



December 16, 2025

Mr. Andre Obligado, P.G.
Section Chief, Remedial Section C
Division of Environmental Remediation, Region 2
47-40 21st Street
Long Island City, NY 11101
dec.ny.gov | DER.R2@dec.ny.gov

**Ref.: Soil Vapor Intrusion Evaluation Work Plan
Former Pfizer Site C –
NYSDEC BCP Number: C224288
334 Wallabout Street, Brooklyn, NY**

Dear Mr. Obligado,

This work plan has been prepared to conduct a soil vapor intrusion evaluation (SVIE) for Former Pfizer Site C located at 334 Wallabout Street, Brooklyn, NY. The approved Site Management Plan (SMP) requires soil vapor intrusion sampling to be performed following the enclosure of the first floor of Buildings and prior to building occupancy during the heating season, in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York. As you know, two SVIEs have been conducted, however, neither evaluation was performed during the heating season. The SVIE will be conducted during the 2025 heating season as required by the Site Management Plan in the exact sample locations shown on the attached floor plan.

Current Development

The Site underwent a Remedial Action pursuant to a dual Track 2 restricted residential remedy, which was achieved in Buildings A-D and a Track 4 restricted residential use remedy under Building E, which required a cover system pursuant to the approved August 2021 Remedial Action Work Plan and August 2021 Department Decision Document. Approximately, 106,101.49 tons of contaminated soil was removed from the Site. Extensive dewatering facilitated groundwater remediation, in addition to the implementation of two different types of groundwater treatment, including initially Regensis Petrofix injections and later pursuant to a September 8, 2023 Supplemental Remedial Action Work Plan Addendum, Sulfate Bio Chem (SBC) injections were performed in the southern portion of the Track 4 Area in September and October 2023 to further remediate the remaining petroleum VOCs detected in groundwater. To incorporate green remediation principles and techniques, all future on-site buildings included a 20-mil vapor barrier/waterproofing membrane in the foundation to improve energy efficiency as an element of construction. Groundwater monitoring was required pursuant to an approved Site Management Plan (SMP), which was recently implemented in July 2025 and October 2025, which revealed that petroleum contamination only remains in three on-Site wells. Quarterly monitoring will continue pursuant to the SMP requirements.



After completion of the remedial work, five independent, mixed use buildings have been constructed. Buildings A through C have a basement. It is mostly used for parking. Building D's basement is used as storage for the residential apartments. Building E is mostly slab on grade. All basements at building A through D are at or below the groundwater table. All first floors and second floors are used as commercial and institutional space. Residences start on the third floors of each of the 8-story buildings. Residential use extends to the eighth floor.

SMP

The Soil Vapor Intrusion Evaluation required by the SMP includes the collection of three sub-slab samples from Building E (Block 2265, Lot 20) identified as 23SS1, 23SS2, 23SS3 along with two co-located indoor air locations (one on the main floor commercial space and one at the lowest residential level) for each sub-slab samples. Additionally, six indoor air samples will be collected from each of the remaining Buildings, Buildings A (Block 2265, Lot 14), B (Block 2265, Lot 16), C (Block 2265, Lot 18), and D (Block 2265, Lot 20). Two indoor air samples will be collected from the basement of these buildings, two indoor air samples will be collected from the main floor commercial space and two indoor air samples will be collected from the lowest residential floor.

A building product inventory will first be conducted to determine if any chemicals in the spaces sampled could be a source of any vapors detected.

In addition to the above SVIE, a cover inspection will be conducted in Building E.

This SVIE WP identified the uses of the spaces in the basement and the rest of the floors subject to testing.

We will request the laboratory that their reports reflect that testing is capable of achieving minimum detection limits for the EPA analytical method.

SVIE Work Plan:

The proposed soil vapor evaluation will be performed in accordance with the NYSDOH's *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, dated October 2006 and subsequent updates.

This evaluation will consist of the collection of indoor air (IA), sub-slab vapor (SS), and outdoor air (OA) samples as required by the SMP and as outlined above. On August 11, 2023 three sub-slab vapor points were installed in the slab of Building E. Building E has a slab-on-grade foundation with the first floor being the lowest level commercial space. The three sub-slab vapor samples will be collected during the soil vapor evaluation when the HVAC system is operational after confirming the space is fully enclosed. The SVI sampling locations are shown on **Figures 1-9**.

Ambient air samples will accompany each sampling event to utilize the appropriate NYSDOH Matrices to determine the course of action, if action is warranted.

Three indoor air samples will be collected, and co-located with the three sub-slab samples, from the main/first floor commercial space and three indoor air samples will be collected from the lowest level



residential floor in Building E (a total of 6 indoor air and 3 sub-slab vapor samples in 23SS1, 23SS2, 23SS3).

Additionally, six indoor air samples will be collected from Building A, Building B, Building C and Building D (total of 24 indoor air samples): From each building, (Building A through Building D) two indoor air samples will be collected from the basement level, two indoor air samples will be collected from the first-floor commercial space and two indoor air samples will be collected from the lowest level residential space which is the third floor for all buildings. The proposed indoor air sampling locations are shown on **Figure 1 through 9**. Additionally, during each sampling day an outdoor air sample will be collected.

The total number of samples to be collected is 34 samples:

| Building | Subslab Sample | | | Indoor Air (Basement) | | | Indoor Air (lowest Com) | | | Indoor Air (lowest Res) | | | Outdoor Air | | |
|----------|----------------|---------|------------------|-----------------------|---------|----------------------|-------------------------|---------|-----------------------|-------------------------|---------|------------------|-------------|---------|------------------------|
| | Figure# | ID | Location | Figure# | ID | Location | Figure# | ID | Use | Figure# | ID | Location | Figure# | ID | Location |
| A | 2 | 25IA-A1 | Garage NE | 3 | 25IA-A2 | Retail N (Wallabout) | 4 | 25IA-A3 | Dining Rm NE | 6 | 25IA-A4 | Res Storage SE | 8 | 23SS-1 | Retail (South) |
| | | 25IA-A4 | Res Storage SE | | 25IA-A5 | Retail E (Harrison) | | 25IA-A6 | Bedroom1 Center | | 25IA-B1 | Garage N | | 23SS-2 | Retail (Center) |
| | | 25IA-B1 | Garage N | | 25IA-B2 | Retail W | | 25IA-B3 | Bedroom3 NW | | 25IA-B4 | Elec. Mtr Rm S | | 23SS-3 | Retail (North) |
| | | 25IA-B4 | Elec. Mtr Rm S | | 25IA-B5 | Loading Berth | | 25IA-B6 | Kitchen Center | | 25IA-C1 | Fire Pump Rm N | | 25IA-C2 | Commun. Fac. Lobby |
| B | 5 | 25IA-C1 | Fire Pump Rm N | 6 | 25IA-C2 | Commun. Fac. Lobby | 7 | 25IA-C3 | Bathroom 3-Apt C-5 | 8 | 25IA-C4 | Res Lobby S | | 25IA-C4 | Res Lobby S |
| | | 25IA-C4 | Res Lobby S | | 25IA-C5 | Retail Center | | 25IA-C6 | Laundry-Apt G-3 | | 25IA-D1 | Res Lobby N | | 25IA-D2 | Retail NW |
| | | 25IA-D1 | Res Lobby N | | 25IA-D2 | Retail NW | | 25IA-D3 | Bathroom 1-Apt B-3 | | 25IA-D4 | Hallway School S | | 25IA-D5 | Hallway School S |
| | | 25IA-D4 | Hallway School S | | 25IA-D5 | Hallway School S | | 25IA-D6 | Bedroom1-Apt F-5 | | 25IA-E1 | Retail (South) | | 25IA-E2 | SW Apt-Kitchen Apt O-3 |
| C | 8 | 25IA-E1 | Retail (South) | 8 | 25IA-E3 | Retail (Center) | 9 | 25IA-E4 | Center Apt-LR Apt I-1 | 6 | 25IA-E3 | Retail (Center) | | 25IA-E5 | Retail (North) |
| | | 25IA-E3 | Retail (Center) | | 25IA-E5 | Retail (North) | | 25IA-E6 | N Apt-LR Apt E-2 | | 25IA-E5 | Retail (North) | | 25IA-E6 | N Apt-LR Apt E-2 |
| | | 25IA-E5 | Retail (North) | | 25IA-E6 | N Apt-LR Apt E-2 | | 25IA-E6 | N Apt-LR Apt E-2 | | 25IA-E6 | N Apt-LR Apt E-2 | | 25IA-E6 | N Apt-LR Apt E-2 |
| Outdoor | | | | | | | | | | 6 | OA-1 | Gerry St@ D | | | |

Field conditions may require adjustment of proposed sampling locations.

Indoor Air Questionnaire Survey

Prior to the sampling event, a pre-sampling inspection will be performed, and the *New York State Department of Health Indoor Air Quality Questionnaire and Building Inventory* will be filled out. The sampling will start with an inventory of products used in the amenities space, and where possible, products containing compounds of concern will be removed from the building prior to sampling or will be noted in the inventory.

QA/QC

Samples will be collected in individually certified 6-liter Summa® vacuum canisters equipped with laboratory-supplied regulators calibrated to collect a sample over a 24-hour period in accordance with NYSDOH protocols. The indoor and outdoor canisters will be placed in raised positions to simulate breathing zone conditions in accordance with NYSDOH procedures. The canisters will be transported to Phoenix Labs under chain of custody. These samples will be analyzed for volatile organic compounds (VOCs) by USEPA method TO-15. A sampling report will be generated upon receipt of the results.



As indicated above and in the Attachments, all work will be implemented in accordance with this SVIWP, the Quality Assurance Project Plan (QAPP) and the Health and Safety Plan (HASP).

Sincerely,

Ariel Czemerinski, PE
AMC Engineering, PLLC

cc: Moshe Neiman, Owner
 Linda Shaw, Esq
 Grace Nam, Esq, NYSDEC
 Jane O'Connell, PG, Chief, NYSDEC DER

Enclosures

Figures

Attachment 1 – Health and Safety Plan

Attachment 2 – Quality Assurance Project Plan

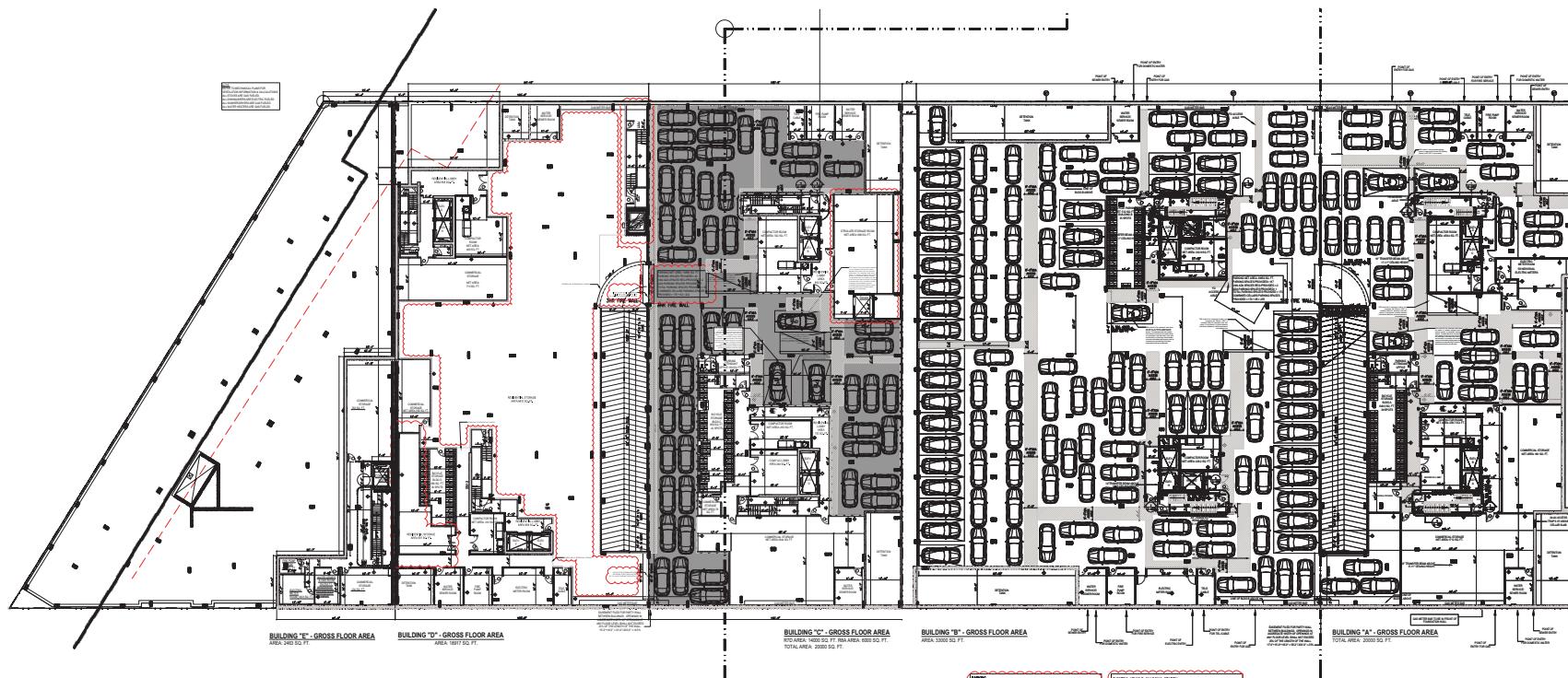
Attachment 3 – NYSDOH Indoor Air Quality Questionnaire and Building Inventory

SAMPLING PLAN

| Building | Subslab Sample | | | Indoor Air (Basement) | | | Indoor Air (lowest Com) | | | Indoor Air (lowest Res) | | | Outdoor Air | | |
|----------|----------------|----|----------|-----------------------|-----------------------|-------------|-------------------------|------------------------|-----|-------------------------|--------------------|----------|-------------|----|----------|
| | Figure# | ID | Location | Figure# | ID | Location | Figure# | ID | Use | Figure# | ID | Location | Figure# | ID | Location |
| A | | | | 25IA-A1 | Garage NE | | 25IA-A2 | Retail N (Wallabout) | | 25IA-A3 | Dining Rm NE | | | | |
| B | | | | 25IA-A4 | Res Storage SE | | 25IA-A5 | Retail E (Harrison) | | 25IA-A6 | Bedroom1 Center | | | | |
| C | | | | 25IA-B1 | Garage N | | 25IA-B2 | Retail W | | 25IA-B3 | Bedroom3 NW | | | | |
| D | | | | 25IA-B4 | Elec. Mtr Rm S | | 25IA-B5 | Loading Berth | | 25IA-B6 | Kitchen Center | | | | |
| E | 8 | | | 25IA-C1 | Fire Pump Rm N | | 25IA-C2 | Commun. Fac. Lobby | | 25IA-C3 | Bathroom 3-Apt C-5 | | | | |
| | | | | 25IA-C4 | Res Lobby S | | 25IA-C5 | Retail Center | | 25IA-C6 | Laundry-Apt G-3 | | | | |
| | | | | 25IA-D1 | Res Lobby N | | 25IA-D2 | Retail NW | | 25IA-D3 | Bathroom 1-Apt B-3 | | | | |
| Outdoor | | | | 25IA-D4 | Hallway S | | 25IA-D5 | Hallway School S | | 25IA-D6 | Bedroom1-Apt F-5 | | | | |
| | 8 | | | 25IA-E1 | Retail (South) | | 25IA-E2 | SW Apt-Kitchen Apt O-3 | | 25IA-E3 | Retail (Center) | | | | |
| | | | | 25IA-E4 | Center Apt-LR Apt I-1 | | 25IA-E5 | Retail (North) | | 25IA-E6 | N Apt-LR Apt E-2 | | | | |
| | | | | 6 | OA-1 | Gerry St@ D | | | | | | | | | |



