be notified of all dust complaint events. Implementation of all dust controls, including halt of work, will be the responsibility of the PE/QEP's responsible for certifying the Remedial Action Report.

Other Nuisances

Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to NYC noise control standards.

Rodent control will be provided, during Site clearing and grubbing, and during the remedial program, as necessary, to prevent nuisances.

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ATTACHMENT E
SITE SPECIFIC CONSTRUCTION HEALTH AND SAFETY PLAN

REDEVELOPMENT PROJECT
818 LEXINGTON AVENUE
BROOKLYN, NEW YORK

CONSTRUCTION HEALTH AND SAFETY PLAN

JULY 2014

Prepared for:
Allan Lebovits PC
266 Broadway Suite 304
Brooklyn, NY 11211

Prepared By:

EBC
ENVIRONMENTAL BUSINESS CONSULTANTS
1808 Middle Country Road
Ridge, NY 11961

HEALTH AND SAFETY PLAN

Site:	**Redevelopment Project - ALP1403**
Location:	**818 Lexington Avenue, Brooklyn, NY**
Prepared By:	**ENVIRONMENTAL BUSINESS CONSULTANTS**
Date Prepared:	**July - 2014**
Version:	**1**
Revision:	**0**

Project Description:

Waste types:	Solid
Characteristics:	Semi-Volatile Organic Compounds, metals, and pesticides – in historic fill (Grade to 8 feet of soil)
Overall Hazard:	Low

ENVIRONMENTAL BUSINESS CONSULTANTS (EBC) AND EBC'S SUBCONTRACTORS DO NOT GUARANTEE THE HEALTH OR SAFETY OF ANY PERSON ENTERING THIS SITE. DUE TO THE NATURE OF THIS SITE AND THE ACTIVITY OCCURRING THEREON, IT IS NOT POSSIBLE TO DISCOVER, EVALUATE, AND PROVIDE PROTECTION FOR ALL POSSIBLE HAZARDS WHICH MAY BE ENCOUNTERED. STRICT ADHERENCE TO THE HEALTH AND SAFETY GUIDELINES SET FORTH HEREIN WILL REDUCE, BUT NOT ELIMINATE, THE POTENTIAL FOR INJURY AT THIS SITE. THE HEALTH AND SAFETY GUIDELINES IN THIS PLAN WERE PREPARED SPECIFICALLY FOR THIS SITE AND SHOULD NOT BE USED ON ANY OTHER SITE WITHOUT PRIOR RESEARCH AND EVALUATION.

CONSTRUCTION HEALTH AND SAFETY PLAN
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FIGURES

APPENDICES

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STATEMENT OF COMMITMENT

This Health and Safety Plan (HASP) has been prepared to ensure that workers are not exposed to risks from hazardous materials during the Remedial Activities planned for 818 Lexington Avenue, Brooklyn, New York.

This HASP, which applies to persons present at the site actually or potentially exposed to hazardous materials, describes emergency response procedures for actual and potential chemical hazards. This HASP is also intended to inform and guide personnel entering the work area or exclusion zone. Persons are to acknowledge that they understand the potential hazards and the contents of this Health and Safety policy by signing off on receipt of their individual copy of the document. The General Contractor and their subcontractors and suppliers are retained as independent contractors and are responsible for ensuring the health and safety of their own employees. The General contractor has the option of adopting this HASP or providing its own for the planned scope of work under the Remedial Action Plan.

1.0 INTRODUCTION

This document describes the health and safety guidelines developed by Environmental Business Consultants (EBC) for implementation of a Remedial Action Plan at Redevelopment Project located at 818 Lexington Avenue, Brooklyn, NY, to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes during the removal of underground storage tanks and the excavation and loading of contaminated soil. In accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response Final rule, this CHASP, including the attachments, addresses safety and health hazards related to subsurface sample collection activities and is based on the best information available. The CHASP may be revised by EBC at the request of Allan Lebovits PC ("the Developer") and/or the New York State Department of Environmental Conservation (NYSDEC) or New York City Office of Environmental Remediation (NYCOER) upon receipt of new information regarding site conditions. Changes will be documented by written amendments signed by EBC's Project Manager, site safety officer and/or the EBC Health and Safety Consultant.

1.1 Scope

This CHASP addresses the potential hazards related to the site Remedial Action Plan (RAP). The RAP activities are as described below:

1) Site mobilization of General Contractor (GC) and Subcontractors to install the building foundation.
   a) Excavate top 8 feet of historic fill from Site.
   b) Excavate as necessary for installation of new building's foundation.

1.2 Application

The HASP applies to all personnel involved in the above tasks who wish to gain access to active work areas, including but not limited to:

- General Contractor
- EBC employees and subcontractors;
- Client representatives; and
- Federal, state or local representatives.

1.3 Site Safety Plan Acceptance, Acknowledgment and Amendments

The project superintendent and the site safety officer are responsible for informing personnel (EBC employees and/or owner or owners representatives) entering the work area of the contents of this plan and ensuring that each person signs the safety plan acknowledging the on-site hazards and procedures required to minimize exposure to adverse effects of these hazards. A copy of the Acknowledgement Form is included in **Appendix A**.

Site conditions may warrant an amendment to the HASP. Amendments to the HASP are acknowledged by completing forms included in **Appendix B**.

1.4 Key Personnel - Roles and Responsibilities

Personnel responsible for implementing this Construction Health and Safety Plan are:

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Name	Title	Address	Contact Numbers
Mr. Kevin Brussee	EBC Project Manager	1808 Middle Country Road Ridge, NY 11961	(631) 504-6000 Cell (631) 338-1749
Mr. Kevin Waters	EBC Site Safety Officer	1808 Middle Country Road Ridge, NY 11961	(631) 504-6000

The project manager is responsible for overall project administration and, with guidance from the site safety officer, for supervising the implementation of this CHASP. The site safety officer will conduct daily (tail gate or tool box) safety meetings at the project site and oversee daily safety issues. Each subcontractor and supplier (defined as an OSHA employer) is also responsible for the health and safety of its employees. If there is any dispute about health and safety or project activities, on-site personnel will attempt to resolve the issue. If the issue cannot be resolved at the site, then the project manager will be consulted.

The site safety officer is also responsible for coordinating health and safety activities related to hazardous material exposure on-site. The site safety officer is responsible for the following:

1. Educating personnel about information in this CHASP and other safety requirements to be observed during site operations, including, but not limited to, decontamination procedures, designation of work zones and levels of protection, air monitoring, fit testing, and emergency procedures dealing with fire and first aid.

2. Coordinating site safety decisions with the project manager.

3. Designating exclusion, decontamination and support zones on a daily basis.

4. Monitoring the condition and status of known on-site hazards and maintaining and implementing the air quality monitoring program specified in this CHASP.

5. Maintaining the work zone entry/exit log and site entry/exit log.

6. Maintaining records of safety problems, corrective measures and documentation of chemical exposures or physical injuries (the site safety officer will document these conditions in a bound notebook and maintain a copy of the notebook on-site).

The person who observes safety concerns and potential hazards that have not been addressed in the daily safety meetings should immediately report their observations/concerns to the site safety officer or appropriate key personnel.

2.0 SITE BACKGROUND AND SCOPE OF WORK

The Site is located at 818 Lexington Avenue in the Stuyvesant Heights section of Brooklyn, New York, and is currently identified as Block 1628, Lot 21 on the New York City Tax Map. Lot 21 is a rectangular shaped lot consisting of 78 feet of street frontage on Lexington Avenue and a depth of approximately 100 feet for a total of approximately 7,800 ft^2. The Site is located on the south side of Lexington Avenue between Patchen Avenue and Ralph Avenue and is bordered by Lexington Avenue to the north, a thin vacant lot to the west (812 Lexington Avenue), the Jacquelyn Hernandez Adult Day Health Center facility to the east (822 Lexington Avenue), and multiple 2 and 3-story walk-ups (793-803 Quincy Street) to the south.

The Site currently is vacant and undeveloped, with the exception of a 2 foot thick concrete slab approximately 50 ft by 68 feet wide located approximately 5' below sidewalk grade for a foundation that was being constructed in 2012 as part of a new commercial building. The building was not finished and construction was terminated. The remainder of the Site outside of the concrete slab consists of exposed soil. A soil stockpile is located behind the foundation in the rear of the lot.

2.1 Prior Investigations

2.1.1 Site History Reviewt

Historic Sanborn maps were reviewed to identify the historic uses of the Site. Prior to 1888, the Site consisted of three separate undeveloped lots. By 1908, the Site was merged into two lots with a one-story wagon house and a small barn constructed on each lot. By 1932, the Site was redeveloped with a one-story garage building and a two-story building utilized as a printing operation. The 1951 through 1978 Sanborn maps show the two buildings as being part of Sunshine Quaker Laundry Service, Inc. The former garage building on the eastern side of the Site is labeled as the washing and shipping rooms while the former printing building on the western side of the Site is labeled as laundry supplies on the first floor, and offices on the second floor. All Sanborn maps after 1978 show both 814-816, and 818 Lexington Avenue as vacant and undeveloped.

2.1.4 Remedial Investigation Report

Allan Lebovits PC performed the following scope of work:

1. Conducted a Site inspection to identify AOCs and physical obstructions (i.e. structures, buildings, etc.);
2. Installed five soil borings across the Site, and collected 13 soil samples and one duplicate soil sample for chemical analysis from the soil borings to evaluate soil quality; and
3. Installed 3 groundwater monitoring wells throughout the Site to establish groundwater flow and collected 3 groundwater samples and one duplicate groundwater sample for chemical analysis to evaluate groundwater quality; and
4. Installed four soil gas implants and collected four soil gas samples for chemical analysis.

Soil Sampling Results

Soil/fill samples results were compared to NYSDEC Unrestricted Use Soil Cleanup Objectives and Restricted Residential Soil Cleanup Objectives as presented in 6NYCRR Part 375-6.8 and CP51. Soil/fill samples detected no PCBs in any of the soil samples. Trace concentrations of the VOCs acetone, 1,2,4-trimethylbenzene, naphthalene, and methylene chloride were noted but

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none above Unrestricted Use SCOs. Six SVOCs consisting of the polycyclic aromatic hydrocarbons (PAHs), benz(a)anthracene (max. of 28,000 µg/kg), benzo(a)pyrene (max. of 23,000 µg/kg), benzo(b)fluoranthene (max. of 30,000 µg/kg), benzo(k)fluoranthene (max. of 10,000 µg/kg), chrysene (max. of 26,000 µg/kg), and indeno(1,2,3-cd)pyrene (max. of 9,000 µg/kg), were found within all shallow samples exceeding Restricted Residential Use SCOs. The pesticides 4,4'-DDE (max. of 22 µg/kg), 4,4'-DDT (max. of 180 µg/kg) and dieldrin (max. of 170 µg/kg) were found in all shallow samples exceeding Unrestricted Use SCOs. Several metals including chromium (max. of 109 mg/kg), copper (max. of 290 mg/kg), lead (max. of 891 mg/kg), mercury (max. of 0.89 mg/kg), nickel (max. of 169 mg/kg) and zinc (max. of 331 mg/kg) exceeded Unrestricted Use SCOs. Of these metals, lead, copper, and mercury also exceeded Restricted Residential Use SCOs. Overall, the soil results were consistent with data identified at sites with historic fill material in NYC.