Figures



Building E

Building D

Building C

Building B

Building A

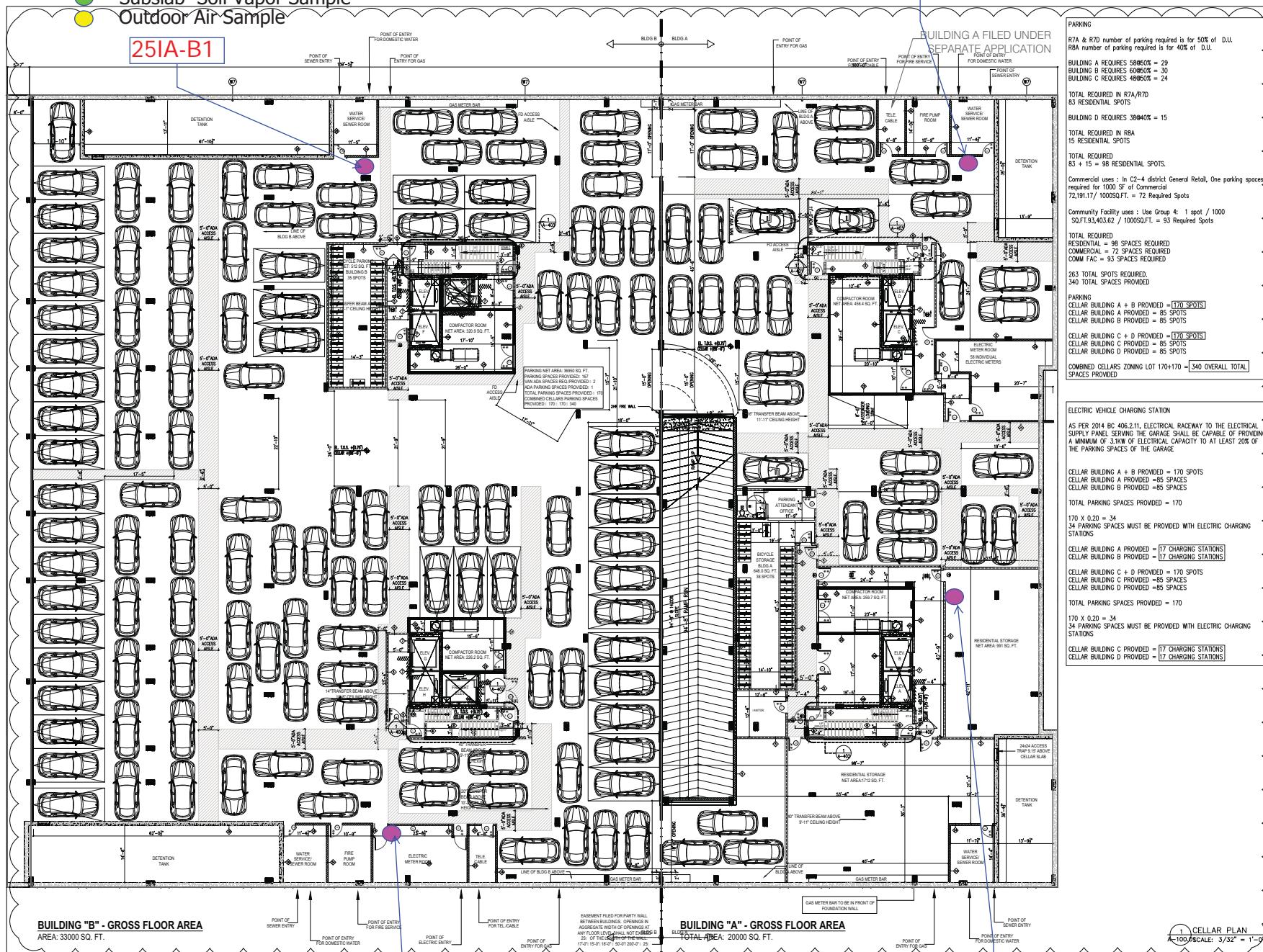
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| date | APR. 2018 | sheet no. | OF --- |
| drawn | CL | drawing no. | |
| checked | HW | | A-100A |

FIGURE 1

LEGEND

Indoor Air - Third Floor-Lowest Residential Occupied Space
Indoor Air Sample - First Floor Commercial
Indoor Air Sample - Basement (Cellar)
Subslab Soil Vapor Sample



BUILDING B - CELLULAR PLAN

25IA-B4

BUILDING A - CELLULAR PLAN

25IA-A

FIGURE 2

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample

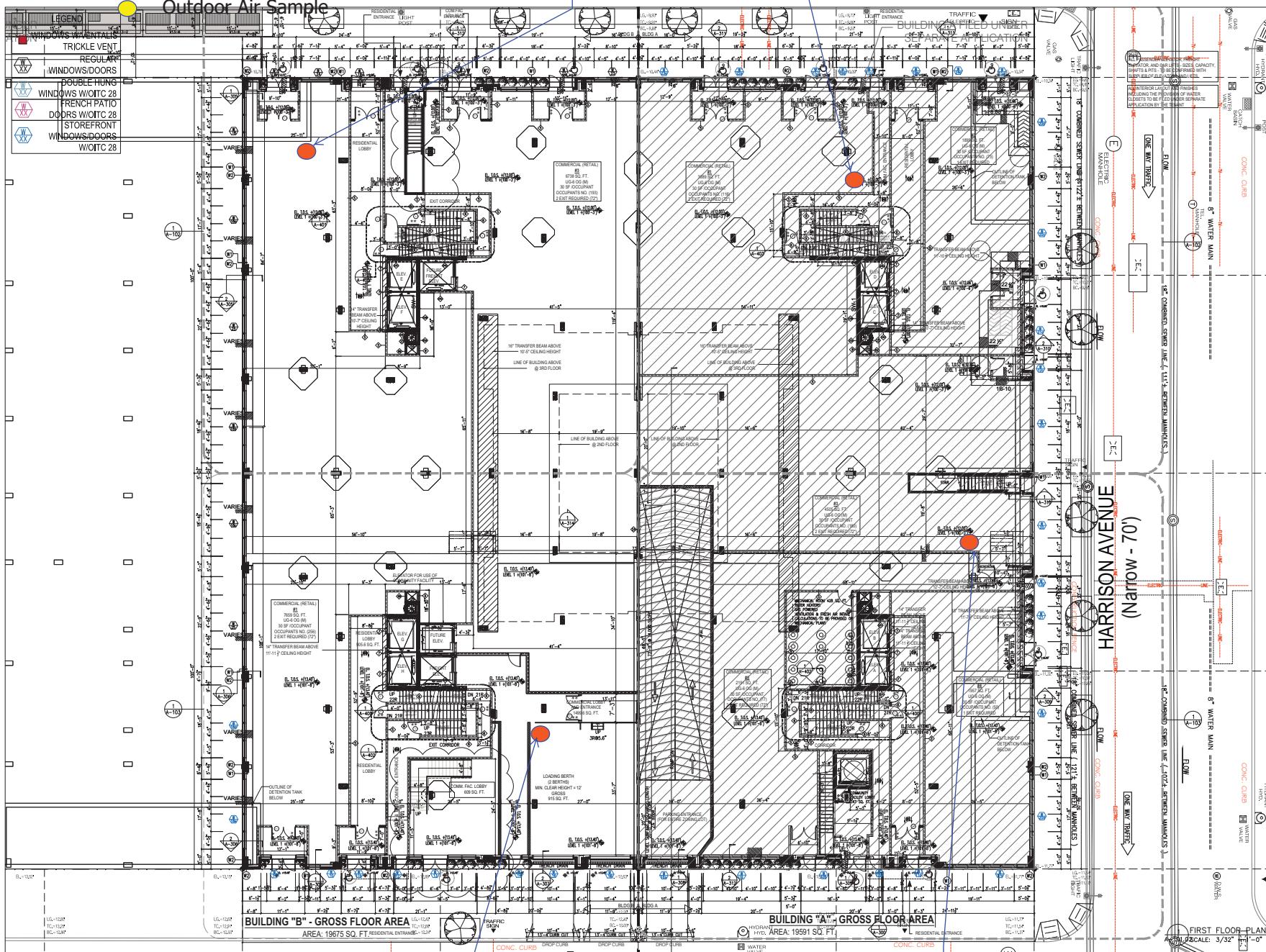


FIGURE 3

LEGEND

Indoor Air - Third Floor-Lowest Residential Occupied Space
Indoor Air Sample - First Floor Commercial
Indoor Air Sample - Basement (Cellar)
Subslab Soil Vapor Sample
Outdoor Air Sample