Groundwater Sampling Results

Groundwater samples results were compared to New York State 6NYCRR Part 703.5 Class GA groundwater quality standards (GQS). Groundwater samples showed no SVOCs, PCBs or pesticides at detectable concentrations in any sample. Four VOCs including cis-1,2-dichloroethene (max. of 22 µg/L), methyl t-butyl ether (max. of 29 µg/L), tetrachloroethene (max. of 7 µg/L), and trichloroethene (max. of 6.8 µg/L) exceeded their respective GQS. Two metals, manganese (max. of 21.8 mg/L) and sodium (max. of 87.4 mg/L) (dissolved) exceeded their respective GQS in all three samples. Based on the Site history, the lack of chlorinated VOCs in on-Site soil, and the known source of contamination coming from the NYS Brownfield Cleanup Program Site across Lexington Avenue, an on-Site source of groundwater contamination is not suspected.

Soil Gas Sampling Results

Soil vapor results collected during the RI were compared to the compounds listed in Vapor Intrusion Matrices in the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion, dated October 2006. Total concentrations of petroleum-related VOCs (BTEX) ranged from 13.18 µg/m^3 to 71.52 µg/m^3. Chlorinated VOCs including 1,1,1-trichloroethane (TCA) detected at 1.14 µg/m^3, carbon tetrachloride detected between 0.503 µg/m^3 and 1.07 µg/m^3, and tetrachloroethene (PCE) detected between 1.36 and 38.1 µg/m^3 were all at concentrations below guidance matrix established by NYSDOH. However, trichloroethene (TCE) was detected within the monitoring/mitigation range at 32.3 µg/m^3. Other compounds including acetone (6,150 µg/m^3) and propylene (2,220 µg/m^3) were also detected at high concentrations.

2.2 Redevelopment Plans

The proposed future use of the Site will consist of a 6-story apartment building with a full cellar. A cellar level parking area will be constructed behind the building which will be accessed by a ramp along the west side of the building. The cellar will be used for water, electric, trash compactor, and bicycle storage rooms, as well as accessory space for the apartments above. The residential lobby will be at ground level, but the first floor will be approximately 5 feet above sidewalk grade.

The top of the existing foundation slab is approximately 5 feet below grade, and the rear and front of the Site will be excavated to approximately 7 feet below sidewalk grade to add additional foundation to meet the same height. Excavation ranging from 1 to 7 feet below

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sidewalk grade will be performed along the west side of the existing foundation to create a ramp to the rear cellar level parking area. The entire Site will be capped with the concrete ramp and the concrete building foundation. An estimated 200 cubic yards will be excavated to construct the concrete slab around the existing foundation slab.

2.3 Description of Remedial Action Plan

Site activities included within the Remedial Action Plan that are included within the scope of this HASP include the following:

The proposed remedial action will consist of:

1. Preparation of a Community Protection Statement and performance of all required NYC VCP Citizen Participation activities according to an approved Citizen Participation Plan.
2. Performance of a Community Air Monitoring Program for particulates and volatile organic carbon compounds.
3. Establishment of Site-Specific (Track 4) Soil Cleanup Objectives (SCOs).
4. Site mobilization involving Site security setup, equipment mobilization, utility mark outs and marking & staking excavation areas.
5. Installation and sampling of one groundwater well prior to start construction.
6. Excavation and removal of soil/fill exceeding Track 4 Site-Specific SCOs. For development purposes, the area of the Site outside of the footprint of the existing foundation will be excavated to depths of 1 to 7 feet for the new building's cellar level. Approximately 750 tons of soil will be removed.
7. Screening of excavated soil/fill during intrusive work for indications of contamination by visual means, odor, and monitoring with a PID. Appropriate segregation of excavated media on-Site.
8. Transportation and off-Site disposal of all soil/fill material at permitted facilities in accordance with applicable laws and regulations for handling, transport, and disposal, and this plan. Sampling and analysis of excavated media as required by disposal facilities. Appropriate segregation of excavated media on-Site.
9. Collection and analysis of end-point samples to determine the performance of the remedy with respect to attainment of SCOs.
10. Import of materials to be used for backfill and cover in compliance with this plan and in accordance with applicable laws and regulations.
11. Installation of a vapor barrier system below the concrete slab of the building to be constructed behind and along side the existing concrete foundation slab as well as behind foundation walls of the proposed building. The vapor barrier will consist of Raven Industries' VaporBlock 20 Plus, which is a seven layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins;
12. Installation of an active Sub-Slab Depressurization System (SSDS) below the concrete slab to be constructed behind and along the side of the existing foundation slab.
13. Construction and maintenance of foundation slab, 24 inch thick concrete foundation slab to be constructed behind and along side the existing foundation slab, and the 6 inch thick concrete vehicle ramp to be constructed along the side of the building to prevent human exposure to residual soil/fill remaining under the Site.
14. Implementation of storm-water pollution prevention measures in compliance with applicable laws and regulations.
15. Performance of all activities required for the remedial action, including permitting requirements and pretreatment requirements, in compliance with applicable laws and

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regulations.

16. Submission of a Remedial Action Report (RAR) that describes the remedial activities, certifies that the remedial requirements have been achieved, defines the Site boundaries, and describes all Engineering and Institutional Controls to be implemented at the Site, and lists any changes from this RAWP.
17. Submission of an approved Site Management Plan (SMP) in the RAR for long-term management of residual contamination, including plans for operation, maintenance, monitoring, inspection and certification of Engineering and Institutional Controls and reporting at a specified frequency.
18. The property will continue to be registered with an E-Designation by the NYC Buildings Department. Establishment of Engineering Controls and Institutional Controls in this RAWP and a requirement that management of these controls must be in compliance with an approved SMP. Institutional Controls will include prohibition of the following: (1) vegetable gardening and farming; (2) use of groundwater without treatment rendering it safe for the intended use; (3) disturbance of residual contaminated material unless it is conducted in accordance with the SMP; and (4) higher level of land usage without OER-approval.

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3.0 HAZARD ASSESSMENT

This section identifies the hazards associated with the proposed scope of work, general physical hazards that can be expected at most sites; and presents a summary of documented or potential chemical hazards at the site. Every effort must be made to reduce or eliminate these hazards. Those that cannot be eliminated must be guarded against using engineering controls and/or personal protective equipment.

3.1 Physical Hazards

3.1.1 Tripping Hazards

An area of risk associated with on-site activities are presented by uneven ground, concrete, curbstones or equipment which may be present at the site thereby creating a potential tripping hazard. During intrusive work, care should be taken to mark or remove any obstacles within the exclusion zone.

3.1.2 Climbing Hazards

During site activities, workers may have to work on excavating equipment by climbing. The excavating contractor will conform with any applicable NIOSH and OSHA requirements or climbing activities.

3.1.3 Cuts and Lacerations

Field activities that involve excavating activities usually involve contact with various types of machinery. A first aid kit approved by the American Red Cross will be available during all intrusive activities.

3.1.4 Lifting Hazards

Improper lifting by workers is one of the leading causes of industrial injuries. Field workers in the excavation program may be required to lift heavy objects. Therefore, all members of the field crew should be trained in the proper methods of lifting heavy objects. All workers should be cautioned against lifting objects too heavy for one person.

3.1.5 Utility Hazards

Before conducting any excavation, the excavation contractor will be responsible for locating and verifying all existing utilities at each excavation.

3.1.6 Traffic Hazards

All traffic, vehicular and pedestrian, shall be maintained and protected at all times consistent with local, state and federal agency regulations regarding such traffic and in accordance with NYCDOT guidelines. The excavation contractor shall carry on his operations without undue interference or delays to traffic. The excavation contractor shall furnish all labor, materials, guards, barricades, signs, lights, and anything else necessary to maintain traffic and to protect his work and the public, during operations.

3.2 Work in Extreme Temperatures

Work under extremely hot or cold weather conditions requires special protocols to minimize the chance that employees will be affected by heat or cold stress.

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3.2.1 Heat Stress

The combination of high ambient temperature, high humidity, physical exertion, and personal protective apparel, which limits the dissipation of body heat and moisture, can cause heat stress.

The following prevention, recognition and treatment strategies will be implemented to protect personnel from heat stress. Personnel will be trained to recognize the symptoms of heat stress and to apply the appropriate treatment.

1. Prevention
    a. Provide plenty of fluids. Available in the support zone will be a 50% solution of fruit punch and water or plain water.
    b. Work in Pairs. Individuals should avoid undertaking any activity alone.
    c. Provide cooling devices. A spray hose and a source of water will be provided to reduce body temperature, cool protective clothing and/or act as a quick-drench shower in case of an exposure incident.
    d. Adjustment of the work schedule. As is practical, the most labor-intensive tasks should be carried out during the coolest part of the day.

2. Recognition and Treatment
    a Heat Rash (or prickly heat):
        Cause: Continuous exposure to hot and humid air, aggravated by chafing clothing.
        Symptoms: Eruption of red pimples around sweat ducts accompanied by intense itching and tingling.
        Treatment: Remove source or irritation and cool skin with water or wet cloths.

    b. Heat Cramps (or heat prostration)
        Cause: Profuse perspiration accompanied by inadequate replenishment of body water and electrolytes.
        Symptoms: Muscular weakness, staggering gait, nausea, dizziness, shallow breathing, pale and clammy skin, approximately normal body temperature.
        Treatment: Perform the following while making arrangement for transport to a medical facility. Remove the worker to a contamination reduction zone. Remove protective clothing. Lie worker down on back in a cool place and raise feet 6 to 12 inches. Keep warm, but loosen all clothing. If conscious, provide sips of salt-water solution, using one teaspoon of salt in 12 ounces of water. Transport to a medical facility.
    c. Heat Stroke
        Cause: Same as heat exhaustion. This is also an extremely serious condition.
        Symptoms: Dry hot skin, dry mouth, dizziness, nausea, headache, rapid pulse.
        Treatment: Cool worker immediately by immersing or spraying with cool water or sponge bare skin after removing protective clothing. Transport to hospital.