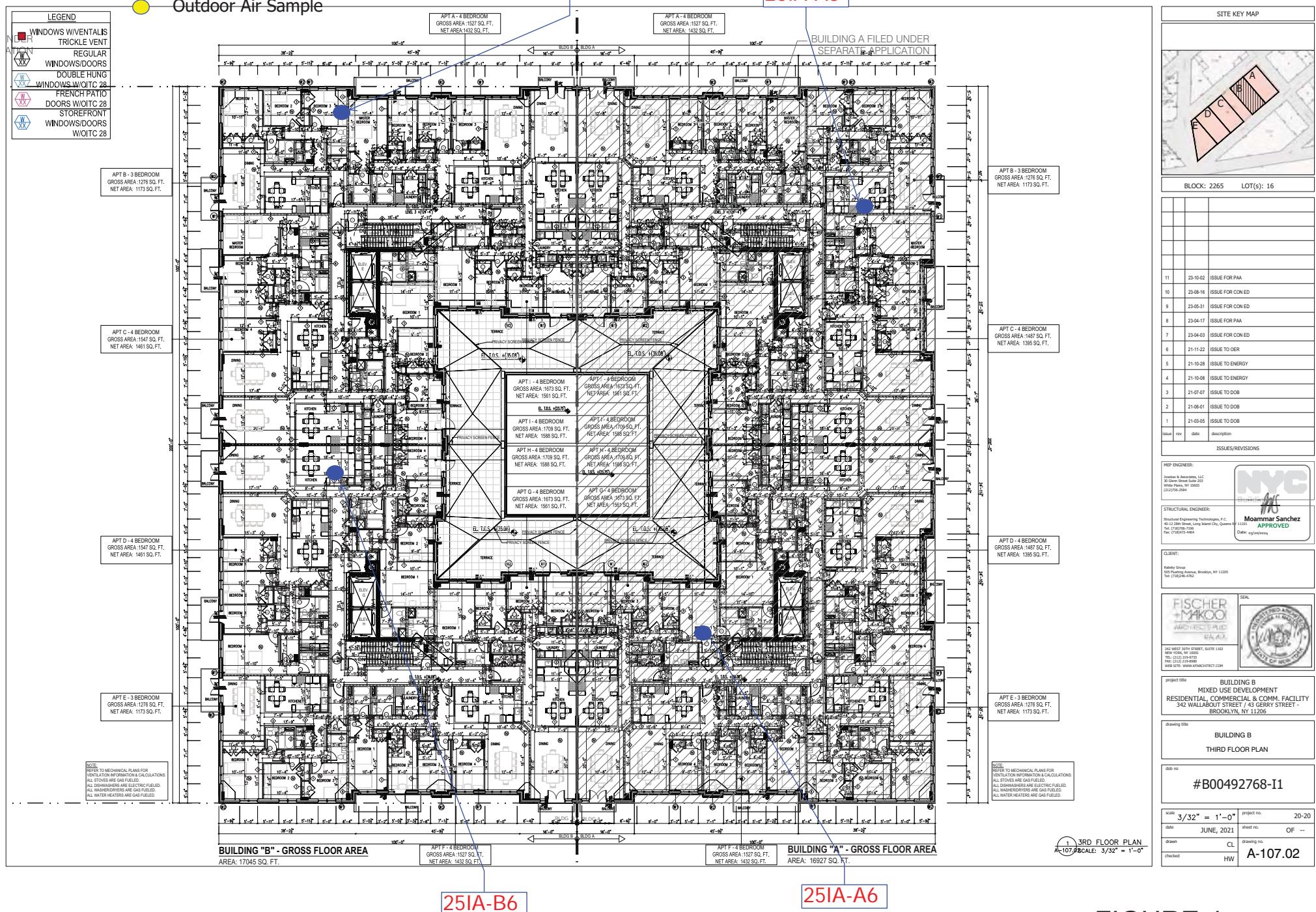


FIGURE 4

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample

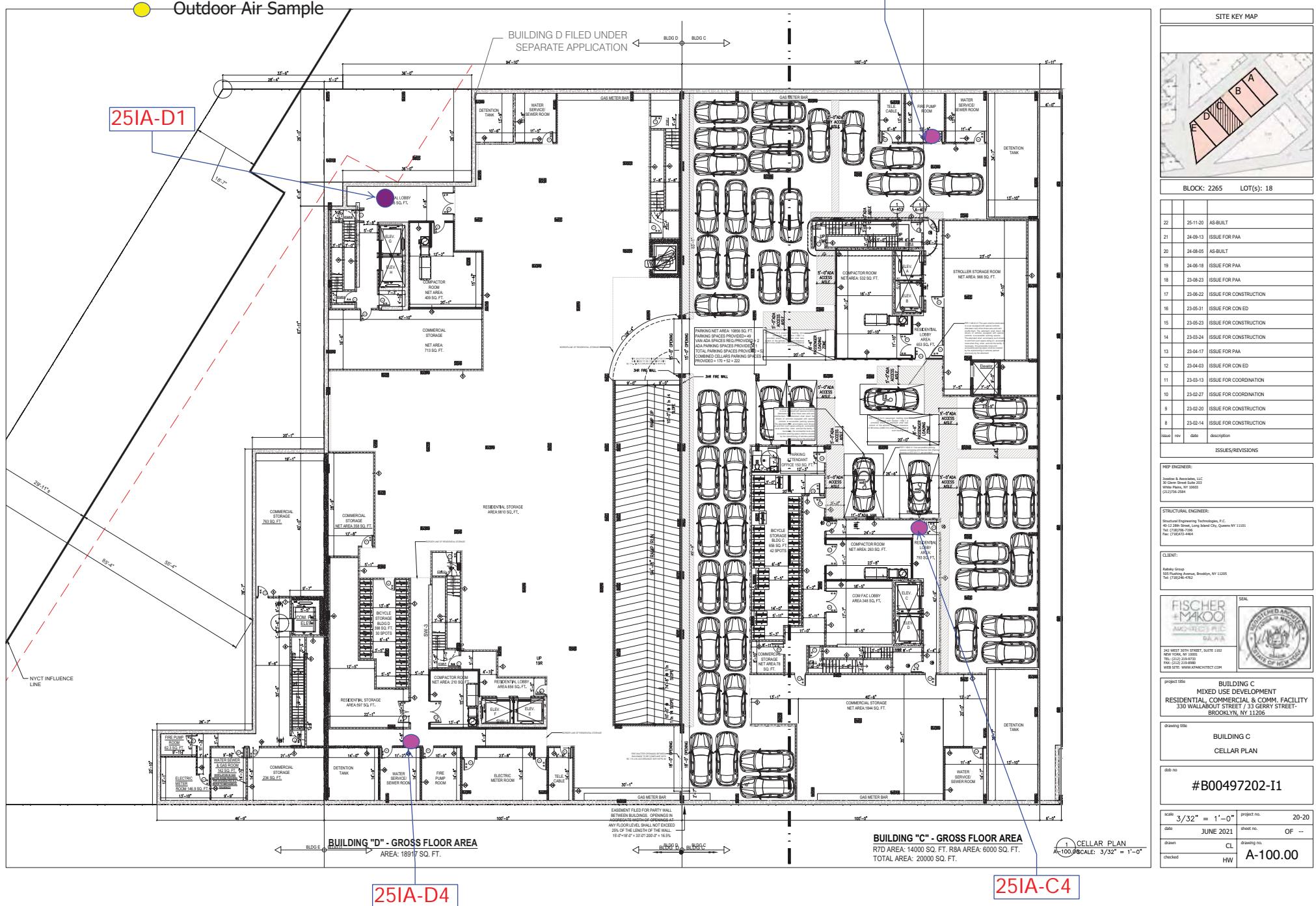
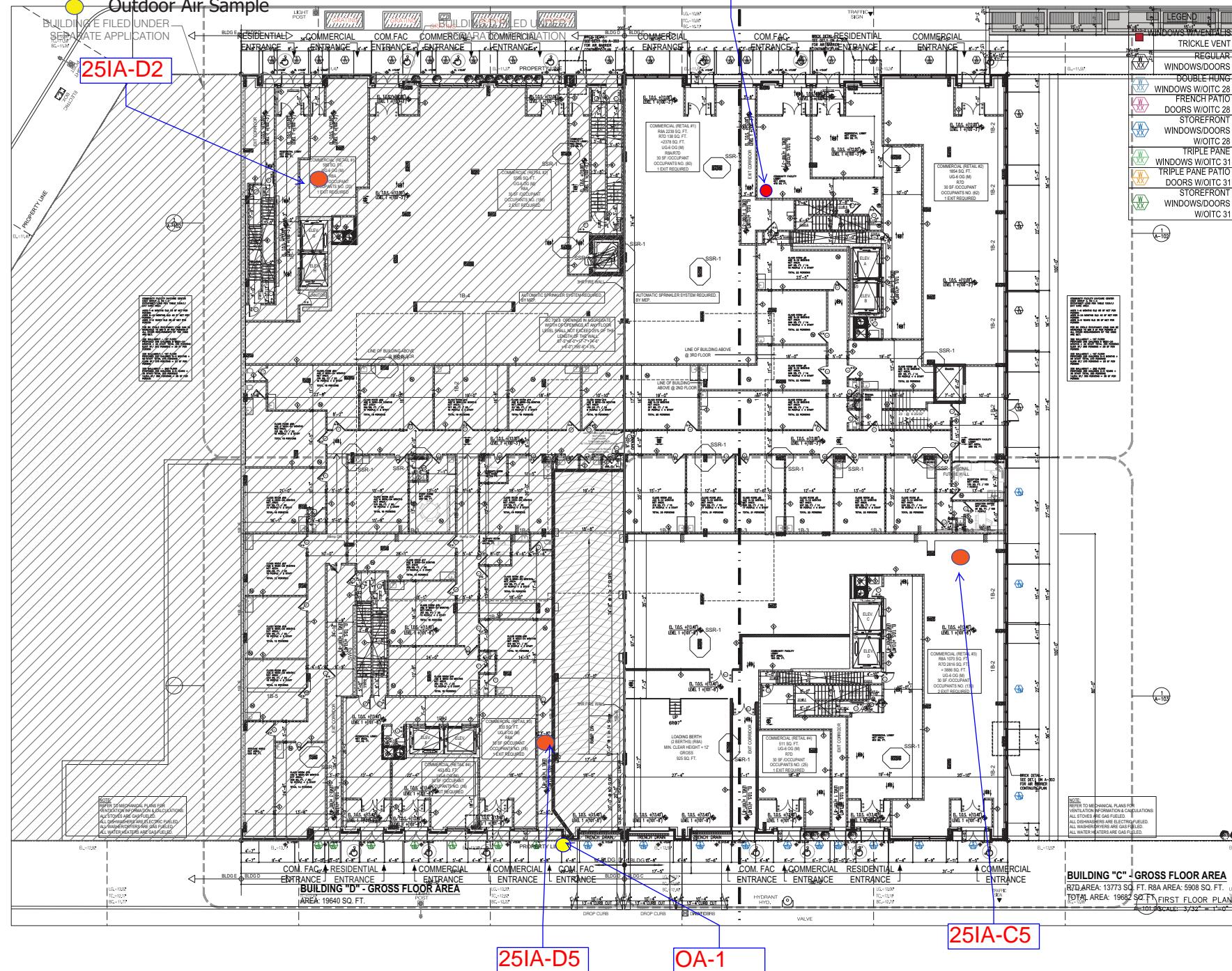


FIGURE 5

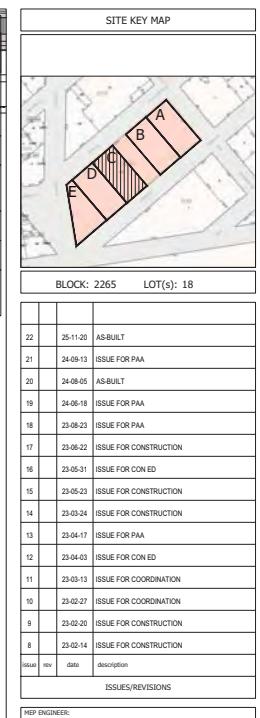
LEGEND

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample



SITE KEY MAP



MEP ENGINEER:

STRUCTURAL ENGINEER:
Structural Engineering Technologies, P.C.
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Tel: (718)706-7195
Fax: (718)472-4464

CLIENT:
Rabasky Group
505 Flushing Avenue, Brooklyn, NY 11205
Tel: (718)246-4762



project title **BUILDING C
MIXED USE DEVELOPMENT
RESIDENTIAL, COMMERCIAL & COMM. FACILITY**

330 WALLABOUT STREET / 33 GERRY STREET-
BROOKLYN, NY 11206

FIRST FLOOR PLAN

#B00497202-II

| | | | |
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| date | JUNE 2021 | sheet no. | OF -- |
| drawn | CL | drawing no. | |
| checked | HW | A-101.00 | |

FIGURE 6

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample

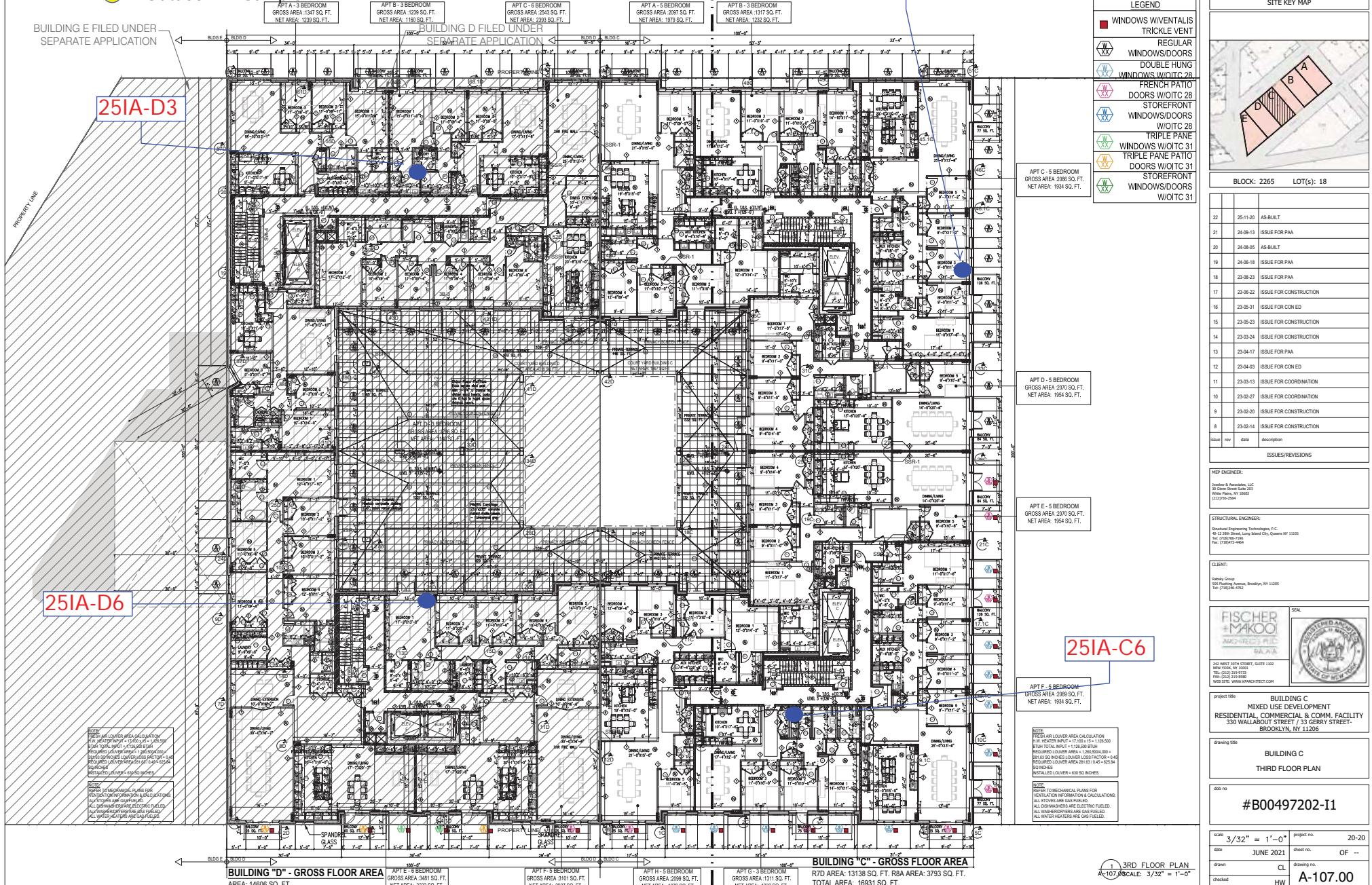
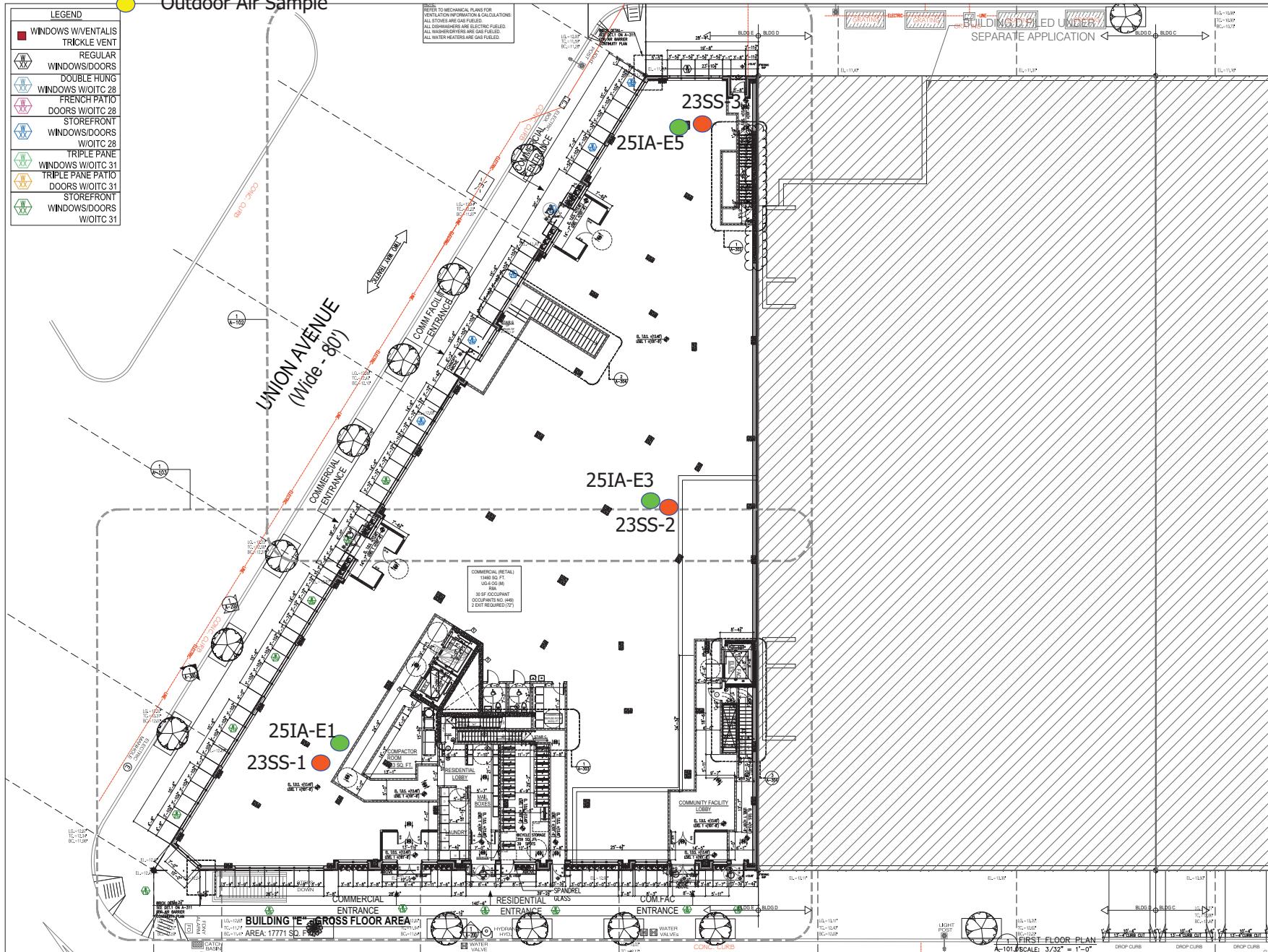