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3.2.2 Cold Exposure

Exposure to cold weather, wet conditions and extreme wind-chill factors may result in excessive loss of body heat (hypothermia) and /or frostbite. To guard against cold exposure and to prevent cold injuries, appropriate warm clothing should be worn, warm shelter must be readily available, rest periods should be adjusted as needed, and the physical conditions of on-site field personnel should be closely monitored. Personnel and supervisors working on-site will be made aware of the signs and symptoms of frost bite and hypothermia such as shivering, reduced blood pressure, reduced coordination, drowsiness, impaired judgment, fatigue, pupils dilated but reactive to light and numbing of the toes and fingers.

3.3 Chemical Hazards

Soil collected from the site as part of several subsurface investigations performed at the site have revealed elevated levels of SVOCs, metals and pesticides in historic fill at the Site.

Semi-Volatile organic compounds reported to be present at elevated concentrations in historic fill materials at the Site include the following:

Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene
Chrysene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene

Metals reported to be present at elevated concentrations in historic fill materials at the Site include the following:

Chromium	Copper	Mercury	Lead	Nickel	Zinc

Pesticides reported to be present at elevated concentrations in historic fill materials at the Site include the following:

4,4'-DDE	4,4'-DDT	Dieldrin

The primary routes of exposure to identified contaminants in soil to on-site construction workers are through inhalation, ingestion and absorption.

Appendix C includes information sheets for all detected chemicals that may be encountered at the site.

3.3.1 Respirable Dust

Dust may be generated from vehicular traffic and/or excavation activities. If visible observation detects elevated levels of dust, a program of wetting will be employed by the site safety officer. If elevated dust levels persist, the site safety office will employ dust monitoring using a particulate monitor (Miniram or equivalent). If monitoring detects concentrations greater than 150 µg/m3 over daily background, the site safety officer will take corrective actions as defined herein, including the use of water for dust suppression and if this is not effective, requiring workers to wear APRs with efficiency particulate air (HEPA) cartridges.

Absorption pathways for dust and direct contact with soils or groundwater will be mitigated with the implementation of latex gloves, hand washing and decontamination exercises when necessary.

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3.3.2 Dust Control and Monitoring During Earthwork

Dust generated during excavation activities or other earthwork may contain contaminants identified in soils at the site. Dust will be controlled by wetting the working surface with water. Calcium chloride may be used if the problem cannot be controlled with water. Air monitoring and dust control techniques are specified in a site specific Dust Control Plan (if applicable). Site workers will not be required to wear APR's unless dust concentrations are consistently over 150 $\mu g/m^3$ over site-specific background in the breathing zone as measured by a dust monitor unless the site safety officer directs workers to wear APRs. The site safety officer will use visible dust as an indicator to implement the dust control plan.

3.3.3 Organic Vapors

Although no VOCs were detected within any of the soil samples collected at the Site, the site safety officer will periodically monitor organic vapors with a Photo-ionization Detector (PID) during excavation activities to determine whether organic vapor concentrations exceed action levels shown in Section 5 and/or the Community Air Monitoring Plan.

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4.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) shall be selected in accordance with the site air monitoring program, OSHA 29 CFR 1910.120(c), (g), and 1910.132. Protective equipment shall be NIOSH approved and respiratory protection shall conform to OSHA 29 CFR Part 1910.133 and 1910.134 specifications; head protection shall conform to 1910.135; eye and face protection shall conform to 1910.133; and foot protection shall conform to 1910.136. The only true difference among the levels of protection from D thru B is the addition of the type of respiratory protection. **It is anticipated that work will be performed in Level D PPE.**

4.1 Level D

Level D PPE shall be donned when the atmosphere contains no known hazards and work functions preclude splashes, immersion, or the potential for inhalation of, or contact with, hazardous concentrations of harmful chemicals. Level D PPE consists of:

- standard work clothes, coveralls, or tyvek, as needed;
- steel toe and steel shank work boots;
- hard hat;
- gloves, as needed;
- safety glasses;
- hearing protection;
- equipment replacements are available as needed.

4.2 Level C

Level C PPE shall be donned when sustained concentrations of measured total organic vapors in the breathing zone exceed background concentrations (using a portable OVA, or equivalent), by more than 5 ppm. The specifications on the APR filters used must be appropriate for contaminants identified or expected to be encountered. Level C PPE shall be donned when the identified contaminants have adequate warning properties and criteria for using APR have been met. Level C PPE consists of:

- chemical resistant or coated tyvek coveralls;
- steel-toe and steel-shank workboots;
- chemical resistant overboots or disposable boot covers;
- disposable inner gloves (surgical gloves);
- disposable outer gloves;
- full face APR fitted with organic vapor/dust and mist filters or filters appropriate for the identified or expected contaminants;
- hard hat;
- splash shield, as needed; and,
- ankles/wrists taped with duct tape.

The site safety officer will verify if Level C is appropriate by checking organic vapor concentrations using compound and/or class-specific detector tubes.

The exact PPE ensemble is decided on a site-by-site basis by the Site Safety Officer with the intent to provide the most protective and efficient worker PPE.

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4.3 Activity-Specific Levels of Personal Protection

The required level of PPE is activity-specific and is based on air monitoring results (Section 4.0) and properties of identified or expected contaminants. **It is expected that site work will be performed in Level D.** If air monitoring results indicate the necessity to upgrade the level of protection, engineering controls (i.e. Facing equipment away from the wind and placing site personnel upwind of excavations, active venting, etc.) will be implemented before requiring the use of respiratory protection.

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5.0 AIR MONITORING AND ACTION LEVELS

29 CFR 1910.120(h) specifies that monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices and personal protective equipment so that employees are not exposed to levels which exceed permissible exposure limits, or published exposure levels if there are no permissible exposure limits, for hazardous substances.

5.1 Air Monitoring Requirements

If excavation work is performed, air will be monitored for VOCs with a portable ION Science 3000EX photoionization detector, or the equivalent. If necessary, Lower Explosive Limit (LEL) and oxygen will be monitored with a Combustible Gas Indicator (CGI). If appropriate, fugitive dust will be monitored using a MiniRam Model PDM-3 aerosol monitor. Air will be monitored when any of the following conditions apply:

- initial site entry;
- during any work where a potential IDLH condition or flammable atmosphere could develop;
- excavation work begins on another portion of the site;
- contaminants, other than those previously identified, have been discovered;
- each time a different task or activity is initiated;
- during trenching and/or excavation work.

The designated site safety officer will record air monitoring data and ensure that air monitoring instruments are calibrated and maintained in accordance with manufacturer's specifications. Instruments will be zeroed daily and checked for accuracy. Monitoring results will be recorded in a field notebook and will be transferred to instrument reading logs.

5.2 Work Stoppage Responses

The following responses will be initiated whenever one or more of the action levels necessitating a work stoppage are exceeded:

1 The SSO will be consulted immediately
2 All personnel (except as necessary for continued monitoring and contaminant migration, if applicable) will be cleared from the work area (eg from the exclusion zone).
3 Monitoring will be continued until intrusive work resumes.

5.3 Action Levels During Excavation Activities

Instrument readings will be taken in the breathing zone above the excavation pit unless otherwise noted. Each action level is independent of all other action levels in determining responses.

Organic Vapors (PID)	LEL %	Responses
0-1 ppm above background	0%	• Continue excavating • Level D protection • Continue monitoring every 10 minutes
1-5 ppm Above Background, Sustained Reading	1-10%	• Continue excavating • Go to Level C protection or employ

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		engineering controls • Continue monitoring every 10 minutes
5-25 ppm Above Background, Sustained Reading	10-20%	• Discontinue excavating, unless PID is only action level exceeded. • Level C protection or employ engineering controls • Continue monitoring for organic vapors 200 ft downwind • Continuous monitoring for LEL at excavation pit
>25 ppm Above Background, Sustained Reading	>20%	• Discontinue excavating • Withdraw from area, shut off all engine ignition sources. • Allow pit to vent • Continuous monitoring for organic vapors 200 ft downwind.

Notes: Air monitoring will occur in the breathing zone 30 inches above the excavation pit. Readings may also be taken in the excavation pit but will not be used for action levels.

If action levels for any one of the monitoring parameters are exceeded, the appropriate responses listed in the right hand column should be taken. If instrument readings do not return to acceptable levels after the excavation pit has been vented for a period of greater than one-half hour, a decision will then be made whether or not to seal the pit with suppressant foam.

If, during excavation activities, downwind monitoring PID readings are greater than 5 ppm above background for more than one-half hour, excavation will stop until sustained levels are less then 5 ppm (see Community Air Monitoring Plan).

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6.0 SITE CONTROL

6.1 Work Zones

The primary purpose of site controls is to establish the perimeter of a hazardous area, to reduce the migration of contaminants into clean areas, and to prevent access or exposure to hazardous materials by unauthorized persons. When operations are to take place involving hazardous materials, the site safety officer will establish an exclusion zone, a decontamination zone, and a support zone. These zones "float" (move around the site) depending on the tasks being performed on any given day. The site safety officer will outline these locations before work begins and when zones change. The site safety officer records this information in the site log book.

Due to the dimensions of the Site and the work area, it is expected that an exclusion zone will include the entire fenced area with the exception of the construction entrance area, which will serve as the decontamination zone. A support zone if needed will be located outside of the fenced area. All onsite workers during excavation of historic fill materials must provide evidence of OSHA 24 or 40-hour Hazardous Waste Operations and Emergency Response Operations training to conduct work within the exclusion zone established by the site safety officer. The exclusion zone is defined by the site safety officer but will typically be a 50-foot area around work activities. Gross decontamination (as determined by the site Health and Safety Officer) is conducted in the exclusion zone; all other decontamination is performed in the decontamination zone or trailer, if provided.

Protective equipment is removed in the decontamination zone. Disposable protective equipment is stored in receptacles staged in the decontamination zone, and non-disposable equipment is decontaminated. All personnel and equipment exit the exclusion zone through the decontamination zone. If a decontamination trailer is provided the first aid equipment, an eye wash unit, and drinking water are kept in the decontamination trailer.

The support zone is used for vehicle parking, daily safety meetings, and supply storage. Eating, drinking, and smoking are permitted only in the support zone. When a decontamination trailer is not provided, the eye wash unit, first aid equipment, and drinking water are kept at a central location designated by the site safety officer.

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7.0 CONTINGENCY PLAN/EMERGENCY RESPONSE PLAN

Site personnel must be prepared in the event of an emergency. Emergencies can take many forms: illnesses, injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather.

Emergency telephone numbers and a map to the hospital will be posted in the command post. Site personnel should be familiar with the emergency procedures, and the locations of site safety, first aid, and communication equipment.

7.1 Emergency Equipment On-site

Private telephones:	Site personnel.
Two-way radios:	Site personnel where necessary.
Emergency Alarms:	On-site vehicle horns*.
First aid kits:	On-site, in vehicles or office.
Fire extinguisher:	On-site, in office or on equipment.

* Horns: Air horns will be supplied to personnel at the discretion of the project superintendent or site safety officer.

7.2 Emergency Telephone Numbers

General Emergencies	911
Suffolk County Police	911
NYC Fire Department	911
Woodhull Medical Center	(718) 250-8000
NYSDEC Spills Hotline	1-800-457-7362
NYSDEC Project Manager	(718) 963-8000
NYC Department of Health	(212) 676-2400
National Response Center	1-800-424-8802
Poison Control	1-800-222-1222
Project Manager	1-631-504-6000
Site Safety Officer	1-631-504-6000

7.3 Personnel Responsibilities During an Emergency

The project manager is primarily responsible for responding to and correcting any emergency situations. However, in the absence of the project manager, the site safety officer shall act as the project manager's on-site designee and perform the following tasks:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, evacuate and secure the site, or upgrade/downgrade the level of protective clothing and respiratory protection;

- Ensure that appropriate federal, state, and local agencies are informed and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. If toxic materials are released to the air, the local authorities should be informed in order to assess the need for evacuation;

- Ensure appropriate decontamination, treatment, or testing for exposed or injured

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Fax 631.924.2870

personnel;

- Determine the cause of incidents and make recommendations to prevent recurrence; and,

- Ensure that all required reports have been prepared.

The following key personnel are planned for this project:

- Project Manager — Mr. Kevin Brussee (631) 504-6000
- Site Safety Officer — Mr. Kevin Waters (631) 504-6000

7.4 Medical Emergencies

A person who becomes ill or injured in the exclusion zone will be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination will be completed and first aid administered prior to transport. First aid will be administered while waiting for an ambulance or paramedics. A Field Accident Report (**Appendix D**) must be filled out for any injury.

A person transporting an injured/exposed person to a clinic or hospital for treatment will take the directions to the hospital (**Appendix D**).and information on the chemical(s) to which they may have been exposed (**Appendix C**).

7.5 Fire or Explosion

In the event of a fire or explosion, the local fire department will be summoned immediately. The site safety officer or his designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on-site. If it is safe to do so, site personnel may:

- use fire fighting equipment available on site; or,
- remove or isolate flammable or other hazardous materials that may contribute to the fire.

7.6 Evacuation Routes

Evacuation routes established by work area locations for each site will be reviewed prior to commencing site operations. As the work areas change, the evacuation routes will be altered accordingly, and the new route will be reviewed.

Under extreme emergency conditions, evacuation is to be immediate without regard for equipment. The evacuation signal will be a continuous blast of a vehicle horn, if possible, and/or by verbal/radio communication. When evacuating the site, personnel will follow these instructions:

- Keep upwind of smoke, vapors, or spill location.
- Exit through the decontamination corridor if possible.
- If evacuation through the decontamination corridor is not possible, personnel should remove contaminated clothing once they are in a safe location and leave it near the exclusion zone or in a safe place.
- The site safety officer will conduct a head count to ensure that all personnel have been

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evacuated safely. The head count will be correlated to the site and/or exclusion zone entry/exit log.

- If emergency site evacuation is necessary, all personnel are to escape the emergency situation and decontaminate to the maximum extent practical.

7.7 Spill Control Procedures

Spills associated with site activities may be attributed to project equipment and include gasoline, diesel and hydraulic oil. In the event of a leak or a release, site personnel will inform their supervisor immediately, locate the source of spillage and stop the flow if it can be done safely. A spill containment kit including absorbent pads, booms and/or granulated speedy dry absorbent material will be available to site personnel to facilitate the immediate recovery of the spilled material. Daily inspections of site equipment components including hydraulic lines, fuel tanks, etc. will be performed by their respective operators as a preventative measure for equipment leaks and to ensure equipment soundness. In the event of a spill, site personnel will immediately notify the NYSDEC (1-800-457-7362), and a spill number will be generated.

7.8 Vapor Release Plan

If work zone organic vapor (excluding methane) exceeds 5 ppm, then a downwind reading will be made either 200 feet from the work zone or at the property line, whichever is closer. If readings at this location exceed 5 ppm over background, the work will be stopped.

If 5 ppm of VOCs are recorded over background on a PID at the property line, then an off-site reading will be taken within 20 feet of the nearest residential or commercial property, whichever is closer. If efforts to mitigate the emission source are unsuccessful for 30 minutes, then the designated site safety officer will:

- contact the local police;
- continue to monitor air every 30 minutes, 20 feet from the closest off-site property. If two successive readings are below 5 ppm (non-methane), off-site air monitoring will be halted.
- All property line and off site air monitoring locations and results associated with vapor releases will be recorded in the site safety log book.

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APPENDIX A

SITE SAFETY ACKNOWLEDGEMENT FORM

DAILY BREIFING SIGN-IN SHEET

Date:_____ Person Conducting Briefing:_____

Project Name and Location:_____

1. AWARENESS (topics discussed, special safety concerns, recent incidents, etc…):

_____

_____

_____

_____

2. OTHER ISSUES (HASP changes, attendee comments, etc…):

_____

_____

_____

3. ATTENDEES (Print Name):

1.	11.
2.	12.
3.	13.
4.	14.
5.	15.
6.	16.
7.	17.
8.	18.
9.	19.
10.	20.

APPENDIX B

SITE SAFETY PLAN AMENDMENTS

SITE SAFETY PLAN AMENDMENT FORM

Site Safety Plan Amendment #: _____

Site Name: _____

Reason for Amendment: _____

_____

_____

_____

Alternative Procedures: _____

_____

_____

_____

Required Changes in PPE: _____

_____

_____

_____

_____ _____

Project Superintendent (signature) **Date**

_____ _____

Health and Safety Consultant (signature) **Date**

_____ _____

Site Safety Officer (signature) **Date**

APPENDIX C

CHEMICAL HAZARDS

CHEMICAL HAZARDS

The attached International Chemical Safety Cards are provided for contaminants of concern that have been identified in soils and/or groundwater at the site.

International Chemical Safety Cards

BENZ(a)ANTHRACENE

ICSC: 0385

1,2-Benzoanthracene
Benzo(a)anthracene
2,3-Benzphenanthrene
Naphthanthracene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 0385
CAS # 56-55-3
RTECS # CV9275000
EC # 601-033-00-9
October 23, 1995 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.		Water spray, powder. In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles face shield or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus.	Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0385

International Chemical Safety Cards

BENZ(a)ANTHRACENE

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO YELLOW BROWN FLUORESCENT FLAKES OR POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A2 (suspected human carcinogen); (ACGIH 2004).
MAK:
Carcinogen category: 2 (as pyrolysis product of organic materials)
(DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is probably carcinogenic to humans.

PHYSICAL PROPERTIES

Sublimation point: 435°C
Melting point: 162°C
Relative density (water = 1): 1.274
Solubility in water:
none

Vapour pressure, Pa at 20°C: 292
Octanol/water partition coefficient as log Pow: 5.61

ENVIRONMENTAL DATA

Bioaccumulation of this chemical may occur in seafood.

N O T E S

This substance is one of many polycyclic aromatic hydrocarbons - standards are usually established for them as mixtures, e.g., coal tar pitch volatiles. However, it may be encountered as a laboratory chemical in its pure form. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken. Do NOT take working clothes home. Tetraphene is a common name. Card has been partly updated in October 2005 and August 2006: see sections Occupational Exposure Limits, EU classification.

ADDITIONAL INFORMATION

ICSC: 0385 **BENZ(a)ANTHRACENE**

BENZO(a)PYRENE

ICSC: 0104

Benz(a)pyrene
3,4-Benzopyrene
Benzo(d,e,f)chrysene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0104
CAS # 50-32-8
RTECS # DJ3675000
EC # 601-032-00-3
October 17, 2005 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray, foam, powder, carbon dioxide.
EXPLOSION			
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN	MAY BE ABSORBED!	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area! Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants.	T symbol N symbol R: 45-46-60-61-43-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0104

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

BENZO(a)PYRENE

ICSC: 0104

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
PALE-YELLOW CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Reacts with strong oxidants causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: Exposure by all routes should be carefully controlled to levels as low as possible A2 (suspected human carcinogen); (ACGIH 2005).
MAK:
Carcinogen category: 2; Germ cell mutagen group: 2; (DFG 2005).

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is carcinogenic to humans. May cause heritable genetic damage to human germ cells. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 496°C
Melting point: 178.1°C
Density: 1.4
g/cm³

Solubility in water: none (<0.1 g/100 ml)
Vapour pressure :
negligible
Octanol/water partition coefficient as log Pow: 6.04

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish, in plants and in molluscs. The substance may cause long-term effects in the aquatic environment.

N O T E S

Do NOT take working clothes home. Benzo(a)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAHs) in the environment, usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.

ADDITIONAL INFORMATION

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

Benz(e)acephenanthrylene
2,3-Benzofluoroanthene
Benzo(e)fluoranthene
3,4-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0720
CAS # 205-99-2
RTECS # CU1400000
EC # 601-034-00-4
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0720

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(b)FLUORANTHENE

ICSC: 0720

I	**PHYSICAL STATE; APPEARANCE:** COLOURLESS CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation

IMPORTANT DATA	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: A2 (suspected human carcinogen); (ACGIH 2004). MAK: Carcinogen category: 2; (DFG 2004).	of its aerosol and through the skin. **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans. May cause genetic damage in humans.
PHYSICAL PROPERTIES	Boiling point: 481°C Melting point: 168°C Solubility in water: none	Octanol/water partition coefficient as log Pow: 6.12
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. 	

N O T E S

Benzo(b)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(b)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0720 **BENZO(b)FLUORANTHENE**

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

Dibenzo(b,jk)fluorene
8,9-Benzofluoranthene
11,12-Benzofluoranthene
$C_{20}H_{12}$
Molecular mass: 252.3

ICSC # 0721
CAS # 207-08-9
RTECS # DF6350000
EC # 601-036-00-5
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	T symbol N symbol R: 45-50/53 S: 53-45-60-61

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0721

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

BENZO(k)FLUORANTHENE

ICSC: 0721

I **M**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin.

P O R T A N T D A T A	**PHYSICAL DANGERS:** **CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004). **INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 480°C Melting point: 217°C Solubility in water: none Octanol/water partition coefficient as log Pow: 6.84
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in crustacea and in fish. 