FIGURE 7

LEGEND

Indoor Air - Third Floor-Lowest Residential Occupied Space
Indoor Air Sample - First Floor Commercial
Indoor Air Sample - Basement (Cellar)
Subslab Soil Vapor Sample
Outdoor Air Sample



| SITE KEY MAP | | | |
|---|-----|------------|------------------------|
|  | | | |
| BLOCK: 2265 | | LOT(s): 22 | |
| issue | rev | date | description |
| 23 | | 25-11-24 | ISSUE FOR PAA |
| 22 | | 25-09-09 | ISSUE FOR PAA |
| 21 | | 25-03-17 | ISSUE FOR OER |
| 20 | | 25-01-17 | AS-BUILT |
| 21 | | 24-09-23 | ISSUE FOR COORDINATION |
| 20 | | 24-08-05 | AS-BUILT |
| 19 | | 23-11-03 | ISSUE FOR COORDINATION |
| 18 | | 23-09-09 | ISSUE FOR PAA |
| 17 | | 23-04-17 | ISSUE FOR PAA |
| 16 | | 23-09-03 | ISSUE FOR CONSTRUCTION |
| 15 | | 21-11-23 | ISSUE TO HPD |
| 14 | | 21-11-05 | REISSUE TO HPD |
| 13 | | 21-10-22 | REISSUE TO HPD |
| 12 | | 21-09-08 | REISSUE TO ENERGY |
| 11 | | 21-08-26 | REISSUE TO DOB |
| issue | rev | date | description |
| ISSUES/REVISIONS | | | |

| |
|--|
| MEP ENGINEER: |
| Zonner & Associates, LLC |
| 30 Grant Street Suite 203 |
| White Plains, NY 10601 |
| (212)376-2024 |
| |
| STRUCTURAL ENGINEER: |
| Structural Engineering Technologies, P.C. |
| 40-10 73rd Street, 11th Floor, Bayside, NY 11361 |
| Tel: (718)261-7206 |
| Fax: (718)261-7207 |
| |
| CLIENT: |
| Rabuy Group |
| 205 1/2 Main Street, Brooklyn, NY 11205 |
| Tel: (718)464-4762 |

| | |
|---------------|---|
| project title | BUILDING E MIXED USE DEVELOPMENT RESIDENTIAL, COMMERCIAL & COMM. FACILITY 14 UNION AVE / 11 GERRY STREET - BROOKLYN, NY 11206 |
| drawing title | BUILDING E |

| | | |
|------------------|---------------|-------------|
| FIRST FLOOR PLAN | | |
| dob no | #B00509455 | |
| scale | 3/32" = 1'-0" | project no. |
| date | JUNE, 2021 | sheet no. |
| drawn | CJ | drawing no. |

FIGURE 8



Attachment 1

Health and Safety Plan

Health and Safety Plan (HASP)

Former Pfizer Site A
334 Wallabout Street
Brooklyn, NY

Prepared for:

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by:

AMC Engineering, PLLC
18-36 42nd Street
Astoria, NY 11105

Health and Safety Plan Expiration Date: December 2026

Site no: C224288



AMC Engineering PLLC
18-36 42nd Street
Astoria, NY 11105
Phone: (718) 545-0474
Info@amc-engineering.com

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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 Indoor Air Evaluation at 334 Wallabout Street, 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. Contractors and suppliers are retained as independent contractors and are responsible for ensuring the health and safety of their own employees.

1.0 INTRODUCTION

This document describes the health and safety guidelines developed by AMC Engineering (AMC) for the implementation of an Indoor Air Evaluation (IAE) at the site located at: Former Pfizer Site A, 334 Wallabout Street, Brooklyn, NY to protect on-site personnel, visitors, and the public from physical harm and exposure to hazardous materials or wastes during subsurface investigation activities. In accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR Part 1910.120 Hazardous Waste Operations and Emergency Response Final rule, this HASP, including the attachments, addresses safety and health hazards related to subsurface sample collection activities and is based on the best information available. The HASP may be revised by AMC at the request of the Client and/or the New York State Department of Environmental Conservation (NYSDEC) or New York State Department of Health (NYSDOH) upon receipt of new information regarding site conditions. Changes will be documented by written amendments signed by the owner's project manager, site safety officer and/or the AMC health and safety consultant.

1.1 Training Requirements

Personnel entering the exclusion zone or decontamination zone are required to be certified in health and safety practices for hazardous waste site operations as specified in the Federal OSHA Regulations CFR 1910.120e (revised 3/6/90).

Paragraph (e - 3) of the above referenced regulations requires that all on-site management personnel directly responsible for or who supervise employees engaged in hazardous waste operations, must initially receive 8 hours of supervisor training related to managing hazardous waste work.

Paragraph (e - 8) of the above referenced regulations requires that workers and supervisors receive 8 hours of refresher training annually on the items specified in Paragraph (e-1) and/or (e- 3).

Additionally, all on-site personnel must receive adequate site-specific training in the form of an on-site Health and Safety briefing prior to participating in field work with emphasis on the following:

- Protection of the adjacent community from hazardous vapors and / or dust which may be released during intrusive activities.
- Identification of chemicals known or suspected to be present on-site and the health effects and hazards of those substances.
- The need for vigilance in personnel protection, and the importance of attention to proper use, fit and care of personnel protective equipment.
- Decontamination procedures.
- Site control including work zones, access and security.
- Hazards and protection against heat or cold.
- The proper observance of daily health and safety practices, such as entry and exit of work zones and site. Proper hygiene during lunch, break, etc.

- Emergency procedures to be followed in case of fire, explosion and sudden release of hazardous gases.

Health and Safety meetings will be conducted on a daily basis and will cover protective clothing and other equipment to be used that day, potential and chemical and physical hazards, emergency procedures, and conditions and activities from the previous day.

1.2 Medical Monitoring Requirements

Field personnel and visitors entering the exclusion zone or decontamination zone must have completed appropriate medical monitoring required under OSHA 29 CFR 1910.120(f) if respirators or other breathing related PPE is needed. Medical monitoring enables a physician to monitor each employee's health, physical condition, and his fitness to wear respiratory protective equipment and carry out on-site tasks.

1.3 Site Safety Plan Acceptance, Acknowledgement and Amendment

The project superintendent and the site safety officer are responsible for informing personnel (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 **Attachment A**.

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

1.4 Key Personnel - Roles and Responsibilities

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

| Name | Title | Contact Numbers |
|-------------------|---------------------------------------|-----------------|
| Ariel Czemerinski | Project Manager & Site Safety Officer | 718-545-0474 |
| Anjeza Harrington | Environmental Engineer | 718-545-0474 |
| Ahmed Elbadri | Environmental Scientist | 718-545-0474 |

The project manager is responsible for overall project administration and, with guidance from the site safety officer, for supervising the implementation of this HASP. The site safety officer will conduct daily (tail gate or toolbox) 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 HASP 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 HASP.
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 street address for the Site is 334 Wallabout Street in Brooklyn, NY. The Site is located in the City of New York in the Broadway Triangle neighborhood of the Borough of the Brooklyn. The Site is known as Former Pfizer Site C and is comprised of five adjacent tax parcels identified as Block 2265, Lots 14, 16, 18, 20, and 22. The irregular shaped Site occupies a full block and consists of approximately 450 ft of frontage along Wallabout Street and 260 feet of frontage on Union Avenue.

Five buildings were constructed onsite: Building A through D are mixed use, multi-story + cellar buildings. Building E is an 10-story building with no cellar.

Regional maps created by the United States Geological Survey (USGS) show bedrock as an igneous intrusive known as the Ravenswood granodiorite of middle Ordovician to middle Cambrian age. Soil borings on the site have not encountered bedrock and it is presumed to lie more than 70 feet below ground surface. Unconsolidated sediments overlie the bedrock and consist of Pleistocene-aged sand, gravel, and silt clays deposited by glacial-fluvial activity. Non-native fill materials consisting of dredge spoils, rubble and/or other materials have historically been used to reinforce and extend shoreline areas and to raise and improve the drainage of low-lying areas.

Subsurface soil at the Site consists of a mixture of a fill material consisting of bricks and other rubble in a silty-soil matrix. The thickness of the fill material varies in depth from approximately 5 to 8 feet, and in some areas to approximately 10 feet. The historic fill material is underlain by a native silty-clay and fine sand. Groundwater is present under water table conditions at a depth of approximately 7 to 9 feet below the surface. Based upon on-site measurements, groundwater flow is to the north-northwest.

2.1 Previous Investigations

The Site, identified as Former Pfizer Site C, is located in Brooklyn, Kings County, New York and was initially identified as Block 2265, and Lot 14 on the New York City Tax Map (see Figure 1).

The Site has since been divided into five separate tax lots identified as Block 2265, Lots 14 (Building A – 352 Wallabout Street), 16 (Building B – 342 Wallabout Street and the courtyard area), 18 (Building C – 330 Wallabout Street), 20 (Building D – 322 Wallabout Street), and 22 (Building E – 11 Gerry Street). The irregular-shaped Site occupies a full block and consists of an approximately 2.55-acre area and is bounded by Wallabout Street to the north, Gerry Street to the south, Harrison Avenue to the east, and Union Avenue to the west.

Summary of the Prior Remediation Work

TRACK 2 PORTION OF SITE:

- Buildings A (Block 2265, Lot 14), B (Block 2265, Lot 16), C (Block 2265, Lot 18), and D (Block 11206, Lot 20) share a subsurface cellar level which will be used as a parking garage.

A courtyard will be constructed above the parking garage in the central portion of the Site between Buildings B and C.

- Building A has been constructed on new Lot 14 and has been designated with the street address 352 Wallabout Street. Building A will consist of an 8-story mixed use (residential, commercial, and community facility) building with a full shared cellar level.
- Building B has been constructed on new Lot 16 and has been designated with the street address 342 Wallabout Street. Building B will consist of a 9-story mixed-use (residential, commercial, and community facility) building with a full shared cellar level. Lot 16 additionally contains a courtyard area between Buildings B and C.
- Building C has been constructed on new Lot 18 and has been designated with the street address 330 Wallabout Street. Building C will consist of an 8-story mixed use (residential, commercial, and community facility) building with a full shared cellar level.
- Building D has been constructed on new Lot 20 and has been designated with the street address 322 Wallabout Street. Building D will consist of an 8-story mixed use (residential, commercial, and community facility) building with a full shared cellar level.
- A small portion of Building E falls within the Track 2 Area. See description of Building E below.

TRACK 4 PORTION OF SITE:

- Building E has been constructed along Union Avenue on new Lot 22 and has been designated with the street address 14 Union Avenue/11 Gerry Street. No basement is present beneath Building E as the area was excavated to only approximately 5-feet below grade for the building's foundation due to the presence of an adjacent NYC subway tunnel, with the exception of the elevator pit which was excavated to approximately 9-feet below grade. A small portion of Building E is within Track 2 Area which was excavated to approximately 17-feet below grade for the removal of Hotspot B shown on Figure 5A. The area of Hotspot B was backfilled to approximately 15-feet below grade with concrete mat slab. A room containing building services is present in this area within Building E along Gerry Street. Building E will consist of a 10-story mixed-use building.

The properties adjoining the Site and in the neighborhood surrounding the Site primarily include commercial, residential, and mixed-use properties. The properties immediately south of the Site include an educational facility and a commercial/residential property; the properties immediately north of the Site include mixed use commercial and residential properties; the properties immediately east of the Site include an educational facility property; and the properties to the west of the Site include mixed use commercial and residential properties.

The Former Pfizer Site C Site is located within the Atlantic Coastal Plain Physiographic Province. The regional subsurface geology consists of unconsolidated sand, silt, clay, and

gravel deposits that overlie crystalline bedrock. The unconsolidated strata dip gently toward the southeast, following the topography of the bedrock surface.

Subsurface soil at the Site consisted of a mixture of fill material consisting of bricks and other rubble in a silty-soil matrix. The thickness of fill material varied in depth from approximately grade to at least 15-feet below grade. The majority of the fill material within the Track 2 portion of the Site has been excavated from the Site at depths ranging from 15 to 23-feet below grade therefore, mostly native silty-clay and fine sand remains under the Track 2 portion of the Site. Fill materials were removed from approximately 5 to 9 feet below grade from the Track 4 portion of the Site. Groundwater is present under water table conditions at a depth of 7 to 9-feet below the surface. As a result of the high groundwater table at the Site, a vapor barrier and waterproofing membrane were required to be incorporated into the foundation design of Buildings A, B, C, and D as a green remediation element and to prevent flooding. Based upon on-Site measurements, groundwater flow is to the east.

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

Areas of risk associated with on-site activities can be 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 to 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.

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 of 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.

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

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

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 $150 \mu\text{g}/\text{m}^3$ 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.

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 greater than $150 \mu\text{g}/\text{m}^3$ 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

Elevated levels of VOCs were detected in both soil and groundwater samples collected during previous investigations at the site. Therefore, excavation activities may cause the release of organic vapors to the atmosphere. The site safety officer will periodically monitor organic vapors with a Photoionization 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.

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.

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.

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 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 potentialIDLH 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:

- a. The SSO will be consulted immediately
- b. 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).
- c. 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 <u>Continue monitoring every 10 minutes</u> |
| 1-5 ppm above background, sustained reading | 1-10% | Continue excavating Go to Level C protection or employ engineering controls |
| 5-25 ppm above background, sustained reading | 10-20% | <u>Continue monitoring every 10 minute</u> 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 |

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 than 5 ppm.

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 logbook. **It is expected that for investigation and excavation activities identification of an exclusion zone, decontamination zone, and support zone will not be necessary.**

Tasks requiring OSHA 40-hour Hazardous Waste Operations and Emergency Response Operations training are carried out in the exclusion zone. 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.

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, are permitted only in the support zone. No smoking is permitted on premises. 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.

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

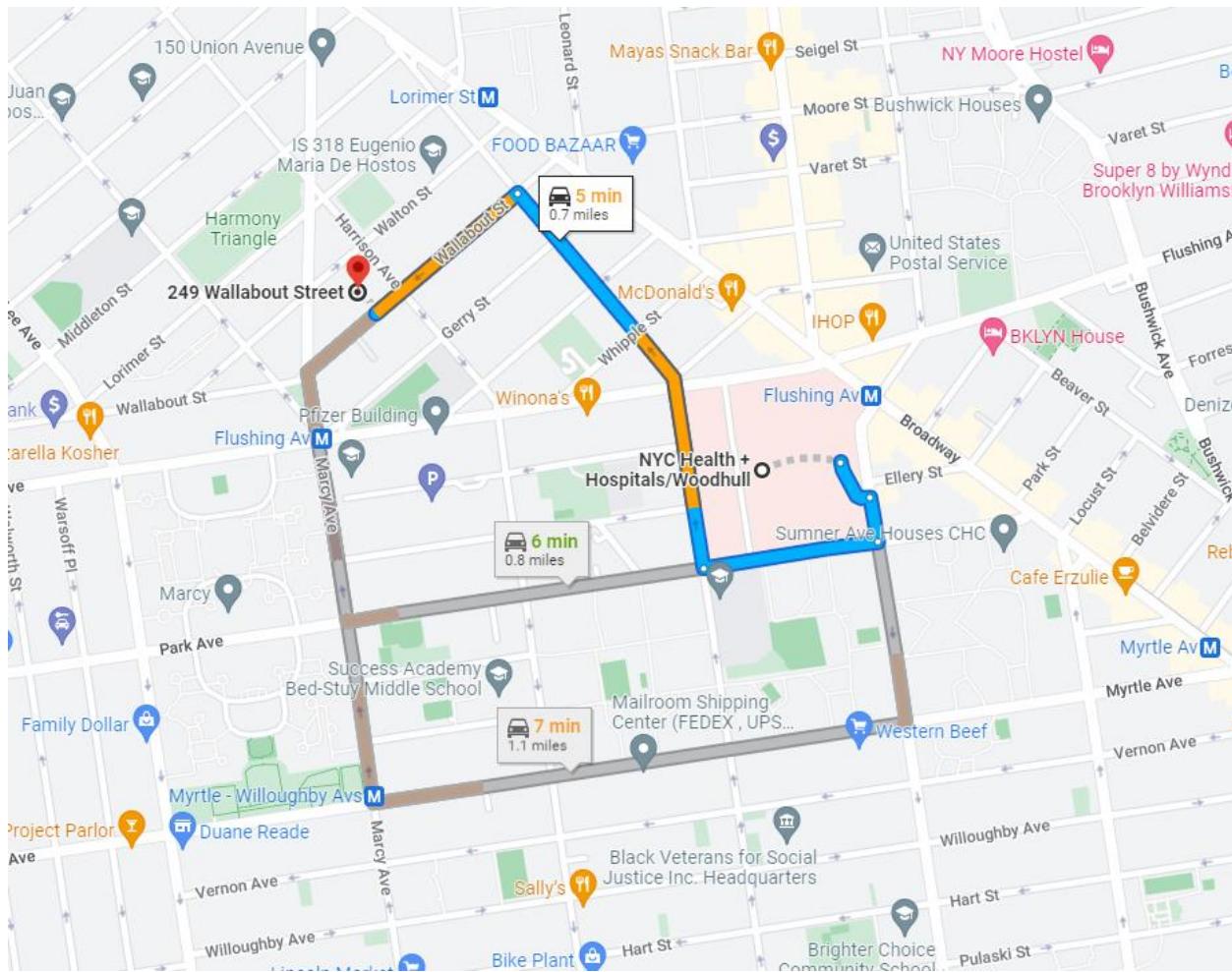
| | |
|---------------------|-------------------------------------|
| Private telephones: | Site personnel. |
| Two-way radios: | Site personnel where necessary. |
| Emergency Alarms: | On-site vehicle horns*. |
| First aid kits: | On-site, in vehicles or office. |
| Fire extinguisher: | On-site, in 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 |
| NYC Police Department | 911 |
| New York City Police Department – 110 th Precinct 94-41 43rd Avenue | |
| Queens, NY 11373 | (718) 476-9311 |
| NYC Fire Department | 911 |
| NYSDEC Spills Hotline | 1-800-457-7362 |
| NYSDEC Regional Materials Management Engineer | (718) 482-4896 |
| NYC Department of Health | (212) 676-2400 |
| National Response Center | 1-800-424-8802 |
| Poison Control | 1-800-222-1222 |
| Project Manager Joe Panico | (732) 379-4990 |

Nearest Hospital in case of Emergency
NYC Health + Hospitals/Elmhurst
79-01 Broadway
Elmhurst, Queens 11373
(718) 334-4000



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 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:

| Name | Title | Contact Numbers |
|-------------------|---------------------------------------|-----------------|
| Ariel Czemerinski | Project Manager & Site Safety Officer | 718-545-0474 |

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 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 (identified in 7.2) and information on the chemical(s) to which they may have been exposed (gasoline).

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 firefighting 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 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

Attachment A: SITE SAFETY ACKNOWLEDGEMENT FORM

BRIEFING 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. |

Attachment B: 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**



Attachment 2

Quality Assurance Project Plan

Quality Assurance Project Plan (QAPP)

Former Pfizer Site A
334 Wallabout Street
Brooklyn, NY

Prepared for:

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

Prepared by:

AMC Engineering, PLLC
18-36 42nd Street
Astoria, NY 11105

Site no: C224288



AMC Engineering PLLC
18-36 42nd Street
Astoria, NY 11105
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Info@amc-engineering.com

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1.0 INTRODUCTION

This Quality Assurance Project Plan (QAPP) has been prepared in accordance with DER-10 to detail procedures to be followed during the course of the sampling and analytical portion of the project, as required by the work plan.

To ensure the successful completion of the project, each individual responsible for a given component of the project must be aware of the quality assurance objectives of his/her particular work and of the overall project. The Project Manager, Ariel Czemerinski will be directly responsible to the client for overall project conduct and quality assurance/quality control (QA/QC) for the project. The Project Manager will be responsible for overseeing all technical and administrative aspects of the project and for directing QA/QC activities and coordinate with field sampling crews and subcontractors. Andrew Sung,PE will serve as the Quality Assurance Officer (QAO) and in this role may conduct:

- Field and sampling audits;
- Interface with the analytical laboratory to resolve problems; and
- Interface with the data validator and/or preparer of the DUSR to resolve problems.

Reporting directly to the Project Manager will be the Field Operations Officer, Ahmed Elbadri, who will serve as the on-Site qualified environmental professional who will record observations, and be responsible for the collection and handling of all samples.

1.1 Organization

Project QA will be maintained under the direction of the Project Manager, in accordance with this QAPP. QC for specific tasks will be the responsibility of the individuals and organizations and organizations listed below, under the direction and coordination of the Project Manager.

| GENERAL RESPONSIBILITIES | SCOPE OF WORK | RESPONSIBILITY OF QUALITY CONTROL |
|--------------------------|--|---|
| Field Operations | Monitoring of Site Management Activities, sample collection and handling | A. Elbadri and A. Harrington, AMC Engineering |
| Project Manager | Implementation of the Remedial Action according to the RAWP | Ariel Czemerinski, AMC Engineering |
| Laboratory Analysis | Analysis of air samples by NYSDEC ASP methods Laboratory | NYSDEC-approved |
| Data Review | Review for completeness and compliance | 3 rd party validation |

2.0 QUALITY ASSURANCE PROJECT PLAN OBJECTIVES

2.1 Overview

Overall project goals are defined through the development of Data Quality Objectives (DQOs), which are qualitative and quantitative Statements that specify the quality of the data required to support decisions; DQOs, as described in this section, are based on the end uses of the data as described in the work plan.

In this plan, Quality Assurance and Quality Control are defined as follows:

- Quality Assurance - The overall integrated program for assuring reliability of monitoring and measurement data.
- Quality Control - The routine application of procedures for obtaining prescribed standards of performance in the monitoring and measurement process.

2.2 QA / QC Requirements for Analytical Laboratory

Samples will be analyzed by a New York State Department of Health (NYSDOH) certified laboratory. Data generated from the laboratory will be used to evaluate chlorinated and other volatile organic compounds (VOCs) in soil and indoor air. The QA requirements for all subcontracted analytical laboratory work performed on this project are described below. QA elements to be evaluated include accuracy, precision, sensitivity, representativeness, and completeness. The data generated by the analytical laboratory for this project is required to be sensitive enough to achieve detection levels low enough to meet required quantification limits as specified in NYSDEC Analytical Services Protocol (NYSDEC ASP, 07/2005). The analytical results meeting the required quantification limits will provide data sensitive enough to meet the data quality objectives of this remedial program as described in the work plan. Reporting of the data must be clear, concise, and comprehensive. The QC elements that are important to this project are completeness of field data, sample custody, sample holding times, sample preservation, sample storage, instrument calibration and blank contamination.

2.2.1 Instrument Calibration

Calibration curves will be developed for each of the compounds to be analyzed. Standard concentrations and a blank will be used to produce the initial curves. The development of calibration curves and initial calibration response factors must be consistent with method requirements presented in the most recent version of (NYSDEC ASP 07/2005). This task is conducted by the approved laboratory.

2.2.2 Continuing Instrument Calibration

The initial calibration curve will be verified every 12 hrs by analyzing one calibration standard. The standard concentration will be the midpoint concentration of the initial calibration curve. The calibration check compound must come within 25% relative percent difference (RPD) of the

average response factor obtained during initial calibration. If the RPD is greater than 25%, then corrective action must be taken as provided in the specific methodology.

2.2.3 Method Blanks

Method blank or preparation blank is prepared from an analyte free matrix which includes the same reagents, internal standards and surrogate standards as the related samples. It is carried through the entire sample preparation and analytical procedure. A method blank analysis will be performed once for each 12 hr period during the analysis of samples for volatiles. An acceptable method blank will contain less than two (2) times the CRQL of methylene chloride, acetone and 2-butanone. For all other target compounds, the method blank must contain less than or equal to the CRQL of any single target compound. For non-target peaks in the method blank, the peak area must be less than 10 percent of the nearest internal standard. The method blank will be used to demonstrate the level of laboratory background and reagent contamination that might result from the analytical process itself.

2.2.4 Trip Blanks

Trip blanks consist of a single set of sample containers filled at the laboratory with deionized laboratory-grade water. The water used will be from the same source as that used for the laboratory method blank. The containers will be carried into the field and handled and transported in the same way as the samples collected that day. Analysis of the trip blank for VOCs is used to identify contamination from the air, shipping containers, or from other items coming in contact with the sample bottles. (The bottles holding the trip blanks will be not opened during this procedure.) A complete set of trip blanks will be provided with each shipment of samples to the certified laboratory.

2.2.5 Surrogate Spike Analysis

For organic analyses, all samples and blanks will be spiked with surrogate compounds before purging or extraction in order to monitor preparation and analyses of samples. Surrogate spike recoveries shall fall within the advisory limits in accordance with the NY5DEC ASP protocols for samples falling within the quantification limits without dilution.

2.2.6 Matrix Spike / Matrix Spike Duplicate / Matrix Spike Blank (MS/MSDIMS) Analysis

MS, MSD and MSB analyses will be performed to evaluate the matrix effect of the sample upon the analytical methodology along with the precision of the instrument by measuring recoveries. The MS / MSD / MSB samples will be analyzed for each group of samples of a similar matrix at a rate of 5% (one for every 20 field samples). The RPD will be calculated from the difference between the MS and MSD. Matrix spike blank analysis will be performed to indicate the appropriateness of the spiking solution(s) used for the MS/MSD.

2.2.7 Sampling Procedures Soil Vapor

The sampling event will include the following:

- Collect a total of three sub-slab vapor samples
- Collect a total of thirty indoor ambient air samples

- Collect one outdoor ambient air samples
- Complete the New York State Department of Health Indoor Air Quality Questionnaire

See **Figure 1** and **Figure 9** for the proposed locations of the sub-slab, indoor air, and outdoor air sampling locations. The working copy of the New York State Department of Health Indoor Air Quality Questionnaire and Building Inventory is provided in **Attachment A**.

Air sampling will be performed over a 24-hour period to average the exposure condition and the building will be sealed (doors-windows closed) a minimum of 18 hours prior to collecting the samples. Air samples will be collected in accordance with NYSDOH protocols as presented in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (May 2017).

Indoor air samples will be collected in the breathing zone at a height of 5 feet above the floor. Sub-slab samples will be collected by drilling a $\frac{1}{2}$ inch hole with a handheld drill through the building slab, and then inserting a $\frac{1}{4}$ inch polyethylene tube to no more than 2 inches below the base of the slab. The tubing will be sealed at the surface with hydrated granular bentonite and a 4" x 4" (approx.) plastic sheet.

Prior to sample collection, the sub-slab sampling points will be purged of three sampler volumes using a handheld vacuum pump. The integrity of the seal will be tested using helium as a tracer gas. Seal testing will be completed by placing a plastic 5-gallon pail over the sampling point and running the sampling tube through a small opening in the pail to the exterior. Helium gas will then be introduced through a second small opening in the pail to saturate the atmosphere around the sample port with helium gas. The integrity of the surface seal will be confirmed prior to collecting the sample by connecting a portable helium detector to the sample tube for a period of 5 minutes. If helium is detected at high concentrations ($>10\%$) then the seal will be deemed inadequate and resealed and tested again until acceptable levels of helium are achieved.

All air samples will be collected with 6-liter Summa canisters equipped with flow controllers calibrated at an appropriate flow rate by the laboratory. The Summa canister identification number, flow regulator identification number and sample ID will be recorded in a bound field notebook. The sample ID will be recorded on the sample tag attached to each canister. Sampling will then be initiated by fully opening the flow control valve on each canister in turn. Immediately after opening the flow control valve on a canister, the initial vacuum (inches of mercury) and start time will be recorded in the field book and on the sample tag. When the vacuum level in the canister is between 5 and 8 inches of mercury (approximately 24 hours), the flow controller valve will be closed, and the final vacuum and time will be recorded in the field notebook and on the sample tag.

2.3 Accuracy

Accuracy is defined as the nearness of a real or the mean (\bar{x}) of a set of results to the true value.

Accuracy is assessed by means of reference samples and percent recoveries. Accuracy includes both precision and recovery and is expressed as percent recovery (% REC). The MS sample is used to determine the percent recovery. The matrix spike percent recovery (% REC) is calculated by the following equation:

$$\% REC = \frac{SSR - SR}{SA} \times 100$$

Where,

SSR = spike sample results

SR = sample results

SA = spike added from spiking mix

2.4 Precision

Precision is defined as the measurement of agreement of a set of replicate results among themselves without a Precision is defined as the measurement of agreement of a set of replicate results among themselves without assumption of any prior information as to the true result. Precision is assessed by means of duplicate/replicate sample analyses. Analytical precision is expressed in terms of RPD. The RPD is calculated using the following formula:

$$RPD = \frac{D^1 - D^2}{(D^1 + D^2)/2} \times 100$$

Where:

RPD = relative percent difference

D¹ = first sample value

D² = second sample value (duplicate)

2.5 Sensitivity

The sensitivity objectives for this plan require that data generated by the analytical laboratory achieve quantification levels low enough to meet the required detection limits specified by NYSDEC ASP and to meet all site-specific standards, criteria and guidance values (SGCs) established for this project.

2.6 Representativeness

Representativeness is a measure of the relationship of an individual sample taken from a particular site to the remainder of that site and the relationship of a small aliquot of the sample (i.e., the one used in the actual analysis) to the sample remaining on site. The representativeness of samples is assured by adherence to sampling procedures described in the Interim Remedial Measure Work Plan.