N O T E S

Benzo(k)fluoranthene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing benzo(k)fluoranthene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0721 **BENZO(k)FLUORANTHENE**

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

Benzoaphenanthrene
1,2-Benzophenanthrene
1,2,5,6-Dibenzonaphthalene
$C_{18}H_{12}$
Molecular mass: 228.3

ICSC # 1672
CAS # 218-01-9
RTECS # GC0700000
UN # 3077
EC # 601-048-00-0
October 12, 2006 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray. Dry powder. Foam. Carbon dioxide.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety goggles	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Personal protection: P3 filter respirator for toxic particles. Do NOT let this chemical enter the environment. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.	Separated from strong oxidants, Provision to contain effluent from fire extinguishing. Store in an area without drain or sewer access.	T symbol N symbol R: 45-68-50/53 S: 53-45-60-61 UN Hazard Class: 9 UN Packing Group: III Signal: Warning Aqua-Cancer Suspected of causing cancer Very toxic to aquatic life with long lasting effects Very toxic to aquatic life

SEE IMPORTANT INFORMATION ON BACK

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European

International Chemical Safety Cards

CHRYSENE

ICSC: 1672

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS TO BEIGE CRYSTALS OR POWDER

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
The substance decomposes on burning producing toxic fumes Reacts violently with strong oxidants

OCCUPATIONAL EXPOSURE LIMITS:
TLV: A3 (confirmed animal carcinogen with unknown relevance to humans); (ACGIH 2006).
MAK not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
This substance is possibly carcinogenic to humans.

PHYSICAL PROPERTIES

Boiling point: 448°C
Melting point: 254 - 256°C
Density: 1.3 g/cm³

Solubility in water:
very poor
Octanol/water partition coefficient as log Pow: 5.9

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in seafood. It is strongly advised that this substance does not enter the environment.

NOTES

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home. This substance does not usually occur as a pure substance but as a component of polyaromatic hydrocarbon (PAH) mixtures. Human population studies have associated PAH's exposure with cancer and cardiovascular diseases.

Transport Emergency Card: TEC (R)-90GM7-III

ADDITIONAL INFORMATION

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

o-Phenylenepyrene
2,3-Phenylenepyrene
$C_{22}H_{12}$
Molecular mass: 276.3

ICSC # 0730
CAS # 193-39-5
RTECS # NK9300000
March 25, 1999 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE			In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION			
EXPOSURE		AVOID ALL CONTACT!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into covered containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment.	Provision to contain effluent from fire extinguishing. Well closed.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0730

International Chemical Safety Cards

INDENO(1,2,3-cd)PYRENE

ICSC: 0730

I **M** **P**	**PHYSICAL STATE; APPEARANCE:** YELLOW CRYSTALS **PHYSICAL DANGERS:**	**ROUTES OF EXPOSURE:** The substance can be absorbed into the body by inhalation of its aerosol and through the skin. **INHALATION RISK:**

O R T A N T D A T A	**CHEMICAL DANGERS:** Upon heating, toxic fumes are formed. **OCCUPATIONAL EXPOSURE LIMITS:** TLV not established. MAK: Carcinogen category: 2; (DFG 2004).	Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly. **EFFECTS OF SHORT-TERM EXPOSURE:** **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 536°C Melting point: 164°C Solubility in water: none	Octanol/water partition coefficient as log Pow: 6.58
ENVIRONMENTAL DATA	This substance may be hazardous to the environment; special attention should be given to air quality and water quality. Bioaccumulation of this chemical may occur in fish. 	

N O T E S

Indeno(1,2,3-cd)pyrene is present as a component of polycyclic aromatic hydrocarbons (PAH) content in the environment usually resulting from the incomplete combustion or pyrolysis of organic matters, especially fossil fuels and tobacco.ACGIH recommends environment containing Indeno(1,2,3-c,d)pyrene should be evaluated in terms of the TLV-TWA for coal tar pitch volatile, as benzene soluble 0.2 mg/m^3. Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.

ADDITIONAL INFORMATION

ICSC: 0730 **INDENO(1,2,3-cd)PYRENE**

International Chemical Safety Cards

DIELDRIN

ICSC: 0787

1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo-1,4-exo- 5,8-dimethanonaphthalene
3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2ß,2aalpha,3ß,6ß,6aalpha,7ß,7aalpha)-2,73,6-dimethanonaphth(2,3-b)oxirene
HEOD
$C_{12}H_8Cl_6O$
Molecular mass: 380.9

ICSC # 0787
CAS # 60-57-1
RTECS # IO1750000
UN # 2761
EC # 602-049-00-9
March 26, 1998 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: all extinguishing agents allowed.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	
•INHALATION	(See Ingestion).	Ventilation (not if powder).	Fresh air, rest. Refer for medical attention.
•SKIN	MAY BE ABSORBED! See Ingestion.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Safety goggles, or face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Convulsions. Dizziness. Headache. Nausea. Vomiting. Muscle twitching.	Do not eat, drink, or smoke during work. Wash hands before eating.	Give a slurry of activated charcoal in water to drink. Do NOT induce vomiting. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Do NOT wash away into sewer. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. (Extra personal protection: chemical protection suit including self-contained breathing apparatus).	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs and incompatible materials: See Chemical Dangers. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access.	Do not transport with food and feedstuffs. Severe marine pollutant. T+ symbol N symbol R: 25-27-40-48/25-50/53 S: 1/2-22-36/37-45-60-61 UN Hazard Class: 6.1 UN Packing Group: II

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

DIELDRIN

ICSC: 0787

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
COLOURLESS CRYSTALS

PHYSICAL DANGERS:

CHEMICAL DANGERS:
The substance decomposes on heating producing toxic fumes including hydrogen chloride. Reacts with oxidants and acids. Attacks metal due to the slow formation of hydrogen chloride in storage.

OCCUPATIONAL EXPOSURE LIMITS:
TLV (as TWA): 0.25 mg/m³, A4 (skin) (ACGIH 1997).
MAK: (Inhalable fraction) 0.25 mg/m³ :
Peak limitation category: II(8)
skin absorption (H); (DFG 2007).
OSHA PEL: TWA 0.25 mg/m^3 skin
NIOSH REL: Ca TWA 0.25 mg/m^3 skin See Appendix A
NIOSH IDLH: Ca 50 mg/m^3 See: 60571

ROUTES OF EXPOSURE:
The substance can be absorbed into the body through the skin and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance may cause effects on the central nervous system , resulting in convulsions. Medical observation is indicated.

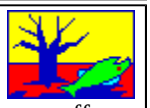
EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance accumulates in the human body. Cumulative effects are possible: see Acute Hazards/Symptoms.

PHYSICAL PROPERTIES

Melting point: 175-176°C
Density: 1.7 g/cm³
Solubility in water: none

Vapour pressure, Pa at 20°C: 0.0004
Octanol/water partition coefficient as log Pow: 6.2

ENVIRONMENTAL DATA



The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment; special attention should be given to honey bees, birds. In the food chain important to humans, bioaccumulation takes place, specifically in aquatic organisms. It is strongly advised not to let the chemical enter into the environment because it persists in the environment. The substance may cause long-term effects in the aquatic environment. Avoid release to the environment in circumstances different to normal use.

NOTES

Depending on the degree of exposure, periodic medical examination is indicated. If the substance is formulated with solvent(s) also consult the card(s) (ICSC) of the solvent(s). Carrier solvents used in commercial formulations may change physical and toxicological properties. Do NOT take working clothes home. Alvit, Dieldrex, Dieldrite, Illoxol, Octalox, Panoram, and Quintox are trade names. Also consult ICSC #0774, Aldrin.

Transport Emergency Card: TEC (R)-61G41b.
Card has been partially updated in August 2007: see Storage, Occupational Exposure Limits.

ADDITIONAL INFORMATION

MSDS : 2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%
CAS : 72-55-9
SYNONYMS : p,p'-DDE ; ethylene,1,1-dichloro-2,2-bis-(p-chlorophenyl)- ; DDT dehydrochloride ; DDE; 1-1'-(Dichloroethenylidene)bis(4-chlorobenzene)

Catalog of Chemical Suppliers, Buyers, Custom Synthesis Companies And Equipment Manufacturers
[2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99% 72-55-9]

Suppliers:

Not Available

Buyers:

Not Available

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
72-55-9	2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene	99	200-784-6

Hazard Symbols: XN
Risk Phrases: 22 33

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW
Harmful if swallowed. Danger of cumulative effects.Cancer suspect agent.Possible risks of irreversible effects.

Potential Health Effects
Eye:
May cause eye irritation.
Skin:
May cause skin irritation.
Ingestion:
May cause irritation of the digestive tract. May be harmful if swallowed. Ingestion of large amounts may cause liver and/or kidney damage.
Inhalation:
May cause respiratory tract irritation.
Chronic:
May cause cancer according to animal studies. Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin:
Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion:
If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation:
Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician:
Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Water runoff can cause environmental damage. Dike and collect water used to fight fire. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire.
Extinguishing Media:
For large fires, use water spray, fog or regular foam. For small fires, use dry chemical, carbon dioxide, water spray or regular foam. Cool containers with flooding quantities of water until well after fire is out.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:
Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Use with adequate ventilation.
Storage:
Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits
CAS# 72-55-9:

Personal Protective Equipment

Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin:
Wear appropriate protective gloves to prevent skin exposure.
Clothing:
Wear appropriate protective clothing to prevent skin exposure.
Respirators:
A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Crystals
Color: white
Odor: None reported.
pH: Not available.
Vapor Pressure: 6.5106 mm Hg @ 20 C
Viscosity: Not available.
Boiling Point: 336 deg C
Freezing/Melting Point: 88.00 - 90.00 deg C
Autoignition Temperature: Not available.
Flash Point: Not available.
Explosion Limits, lower: Not available.
Explosion Limits, upper: Not available.
Decomposition Temperature:
Solubility in water: 0.010 ppm
Specific Gravity/Density:
Molecular Formula: C14H8Cl4
Molecular Weight: 318.02

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, dust generation, strong oxidants.
Incompatibilities with Other Materials:
Strong oxidizing agents - strong bases.
Hazardous Decomposition Products:
Hydrogen chloride, carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 72-55-9: KV9450000
LD50/LC50:
CAS# 72-55-9: Oral, mouse: LD50 = 700 mg/kg; Oral, rat: LD50 = 880 mg/kg.
Carcinogenicity:
2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene -
California: carcinogen, initial date 1/1/89

Other:
See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Estimated BCF value = 8,300 based on water solubility. Estimated Koc value = 8,300. There was no movement of DDE reported in soil column mobility experiments.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.

**** SECTION 14 - TRANSPORT INFORMATION ****

IATA
Not regulated as a hazardous material.
IMO
Not regulated as a hazardous material.
RID/ADR
Not regulated as a hazardous material.
USA RQ: CAS# 72-55-9: 1 lb final RQ; 0.454 kg final RQ

**** SECTION 15 - REGULATORY INFORMATION ****

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN
Risk Phrases:
R 22 Harmful if swallowed.
R 33 Danger of cumulative effects.
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)
CAS# 72-55-9: 3
Canada
None of the chemicals in this product are listed on the DSL/NDSL list.
CAS# 72-55-9 is listed on Canada's Ingredient Disclosure List.
US FEDERAL
TSCA
CAS# 72-55-9 is not listed on the TSCA inventory.
It is for research and development use only.

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 9/28/1998 Revision #3 Date: 3/18/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

4-Cyano-4-Phenylpiperidine Hydrochloride, 99% (TLC)	51304-58-6
Methanesulfonamide	3144-09-0
gamma-Octanoic lactone, 98%	104-50-7
Cis,cis,cis,cis-1,2,3,4-cyclopentane- tetracarboxylic dianhydride,	4802-47-5
Tetrachloroethylene Carbonate, 98+%	22432-68-4
Oxamic Acid, 98%	471-47-6
10,11-Dihydro-5H-Dibenzo(A,D)-Cycloheptene, 98%	833-48-7
Thallium (I) Sulfate, 99.9+%	7446-18-6
N-(2,6-Dimethylphenylcarbamoyl-Methyl)-Iminodiacetic Acid, 99%	59160-29-1
P-(Dimethylamino)cinnamic Acid, 99%	1552-96-1
Biebrich Scarlet, 99% (UV-VIS)	4196-99-0
4-Chlorobenzenediazonium hexafluoro- phosphate	1582-27-0
Ammonium hexachloroiridate(IV), 99.99%	16940-92-4
Methylamine-d2 deuteriochloride, 98+ atom % D	593-51-1
2,2-Bis-(4-chlorophenyl)-1,1-dichloroethylene, 99%	72-55-9
Nitro red	56431-61-9
Methyl 2,3-dichlorobenzoate, 98+%	2905-54-6
Isopropyl Bromoacetate, 98% (GC)	29921-57-1
1-Iodo-4-Nitrobenzene, 99%	636-98-6
4-Ethylcyclohexanol, 99% cis/trans mixture	4534-74-1
Fluorescamine	38183-12-9
Tris(2,2,6,6-Tetramethyl-3,5-Heptanedionato)Dysprosium(III), 99+%	15522-69-7
3-Amino-2,2,5,5-Tetramethyl-1-Pyrrolidinyloxy, 99% (Titr.)	34272-83-8
3,4-Dihydroxyphenylacetic Acid,98%	102-32-9

Material Safety Data Sheet

Version 4.0
Revision Date 03/12/2010
Print Date 12/09/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	4,4'-DDD PESTANAL,250 MG (2,2-BIS(4-CHL&
Product Number	:	35486
Brand	:	Fluka
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301	Toxic if swallowed.
H312	Harmful in contact with skin.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)

P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

HMIS Classification

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	2
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	Harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane
4,4′-DDD
TDE

Formula : $C_{14}H_{10}Cl_4$
Molecular Weight : 320.04 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane			
72-54-8	200-783-0	-	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid

Safety data

pH	no data available
Melting point	94.0 - 96.0 °C (201.2 - 204.8 °F)
Boiling point	193.0 °C (379.4 °F) at 1.3 hPa (1.0 mmHg)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	< 0.00001 hPa (< 0.00001 mmHg) at 25.0 °C (77.0 °F)
Density	1.38 g/cm3
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 6.02

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
no data available

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - Hamster - > 5,000 mg/kg

TDLo Oral - Human - 428.5 mg/kg
Remarks: Endocrine:Adrenal cortex hypoplasia.

TDLo Oral - rat - 6,000 mg/kg
Remarks: Cardiac:Other changes. Gastrointestinal:Other changes. Kidney, Ureter, Bladder:Changes in both tubules and glomeruli.

TDLo Oral - rat - 14 mg/kg
Remarks: Liver:Changes in liver weight. Endocrine:Estrogenic. Musculoskeletal:Other changes.

TDLo Oral - rat - 2,100 mg/kg
Remarks: Behavioral:Altered sleep time (including change in righting reflex).

LD50 Dermal - rabbit - 1,200 mg/kg
Remarks: Behavioral:Excitement. Behavioral:Convulsions or effect on seizure threshold. Skin irritation

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure (GHS)
no data available

Specific target organ toxicity - repeated exposure (GHS)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information
RTECS: KI0700000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - other fish - 1.18 - 9 mg/l - 96.0 h
	LC50 - Lepomis macrochirus (Bluegill) - 0.04 - 0.05 mg/l - 96.0 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.06 - 0.09 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 3.47 - 5.58 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia pulex (Water flea) - 0.01 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
Indication of bioaccumulation.

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Reportable Quantity (RQ): 1 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2811 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)
Marine pollutant: No

IATA
UN-Number: 2811 Class: 6.1 Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane)

15. REGULATORY INFORMATION

OSHA Hazards
Toxic by ingestion, Harmful by skin absorption., Possible carcinogen.

DSL Status
This product contains the following components that are not on the Canadian DSL nor NDSL lists.

	CAS-No.
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. 2,2-bis(4-Chlorophenyl)-1,1-dichloro-ethane	72-54-8	

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

International Chemical Safety Cards

CHROMIUM

ICSC: 0029

Chrome
Cr
Atomic mass: 52.0
(powder)

ICSC # 0029
CAS # 7440-47-3
RTECS # GB4200000
October 27, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible under specific conditions.	No open flames if in powder form.	In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION		Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough.	Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
•EYES	Redness.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Personal protection: P2 filter respirator for harmful particles.		R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0029

International Chemical Safety Cards

CHROMIUM

ICSC: 0029

I

M

P

PHYSICAL STATE; APPEARANCE:
GREY POWDER

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

ROUTES OF EXPOSURE:

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed.

O R T A N T D A T A	**CHEMICAL DANGERS:** Chromium is a catalytic substance and may cause reaction in contact with many organic and inorganic substances , causing fire and explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (as Cr metal, Cr(III) compounds) 0.5 mg/m³ as TWA A4 (ACGIH 2004). MAK not established. OSHA PEL*: TWA 1 mg/m^3 See Appendix C *Note: The PEL also applies to insoluble chromium salts. NIOSH REL: TWA 0.5 mg/m^3 See Appendix C NIOSH IDLH: 250 mg/m^3 (as Cr) See: 7440473 **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation tothe eyesandthe respiratory tract. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:**
PHYSICAL PROPERTIES	Boiling point: 2642°C Melting point: 1900°C Density: 7.15 g/cm³ Solubility in water: none
ENVIRONMENTAL DATA	

N O T E S

The surface of the chromium particles is oxidized to chromium(III)oxide in air. See ICSC 1531 Chromium(III) oxide.

ADDITIONAL INFORMATION

ICSC: 0029 **CHROMIUM**

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

COPPER

ICSC: 0240

Cu
(powder)

ICSC # 0240
CAS # 7440-50-8
RTECS # GL5325000
September 24, 1993 Validated

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Special powder, dry sand, NO other agents.
EXPLOSION			
EXPOSURE		PREVENT DISPERSION OF DUST!	
•INHALATION	Cough. Headache. Shortness of breath. Sore throat.	Local exhaust or breathing protection.	Fresh air, rest. Refer for medical attention.
•SKIN	Redness.	Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES	Redness. Pain.	Safety goggles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers. Carefully collect remainder. Then remove to safe place. (Extra personal protection: P2 filter respirator for harmful particles).	Separated from - See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0240

International Chemical Safety Cards

COPPER

ICSC: 0240

I

M

P

PHYSICAL STATE; APPEARANCE:
RED POWDER, TURNS GREEN ON EXPOSURE TO MOIST AIR.

PHYSICAL DANGERS:

CHEMICAL DANGERS:

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

O **R** **T** **A** **N** **T** **D** **A** **T** **A**	Shock-sensitive compounds are formed with acetylenic compounds, ethylene oxides and azides. Reacts with strong oxidants like chlorates, bromates and iodates, causing explosion hazard. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: 0.2 mg/m³ fume (ACGIH 1992-1993). TLV (as Cu, dusts & mists): 1 mg/m³ (ACGIH 1992-1993). Intended change 0.1 mg/m³ Inhal., A4 (not classifiable as a human carcinogen); MAK: 0.1 mg/m³ (Inhalable fraction) Peak limitation category: II(2) Pregnancy risk group: D (DFG 2005). OSHA PEL*: TWA 1 mg/m^3 *Note: The PEL also applies to other copper compounds (as Cu) except copper fume. NIOSH REL*: TWA 1 mg/m^3 *Note: The REL also applies to other copper compounds (as Cu) except Copper fume. NIOSH IDLH: 100 mg/m^3 (as Cu) See: 7440508	**EFFECTS OF SHORT-TERM EXPOSURE:** Inhalation of fumes may cause metal fume fever. See Notes. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization.
PHYSICAL PROPERTIES	Boiling point: 2595°C Melting point: 1083°C Relative density (water = 1): 8.9	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

The symptoms of metal fume fever do not become manifest until several hours.

ADDITIONAL INFORMATION

ICSC: 0240 **COPPER**

IMPORTANT LEGAL NOTICE:	Neither NIOSH, the CEC or the IPCS nor any person acting on behalf of NIOSH, the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use. The only modifications made to produce the U.S. version is inclusion of the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LEAD

ICSC: 0052

Lead metal
Plumbum
Pb
Atomic mass: 207.2
(powder)

ICSC # 0052
CAS # 7439-92-1
RTECS # OF7525000
October 08, 2002 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE	See EFFECTS OF LONG-TERM OR REPEATED EXPOSURE.	PREVENT DISPERSION OF DUST! AVOID EXPOSURE OF (PREGNANT) WOMEN!	
•INHALATION		Local exhaust or breathing protection.	Fresh air, rest.
•SKIN		Protective gloves.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•EYES		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Give plenty of water to drink. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Do NOT let this chemical enter the environment. Personal protection: P3 filter respirator for toxic particles.	Separated from food and feedstuffs incompatible materials See Chemical Dangers.	R: S:

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0052

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

LEAD

ICSC: 0052

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
BLUISH-WHITE OR SILVERY-GREY SOLID IN VARIOUS FORMS. TURNS TARNISHED ON EXPOSURE TO AIR.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air.