2.7 Completeness

Completeness is a measure of the quantity of data obtained from a measurement system as compared to the amount of data expected from the measurement system. Completeness is defined as the percentage of all results that are not affected by failing QC qualifiers and should be between 70 and 100% of all analyses performed. The objective of completeness in laboratory reporting is to provide a thorough data support package. The laboratory data package provides documentation of sample analysis and results in the form of summaries, QC data, and raw analytical data. The laboratory will be required to submit data packages that follow NYSDEC ASP reporting format which, at a minimum, will include the following components:

1. All sample chain-of-custody forms.
2. The case narrative(s) presenting a discussion of any problems and/or procedural changes required during analyses. Also presented in the case narrative are sample summary forms.
3. Documentation demonstrating the laboratory's ability to attain the contract specified detection limits for all target analytes in all required matrices.
4. Tabulated target compound results and tentatively identified compounds.
5. Surrogate spike analysis results (organics).
6. Matrix spike/matrix spike duplicate/matrix spike blank results.
7. QC check sample and standard recovery results
8. Blank results (field, trip, and method).
9. Internal standard area and RT summary.

2.8 Laboratory Custody Procedures

The following elements are important for maintaining the field custody of samples:

- Sample identification
- Sample labels
- Custody records
- Shipping records
- Packaging procedures

Sample labels will be attached to all sampling bottles before field activities begin; each label will contain an identifying number. Each number will have a suffix that identifies the site and where the sample was taken. Approximate sampling locations will be marked on a map with a description of the sample location. The number, type of sample, and sample identification will be entered into the field logbook. A chain-of-custody form, initiated at the analytical laboratory will accompany the sample bottles from the laboratory into the field. Upon receipt of the bottles and cooler, the sampler will sign and date the first received blank space. After each sample is collected and appropriately identified, entries will be made on the chain-of-custody form that will include:

- Site name and address
- Samplers' names and signatures

3.0 ANALYTICAL PROCEDURES

3.1 Laboratory Analysis

Samples will be analyzed by the NYSDOH ELAP laboratory for the following parameter: VOCs in air by USEPA Method TO15. If any modifications or additions to the standard procedures are anticipated, and if any nonstandard sample preparation or analytical protocol is to be used, the modifications and the nonstandard protocol will be explicitly defined and documented. Prior approval by AMC Engineering's PM will be necessary for any nonstandard analytical or sample preparation protocol used by the laboratory, i.e., dilution of samples or extracts by greater than a factor of five (5).

4.0 DATA REDUCTION, REVIEW, AND REPORTING

4.1 Overview

The process of data reduction, review, and reporting ensures the assessments or a conclusion based on the final data accurately reflects actual site conditions. This plan presents the specific procedures, methods, and format that will be employed for data reduction, review and reporting of each measurement parameter determined in the laboratory and field. Also described in this section is the process by which all data, reports, and work plans are proofed and checked for technical and numerical errors prior to final submission.

4.2 Data Reduction

Standard methods and references will be used as guidelines for data handling, reduction, validation, and reporting. All data for the project will be compiled and summarized with an independent verification at each step in the process to prevent transcription/typographical errors. Any computerized entry of data will also undergo verification review.

Sample analysis will be provided by a New York State certified environmental laboratory. Laboratory reports will include ASP category B deliverables for use in the preparation of a data usability summary report (DUSR). All results will be provided in accordance with the NYSDEC Environmental Information Management System (EIMS) electronic data deliverable (EDD) format. Analytical results shall be presented on standard NYSDEC ASP-B forms or equivalents, and include the dates the samples were received and analyzed, and the actual methodology used. Note that when waste characterization samples are analyzed they will be in results only format and will not be evaluated in the DUSR.

Laboratory QA/QC information required by the method protocols will be compiled, including the application of data QA/QC qualifiers as appropriate. In addition, laboratory worksheets, laboratory notebooks, chains-of-custody, instrument logs, standards records, calibration records, and maintenance records, as applicable, will be provided in the laboratory data packages to determine the validity of data. Specifics on internal laboratory data reduction protocols are identified in the laboratory's SOPs.

Following receipt of the laboratory analytical results by AMC Engineering, the data results will be compiled and presented in an appropriate tabular form. Where appropriate, the impacts of QA/QC qualifiers resulting from laboratory or external validation reviews will be assessed in terms of data usability.

4.3 Laboratory Data Reporting

All sample data packages submitted by the analytical laboratory will be required to be reported in conformance to the NYSDEC ASP (7/2005), Category B data deliverable requirements as applicable to the method utilized. All results will be provided in accordance with the NYSDEC

Environmental Information Management System (EIMS) electronic data deliverable (EDD) format. Note that waste characterization samples if analyzed will be in results only format and will not be evaluated in the DUSR.

5.0 CORRECTIVE ACTION

Review and implementation of systems and procedures may result in recommendations for corrective action. Any deviations from the specified procedures within approved project plans due to unexpected site-specific conditions shall warrant corrective action. All errors, deficiencies, or other problems shall be brought to the immediate attention of the AMC Engineering PM, who in turn shall contact the Quality Assurance/Data Quality Manager or his designee (if applicable).

Procedures have been established to ensure that conditions adverse to data quality are promptly investigated, evaluated and corrected. These procedures for review and implementation of a change are as follows:

- Define the problem.
- Investigate the cause of the problem.
- Develop a corrective action to eliminate the problem, in consultation with the personnel who defined the problem and who will implement the change.
- Complete the required form describing the change and its rationale (see below for form requirements).
- Obtain all required written approvals.
- Implement the corrective action.
- Verify that the change has eliminated the problem.

During the field investigation, all changes to the sampling program will be documented in field logs/sheets and the AMC Engineering PM advised.

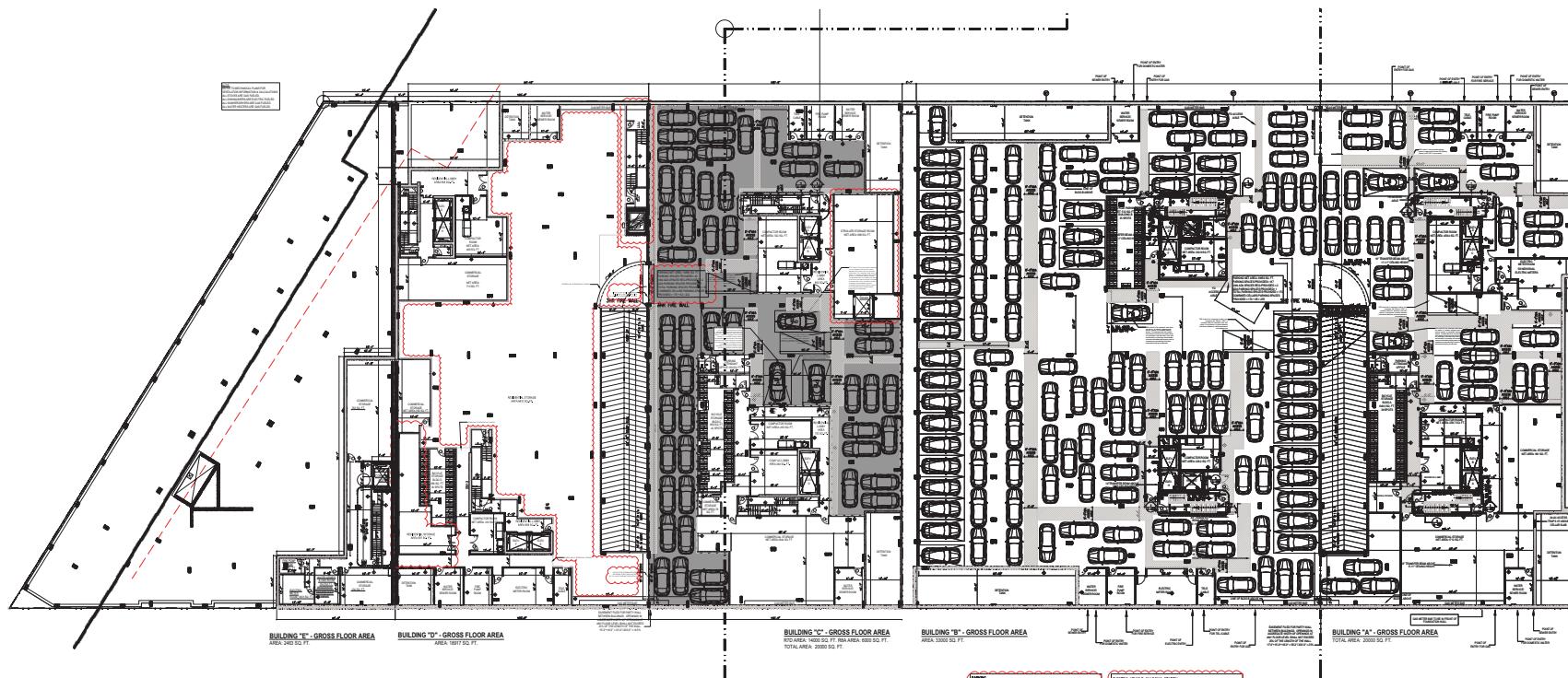
If any problems occur with the laboratory or analyses, the laboratory must immediately notify the PM, who will consult with other project staff. All approved corrective actions shall be controlled and documented.

All corrective action documentation shall include an explanation of the problem and a proposed solution which will be maintained in the project file or associated logs. Each report must be approved by the necessary personnel (e.g., the PM) before implementation of the change occurs. The PM shall be responsible for controlling, tracking, implementing and distributing identified changes.

Figures

SAMPLING PLAN

| Building | Subslab Sample | | | Indoor Air (Basement) | | | Indoor Air (lowest Com) | | | Indoor Air (lowest Res) | | | Outdoor Air | | |
|----------|----------------|----|----------|-----------------------|-----------------------|-------------|-------------------------|------------------------|-----|-------------------------|--------------------|----------|-------------|----|----------|
| | Figure# | ID | Location | Figure# | ID | Location | Figure# | ID | Use | Figure# | ID | Location | Figure# | ID | Location |
| A | | | | 25IA-A1 | Garage NE | | 25IA-A2 | Retail N (Wallabout) | | 25IA-A3 | Dining Rm NE | | | | |
| B | | | | 25IA-A4 | Res Storage SE | | 25IA-A5 | Retail E (Harrison) | | 25IA-A6 | Bedroom1 Center | | | | |
| C | | | | 25IA-B1 | Garage N | | 25IA-B2 | Retail W | | 25IA-B3 | Bedroom3 NW | | | | |
| D | | | | 25IA-B4 | Elec. Mtr Rm S | | 25IA-B5 | Loading Berth | | 25IA-B6 | Kitchen Center | | | | |
| E | 8 | | | 25IA-C1 | Fire Pump Rm N | | 25IA-C2 | Commun. Fac. Lobby | | 25IA-C3 | Bathroom 3-Apt C-5 | | | | |
| | | | | 25IA-C4 | Res Lobby S | | 25IA-C5 | Retail Center | | 25IA-C6 | Laundry-Apt G-3 | | | | |
| | | | | 25IA-D1 | Res Lobby N | | 25IA-D2 | Retail NW | | 25IA-D3 | Bathroom 1-Apt B-3 | | | | |
| Outdoor | | | | 25IA-D4 | Hallway S | | 25IA-D5 | Hallway School S | | 25IA-D6 | Bedroom1-Apt F-5 | | | | |
| | 8 | | | 25IA-E1 | Retail (South) | | 25IA-E2 | SW Apt-Kitchen Apt O-3 | | 25IA-E3 | Retail (Center) | | | | |
| | | | | 25IA-E4 | Center Apt-LR Apt I-1 | | 25IA-E5 | Retail (North) | | 25IA-E6 | N Apt-LR Apt E-2 | | | | |
| | | | | 6 | OA-1 | Gerry St@ D | | | | | | | | | |



Building E

Building D

Building C

Building B

Building A

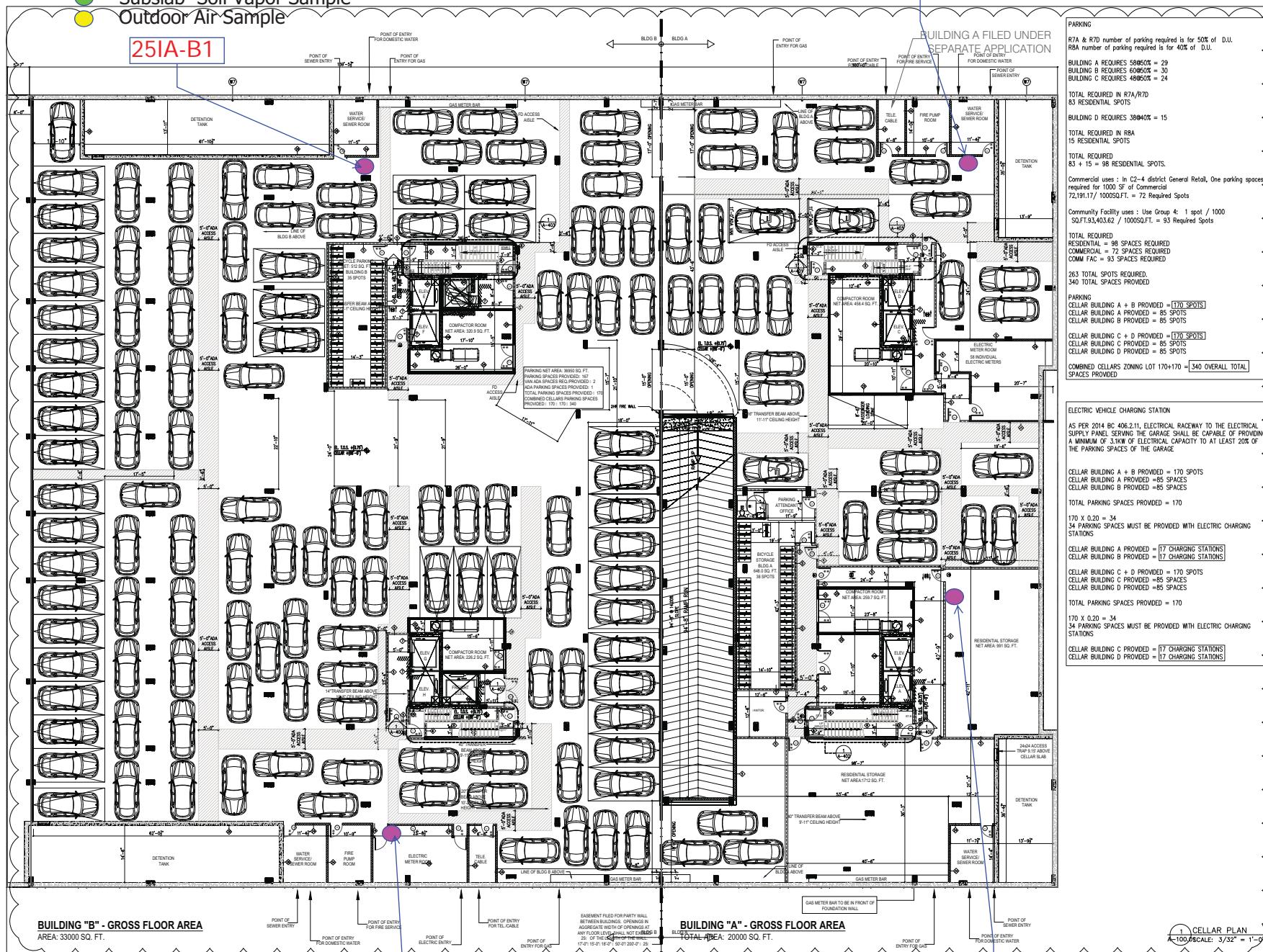
NB#

| | | | |
|---------|-------------|-------------|--------|
| scale | 3/64"=1'-0" | project no. | 20-20 |
| date | APR. 2018 | sheet no. | OF --- |
| drawn | CL | drawing no. | |
| checked | HW | | A-100A |