CHEMICAL DANGERS:
On heating, toxic fumes are formed. Reacts with oxidants. Reacts with hot concentrated nitric acid, boiling concentrated hydrochloric acid and sulfuric acid. Attacked by pure water and by weak organic acids in the presence of oxygen.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.05 mg/m³ A3 (confirmed animal carcinogen with unknown relevance to humans); BEI issued (ACGIH 2004).
MAK:
Carcinogen category: 3B; Germ cell mutagen group: 3A; (DFG 2004).
EU OEL: as TWA 0.15 mg/m³ (EU 2002).
OSHA PEL*: 1910.1025 TWA 0.050 mg/m^3 See Appendix C *Note: The PEL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH REL*: TWA 0.050 mg/m^3 See Appendix C
*Note: The REL also applies to other lead compounds (as Pb) -- see Appendix C.
NIOSH IDLH: 100 mg/m^3 (as Pb) See: 7439921

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

EFFECTS OF SHORT-TERM EXPOSURE:

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the blood bone marrow central nervous system peripheral nervous system kidneys , resulting in anaemia, encephalopathy (e.g., convulsions), peripheral nerve disease, abdominal cramps and kidney impairment. Causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES		
	Boiling point: 1740°C	Density: 11.34 g/cm3
	Melting point: 327.5°C	Solubility in water: none

ENVIRONMENTAL DATA	
	Bioaccumulation of this chemical may occur in plants and in mammals. It is strongly advised that this substance does not enter the environment. 

N O T E S

Depending on the degree of exposure, periodic medical examination is suggested. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-51S1872

ADDITIONAL INFORMATION

ICSC: 0052 **LEAD**

International Chemical Safety Cards

MERCURY

ICSC: 0056

Quicksilver
Liquid silver
Hg
Atomic mass: 200.6

ICSC # 0056
CAS # 7439-97-6
RTECS # OV4550000
UN # 2809
EC # 080-001-00-0
April 22, 2004 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.		In case of fire in the surroundings: use appropriate extinguishing media.
EXPLOSION	Risk of fire and explosion.		In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	IN ALL CASES CONSULT A DOCTOR!
•INHALATION	Abdominal pain. Cough. Diarrhoea. Shortness of breath. Vomiting. Fever or elevated body temperature.	Local exhaust or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
•SKIN	MAY BE ABSORBED! Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention.
•EYES		Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•INGESTION		Do not eat, drink, or smoke during work. Wash hands before eating.	Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Evacuate danger area in case of a large spill! Consult an expert! Ventilation. Collect leaking and spilled liquid in sealable non-metallic containers as far as possible. Do NOT wash away into sewer. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs Well closed.	Special material. Do not transport with food and feedstuffs. T symbol N symbol R: 23-33-50/53 S: 1/2-7-45-60-61 UN Hazard Class: 8 UN Packing Group: III

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

MERCURY

ICSC: 0056

IMPORTANT DATA

PHYSICAL STATE; APPEARANCE:
ODOURLESS, HEAVY AND MOBILE SILVERY LIQUID METAL.

PHYSICAL DANGERS:

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. Reacts violently with ammonia and halogens causing fire and explosion hazard. Attacks aluminium and many other metals forming amalgams.

OCCUPATIONAL EXPOSURE LIMITS:
TLV: 0.025 mg/m³ as TWA (skin) A4 BEI issued (ACGIH 2004).
MAK: 0.1 mg/m³ Sh
Peak limitation category: II(8) Carcinogen category: 3B (DFG 2003).
OSHA PEL†: C 0.1 mg/m^3
NIOSH REL: Hg Vapor: TWA 0.05 mg/m^3 skin
Other: C 0.1 mg/m^3 skin
NIOSH IDLH: 10 mg/m^3 (as Hg) See: 7439976

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation of its vapour and through the skin , also as a vapour!

INHALATION RISK:
A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

EFFECTS OF SHORT-TERM EXPOSURE:
The substance is irritating to the skin. Inhalation of the vapours may cause pneumonitis. The substance may cause effects on the central nervous systemandkidneys. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
The substance may have effects on the central nervous system kidneys , resulting in irritability, emotional instability, tremor, mental and memory disturbances, speech disorders. Danger of cumulative effects. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

PHYSICAL PROPERTIES

Boiling point: 357°C
Melting point: -39°C
Relative density (water = 1): 13.5
Solubility in water:
none

Vapour pressure, Pa at 20°C: 0.26
Relative vapour density (air = 1): 6.93
Relative density of the vapour/air-mixture at 20°C (air = 1): 1.009

ENVIRONMENTAL DATA

The substance is very toxic to aquatic organisms. In the food chain important to humans, bioaccumulation takes place, specifically in fish.

N O T E S

Depending on the degree of exposure, periodic medical examination is indicated. No odour warning if toxic concentrations are present. Do NOT take working clothes home.

Transport Emergency Card: TEC (R)-80GC9-II+III

ADDITIONAL INFORMATION

ICSC: 0056 **MERCURY**

International Chemical Safety Cards

NICKEL

ICSC: 0062

Ni
Atomic mass: 58.7
(powder)

ICSC # 0062
CAS # 7440-02-0
RTECS # QR5950000
EC # 028-002-00-7
October 17, 2001 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Flammable as dust. Toxic fumes may be released in a fire.		Dry sand. NO carbon dioxide. NO water.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
EXPOSURE		PREVENT DISPERSION OF DUST! AVOID ALL CONTACT!	
•**INHALATION**	Cough. Shortness of breath.	Local exhaust or breathing protection.	Fresh air, rest.
•**SKIN**		Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap.
•**EYES**		Safety spectacles, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**		Do not eat, drink, or smoke during work.	Rinse mouth.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Vacuum spilled material. Carefully collect remainder, then remove to safe place. Personal protection: P2 filter respirator for harmful particles.	Separated from strong acids.	Xn symbol R: 40-43 S: 2-22-36

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0062

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities (C) IPCS CEC 1994. No modifications to the International version have been made except to add the OSHA PELs, NIOSH RELs and NIOSH IDLH values.

International Chemical Safety Cards

NICKEL

ICSC: 0062

I	**PHYSICAL STATE; APPEARANCE:** SILVERY METALLIC SOLID IN VARIOUS FORMS. **PHYSICAL DANGERS:**
	ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of the dust.

IMPORTANT DATA	Dust explosion possible if in powder or granular form, mixed with air. **CHEMICAL DANGERS:** Reacts violently, in powder form, with titanium powder and potassium perchlorate, and oxidants such as ammonium nitrate, causing fire and explosion hazard. Reacts slowly with non-oxidizing acids and more rapidly with oxidizing acids. Toxic gases and vapours (such as nickel carbonyl) may be released in a fire involving nickel. **OCCUPATIONAL EXPOSURE LIMITS:** TLV: (Inhalable fraction) 1.5 mg/m³ as TWA A5 (not suspected as a human carcinogen); (ACGIH 2004). MAK: (Inhalable fraction) sensitization of respiratory tract and skin (Sah); Carcinogen category: 1; (DFG 2004). OSHA PEL*†: TWA 1 mg/m^3 *Note: The PEL does not apply to Nickel carbonyl. NIOSH REL*: Ca TWA 0.015 mg/m^3 See Appendix A *Note: The REL does not apply to Nickel carbonyl. NIOSH IDLH: Ca 10 mg/m^3 (as Ni) See: 7440020	**INHALATION RISK:** Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed. **EFFECTS OF SHORT-TERM EXPOSURE:** May cause mechanical irritation. Inhalation of fumes may cause pneumonitis. **EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:** Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation exposure may cause asthma. Lungs may be affected by repeated or prolonged exposure. This substance is possibly carcinogenic to humans.
PHYSICAL PROPERTIES	Boiling point: 2730°C Melting point: 1455°C Density: 8.9 g/cm3	Solubility in water: none
ENVIRONMENTAL DATA		

N O T E S

At high temperatures, nickel oxide fumes will be formed. Depending on the degree of exposure, periodic medical examination is suggested. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance.

ADDITIONAL INFORMATION

ICSC: 0062 **NICKEL**

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

Blue powder
Merrillite
Zn
Atomic mass: 65.4
(powder)

ICSC # 1205
CAS # 7440-66-6
RTECS # ZG8600000
UN # 1436 (zinc powder or dust)
EC # 030-001-00-1
October 24, 1994 Peer reviewed

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
FIRE	Highly flammable. Many reactions may cause fire or explosion. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking. NO contact with acid(s), base (s) and incompatible substances (see Chemical Dangers).	Special powder, dry sand, NO other agents. NO water.
EXPLOSION	Risk of fire and explosion on contact with acid(s), base(s), water and incompatible substances.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Prevent deposition of dust.	In case of fire: cool drums, etc., by spraying with water but avoid contact of the substance with water.
EXPOSURE		PREVENT DISPERSION OF DUST! STRICT HYGIENE!	
•**INHALATION**	Metallic taste and metal fume fever. Symptoms may be delayed (see Notes).	Local exhaust.	Fresh air, rest. Refer for medical attention.
•**SKIN**	Dry skin.	Protective gloves.	Rinse and then wash skin with water and soap.
•**EYES**		Safety spectacles.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
•**INGESTION**	Abdominal pain. Nausea. Vomiting.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Refer for medical attention.

SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING
Extinguish or remove all ignition sources. Do NOT wash away into sewer. Sweep spilled substance into containers. then remove to safe place. Personal protection: self-contained breathing apparatus.	Fireproof. Separated from acids, bases oxidants Dry.	Airtight. F symbol N symbol R: 15-17-50/53 S: 2-7/8-43-46-60-61 UN Hazard Class: 4.3 UN Subsidiary Risks: 4.2

SEE IMPORTANT INFORMATION ON BACK

International Chemical Safety Cards

ZINC POWDER

ICSC: 1205

I M P O R T A N T D A T A

PHYSICAL STATE; APPEARANCE:
ODOURLESS GREY TO BLUE POWDER.

PHYSICAL DANGERS:
Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.

CHEMICAL DANGERS:
Upon heating, toxic fumes are formed. The substance is a strong reducing agent and reacts violently with oxidants. Reacts with water and reacts violently with acids and bases forming flammable/explosive gas (hydrogen - see ICSC0001) Reacts violently with sulfur, halogenated hydrocarbons and many other substances causing fire and explosion hazard.

OCCUPATIONAL EXPOSURE LIMITS:
TLV not established.

ROUTES OF EXPOSURE:
The substance can be absorbed into the body by inhalation and by ingestion.

INHALATION RISK:
Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

EFFECTS OF SHORT-TERM EXPOSURE:
Inhalation of fumes may cause metal fume fever. The effects may be delayed.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:
Repeated or prolonged contact with skin may cause dermatitis.

PHYSICAL PROPERTIES

Boiling point: 907°C
Melting point: 419°C
Relative density (water = 1): 7.14
Solubility in water: reaction
Vapour pressure, kPa at 487°C: 0.1
Auto-ignition temperature: 460°C

ENVIRONMENTAL DATA

N O T E S

Zinc may contain trace amounts of arsenic, when forming hydrogen, may also form toxic gas arsine (see ICSC 0001 and ICSC 0222). Reacts violently with fire extinguishing agents such as water, halons, foam and carbon dioxide. The symptoms of metal fume fever do not become manifest until several hours later. Rinse contaminated clothes (fire hazard) with plenty of water.

Transport Emergency Card: TEC (R)-43GWS-II+III
NFPA Code: H0; F1; R1;

ADDITIONAL INFORMATION

ICSC: 1205 **ZINC POWDER**

IMPORTANT LEGAL NOTICE:

APPENDIX D

HOSPITAL INFORMATION AND MAP

FIELD ACCIDENT REPORT

FIELD ACCIDENT REPORT

This report is to be filled out by the designated Site Safety Officer after EVERY accident.

PROJECT NAME _____ PROJECT. NO._____

Date of Accident _____ Time _____ Report By _____

Type of Accident (Check One):

( ) Vehicular ( ) Personal ( ) Property

Name of Injured _____ DOB or Age _____

How Long Employed _____

Names of Witnesses _____

_____

Description of Accident _____

_____

_____

Action Taken _____

_____

_____

Did the Injured Lose Any Time? _____ How Much (Days/Hrs.)? _____

Was Safety Equipment in Use at the Time of the Accident (Hard Hat, Safety Glasses, Gloves, Safety Shoes, etc.)? _____

_____

(If not, it is the EMPLOYEE'S sole responsibility to process his/her claim through his/her Health and Welfare Fund.)

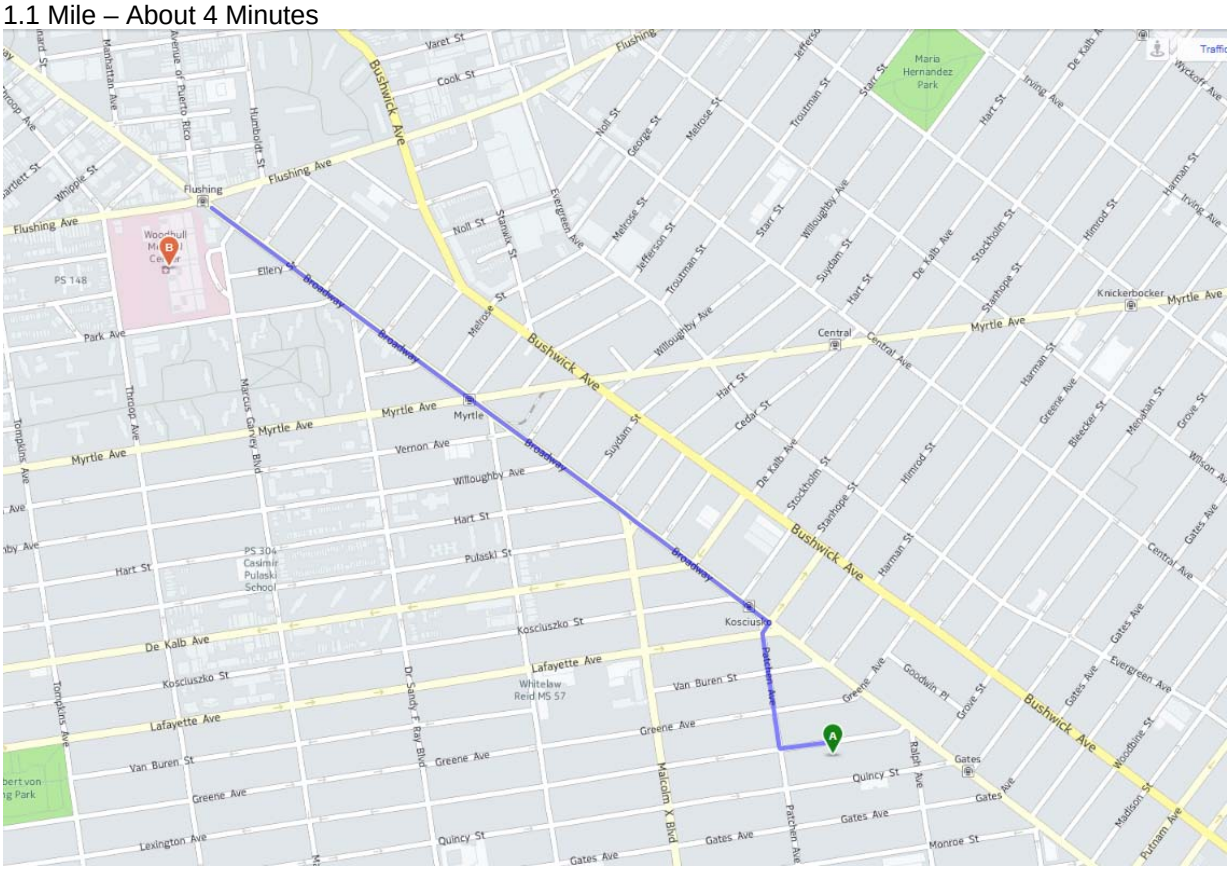
INDICATE STREET NAMES, DESCRIPTION OF VEHICLES, AND NORTH ARROW

HOSPITAL INFORMATION AND MAP

The hospital nearest the site is:

WOODHULL MEDICAL CENTER

760 Broadway Brooklyn, NY 11205
718-963-8000
1.1 Mile – About 4 Minutes



Driving directions to The Brooklyn Hospital Center

818 Lexington Ave, Brooklyn, NY 11221-2912
A

	Head toward Patchen Ave on Lexington Ave.	Go for 357 ft/109 m
↱	Turn right onto Patchen Ave.	Go for 0.2 mi/243 m
↖	Bear left onto Broadway.	Go for 0.9 mi/1.5 km
	Your destination on Broadway is on the left. The trip takes 1.1 mi/1.8 km and 4 mins.	

760 Broadway, Brooklyn, NY 11206-5317
B

ATTACHMENT F
VAPOR BARRIER SPECIFICATIONS

VAPORBLOCK® PLUS™ VBP20

Under-Slab Vapor / Gas Barrier

RAVEN INDUSTRIES

Product Description

VaporBlock® Plus™ 20 is a seven-layer co-extruded barrier made from state-of-the-art polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission. VaporBlock® Plus™ 20 is a highly resilient underslab / vertical wall barrier designed to restrict naturally occurring gases such as radon and/or methane from migrating through the ground and concrete slab. VaporBlock® Plus™ 20 is more than 100 times less permeable than typical high-performance polyethylene vapor retarders against Methane, Radon and other harmful VOCs.

VaporBlock® Plus™ 20 is one of the most effective underslab gas barriers in the building industry today far exceeding ASTM E-1745 (Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs) Class A, B and C requirements. Available in a 20 (Class A) mil thicknesses designed to meet the most stringent requirements. VaporBlock® Plus™ 20 is produced within the strict guidelines of our ISO 9001:2008 Certified Management System.

Product Use

VaporBlock® Plus™ 20 resists gas and moisture migration into the building envelop when properly installed to provide protection from toxic/harmful chemicals. It can be installed as part of a passive or active control system extending across the entire building including floors, walls and crawl spaces. When installed as a passive system it is recommended to also include a ventilated system with sump(s) that could be converted to an active control system with properly designed ventilation fans.

VaporBlock® Plus™ 20 works to protect your flooring and other moisture-sensitive furnishings in the building's interior from moisture and water vapor migration, greatly reducing condensation, mold and degradation.

Size & Packaging

VaporBlock® Plus™ 20 is available in 10' x 150' rolls to maximize coverage. All rolls are folded on heavy-duty cores for ease in handling and installation. Other custom sizes with factory welded seams are available based on minimum volume requirements. Installation instructions and ASTM E-1745 classifications accompany each roll.

Under-Slab Vapor/Gas Retarder

Product	Part #
VaporBlock Plus 20	VBP 20

APPLICATIONS

- Radon Barrier
- Methane Barrier
- VOC Barrier
- Under-Slab Vapor Retarder
- Foundation Wall Vapor Retarder

VaporBlock® Plus™
UNDERSLAB VAPOR RETARDER / GAS BARRIER

VAPORBLOCK® PLUS™ VBP20

ISO 9001:2008 CERTIFIED MANAGEMENT SYSTEM

Under-Slab Vapor / Gas Barrier

		VAPORBLOCK PLUS 20	
PROPERTIES	**TEST METHOD**	**IMPERIAL**	**METRIC**
Appearance		White/Gold	
Thickness, Nominal		20 mil	0.51 mm
Weight		102 lbs/MSF	498 g/m²
Classification	ASTM E 1745	CLASS A, B & C	
Tensile Strength lbf/in (N/cm) average MD & TD (new material)	ASTM E 154 Section 9 (D-882)	58 lbf	102 N
Impact Resistance	ASTM D 1709	2600 g	
Maximum Use Temperature		180° F	82° C
Minimum Use Temperature		-70° F	-57° C
Permeance (new material)	ASTM E 154 Section 7 ASTM E 96 Procedure B	0.0051 Perms grains/(ft²·hr·in·Hg)	0.0034 Perms g/(24hr·m²·mm Hg)
Radon Diffusion Coeffiecient	K124/02/95	$< 1.1 \times 10^{-13}$ m²/s	
Methane Permeance	ASTM D 1434	$< 1.7 \times 10^{-10}$ m²/d• atm 0.32 GTR (Gas Transmission Rate) ml/m²•D•ATM	

VaporBlock® Plus™ Placement

All instructions on architectural or structural drawings should be reviewed and followed.
Detailed installation instructions accompany each roll of VaporBlock® Plus™ and can also be located on our website.
ASTM E-1643 also provides general installation information for vapor retarders.

VaporBlock® Plus™
UNDERSLAB VAPOR RETARDER / GAS BARRIER

VaporBlock® Plus™ is a seven-layer co-extruded barrier made using high quality virgin-grade polyethylene and EVOH resins to provide unmatched impact strength as well as superior resistance to gas and moisture transmission.

RAVEN INDUSTRIES
Engineered Films Division
P.O. Box 5107
Sioux Falls, SD 57117-5107
Ph: (605) 335-0174 • Fx: (605) 331-0333

Toll Free: **800-635-3456**
Email: **efdsales@ravenind.com**
www.ravenefd.com

Limited Warranty available at www.RavenEFD.com