FIGURE 1

LEGEND

Indoor Air - Third Floor-Lowest Residential Occupied Space
Indoor Air Sample - First Floor Commercial
Indoor Air Sample - Basement (Cellar)
Subslab Soil Vapor Sample



BUILDING B - CELLAR PLAN

25IA-B4

BUILDING A - CELLAR PLAN

25IA-A

FIGURE 2

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample

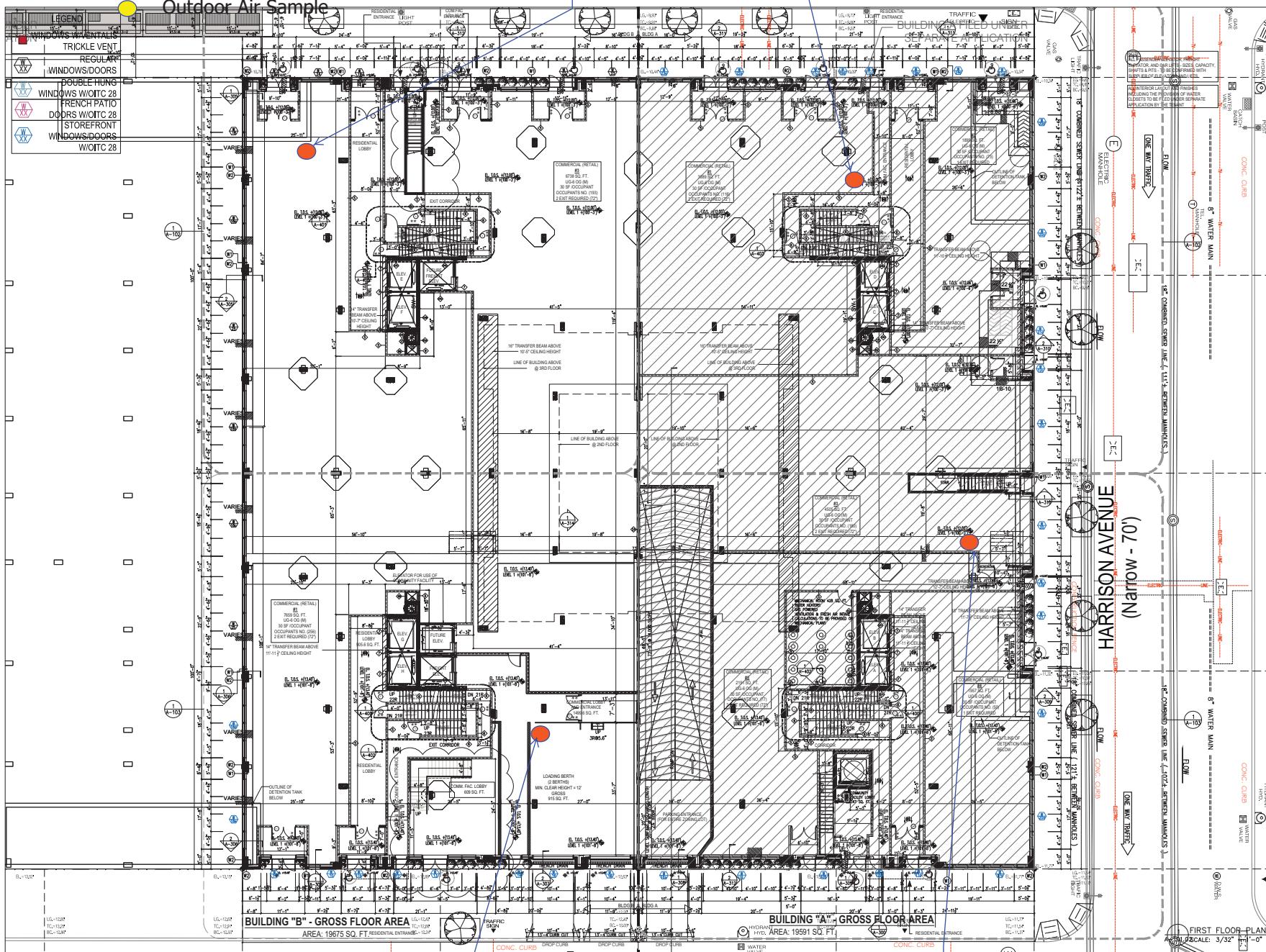


FIGURE 3

LEGEND

Indoor Air - Third Floor-Lowest Residential Occupied Space
Indoor Air Sample - First Floor Commercial
Indoor Air Sample - Basement (Cellar)
Subslab Soil Vapor Sample
Outdoor Air Sample

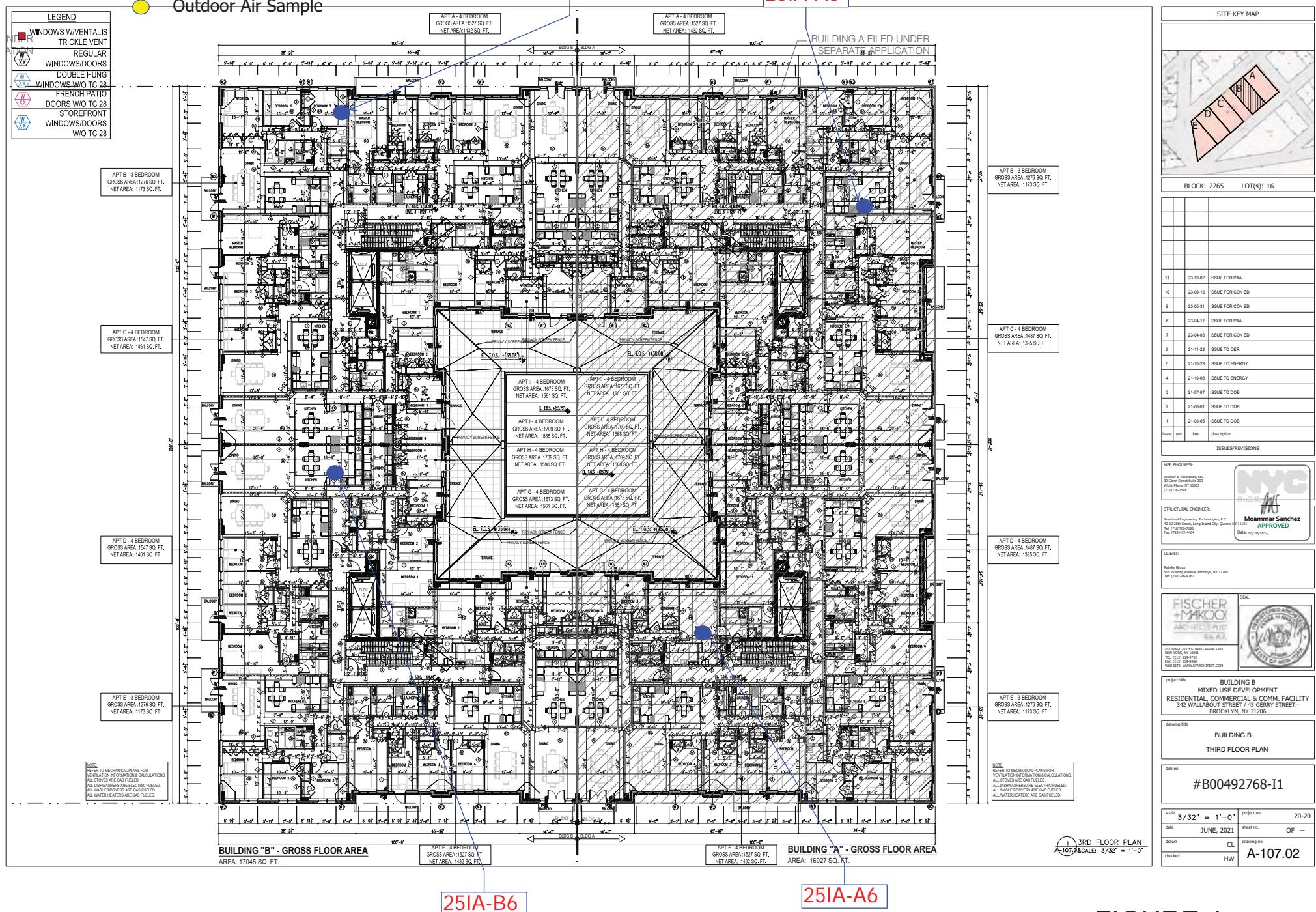


FIGURE 4

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample

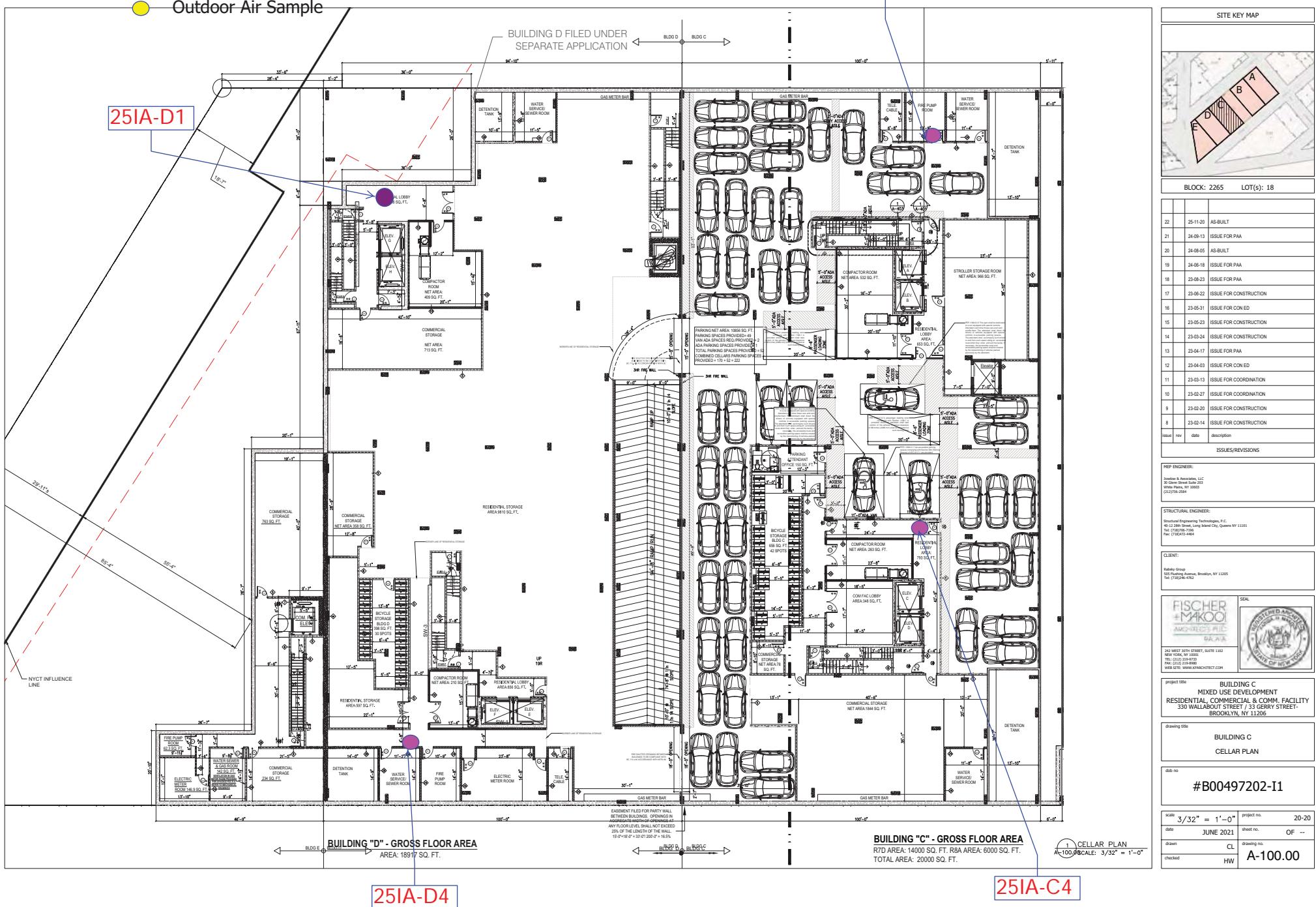
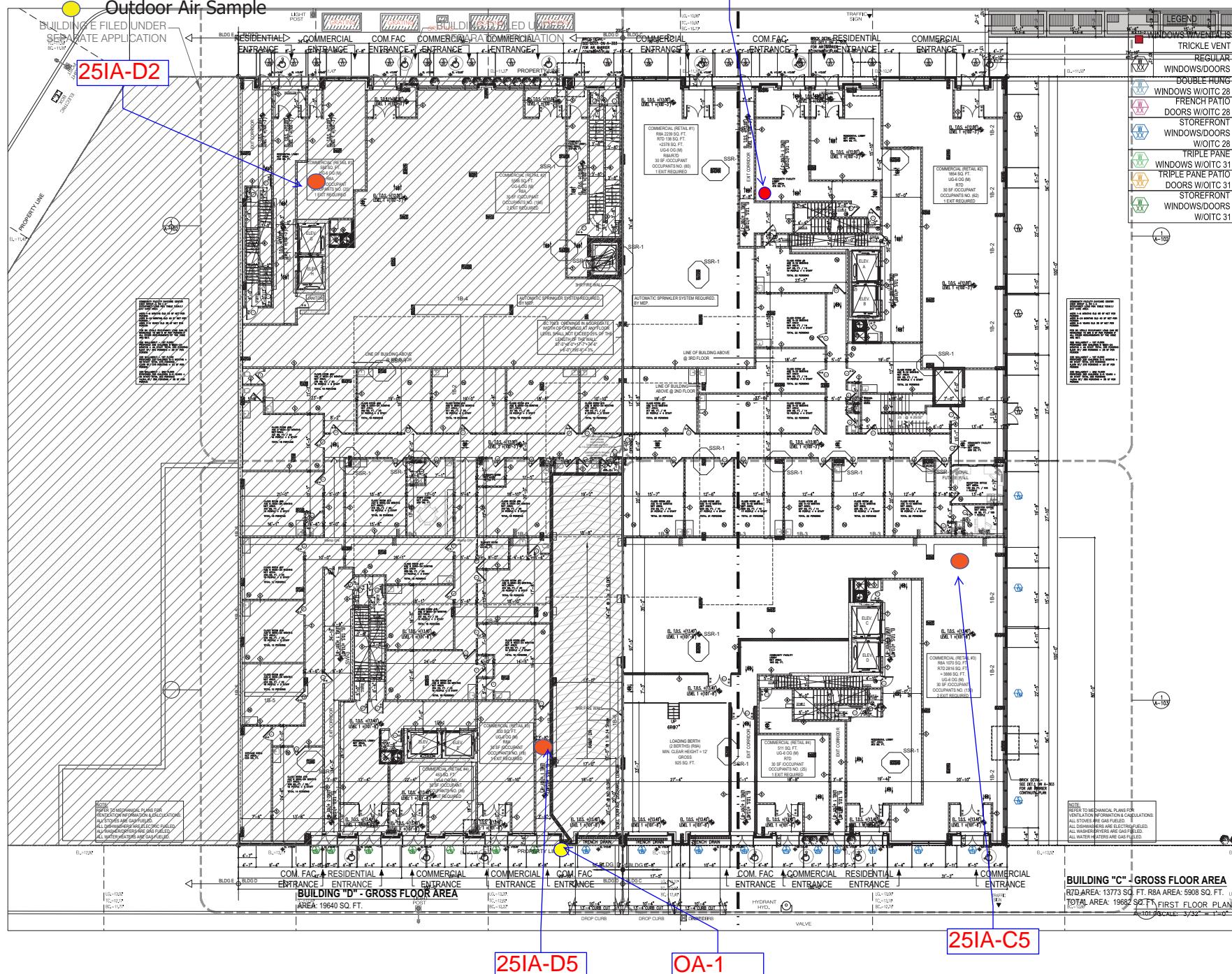


FIGURE 5

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample



| SITE KEY MAP | |
|------------------------------------|---------------------------------|
| | A |
| | B |
| | C |
| | D |
| | E |
| | F |
| BLOCK: 2265 LOT(s): 18 | |
| 22 | 25-11-20 AS-BUILT |
| 21 | 24-09-13 ISSUE FOR PAA |
| 20 | 24-08-05 AS-BUILT |
| 19 | 24-08-18 ISSUE FOR PAA |
| 18 | 23-08-23 ISSUE FOR PAA |
| 17 | 23-06-22 ISSUE FOR CONSTRUCTION |
| 16 | 23-05-31 ISSUE FOR CON ED |
| 15 | 23-05-23 ISSUE FOR CONSTRUCTION |
| 14 | 23-03-24 ISSUE FOR CONSTRUCTION |
| 13 | 23-04-17 ISSUE FOR PAA |
| 12 | 23-04-03 ISSUE FOR CON ED |
| 11 | 23-03-13 ISSUE FOR COORDINATION |
| 10 | 23-02-27 ISSUE FOR COORDINATION |
| 9 | 23-02-20 ISSUE FOR CONSTRUCTION |
| 8 | 23-02-14 ISSUE FOR CONSTRUCTION |
| issue | rev |
| date | description |
| ISSUES/REVISIONS | |
| MEP ENGINEER: | |
| STRUCTURAL ENGINEER: | |
| CLIENT: | |
| FISCHER & MAKOOI | |
| ARCHITECTURE PLLC | |
| DA-PA | |
| 20 WEST 42ND STREET, SUITE 1302 | |
| NEW YORK, NY 10036 | |
| Tel: (212) 213-8800 | |
| Fax: (212) 213-4464 | |
| Web Site: www.fischerarchitect.com | |

FIGURE 6

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample

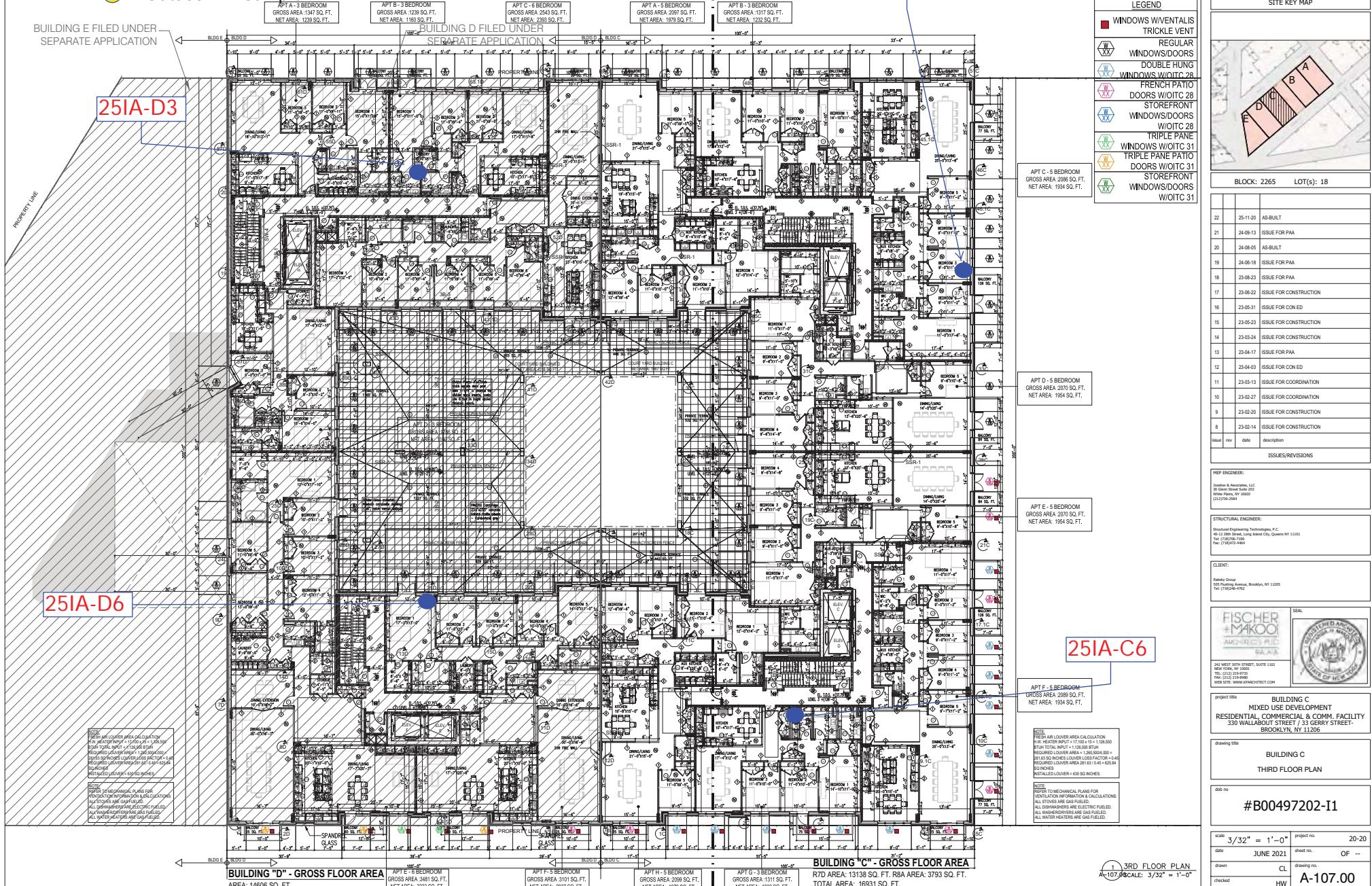


FIGURE 7

LEGEND

Indoor Air - Third Floor-Lowest Residential Occupied Space
Indoor Air Sample - First Floor Commercial
Indoor Air Sample - Basement (Cellar)
Subslab Soil Vapor Sample
Outdoor Air Sample

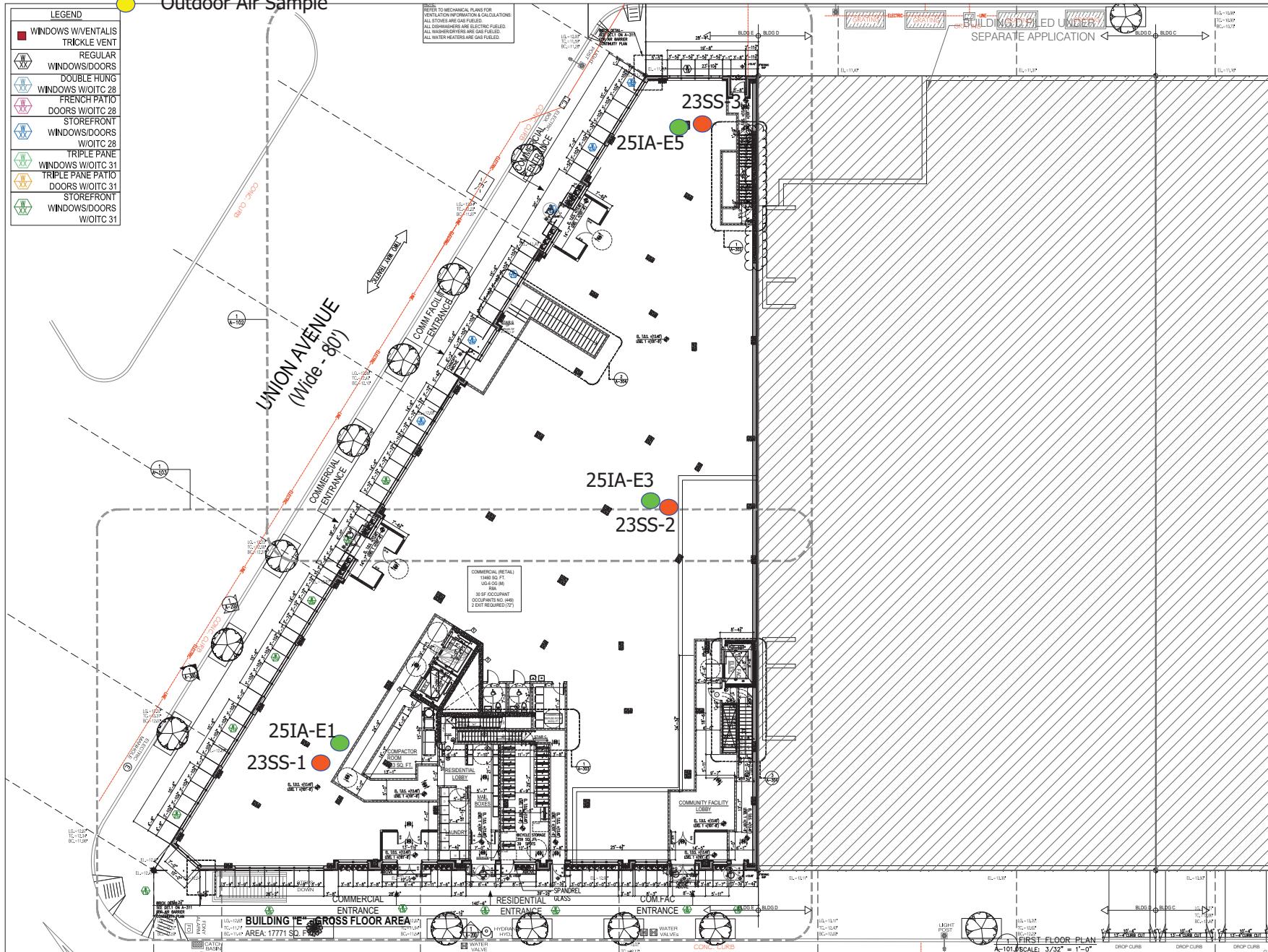


FIGURE 8

LEGEND

- Indoor Air - Third Floor-Lowest Residential Occupied Space
- Indoor Air Sample - First Floor Commercial
- Indoor Air Sample - Basement (Cellar)
- Subslab Soil Vapor Sample
- Outdoor Air Sample



FIGURE 9

Attachment

**NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH**

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No. _____

Purpose of Investigation _____

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ____)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential
Industrial

School
Church

Commercial/Multi-use
Other: _____

If the property is residential, type? (Circle appropriate response)

| | | |
|--------------|-----------------|-------------------|
| Ranch | 2-Family | 3-Family |
| Raised Ranch | Split Level | Colonial |
| Cape Cod | Contemporary | Mobile Home |
| Duplex | Apartment House | Townhouses/Condos |
| Modular | Log Home | Other: _____ |

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors_____

Building age_____

Is the building insulated? Y / N

How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

| | | | | |
|-------------------------------------|------------------------|------------|--------------------|-------------|
| a. Above grade construction: | wood frame | concrete | stone | brick |
| b. Basement type: | full | crawlspac | slab | other _____ |
| c. Basement floor: | concrete | dirt | stone | other _____ |
| d. Basement floor: | uncovered | covered | covered with _____ | |
| e. Concrete floor: | unsealed | sealed | sealed with _____ | |
| f. Foundation walls: | poured | block | stone | other _____ |
| g. Foundation walls: | unsealed | sealed | sealed with _____ | |
| h. The basement is: | wet | damp | dry | moldy |
| i. The basement is: | finished | unfinished | partially finished | |
| j. Sump present? | Y / N | | | |
| k. Water in sump? | Y / N / not applicable | | | |

Basement/Lowest level depth below grade: _____ (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

| | | |
|---------------------|------------------|---------------------|
| Hot air circulation | Heat pump | Hot water baseboard |
| Space Heaters | Stream radiation | Radiant floor |
| Electric baseboard | Wood stove | Outdoor wood boiler |
| | | Other _____ |

The primary type of fuel used is:

| | | |
|-------------|----------|----------|
| Natural Gas | Fuel Oil | Kerosene |
| Electric | Propane | Solar |
| Wood | Coal | |

Domestic hot water tank fueled by: _____

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: Central Air Window units Open Windows None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

| <u>Level</u> | <u>General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)</u> |
|--------------|--|
|--------------|--|

Basement _____

1st Floor _____

2nd Floor _____

3rd Floor _____

4th Floor _____

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage? Y / N
- b. Does the garage have a separate heating unit? Y / N / NA
- c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA
Please specify _____
- d. Has the building ever had a fire? Y / N When? _____
- e. Is a kerosene or unvented gas space heater present? Y / N Where? _____
- f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____
- g. Is there smoking in the building? Y / N How frequently? _____
- h. Have cleaning products been used recently? Y / N When & Type? _____
- i. Have cosmetic products been used recently? Y / N When & Type? _____

j. Has painting/staining been done in the last 6 months? Y / N Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____

l. Have air fresheners been used recently? Y / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / N If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / N If yes, where vented? _____

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When & Type? _____

Are there odors in the building? Y / N
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

| | |
|--|---------|
| Yes, use dry-cleaning regularly (weekly) | No |
| Yes, use dry-cleaning infrequently (monthly or less) | Unknown |
| Yes, work at a dry-cleaning service | |

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _____

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

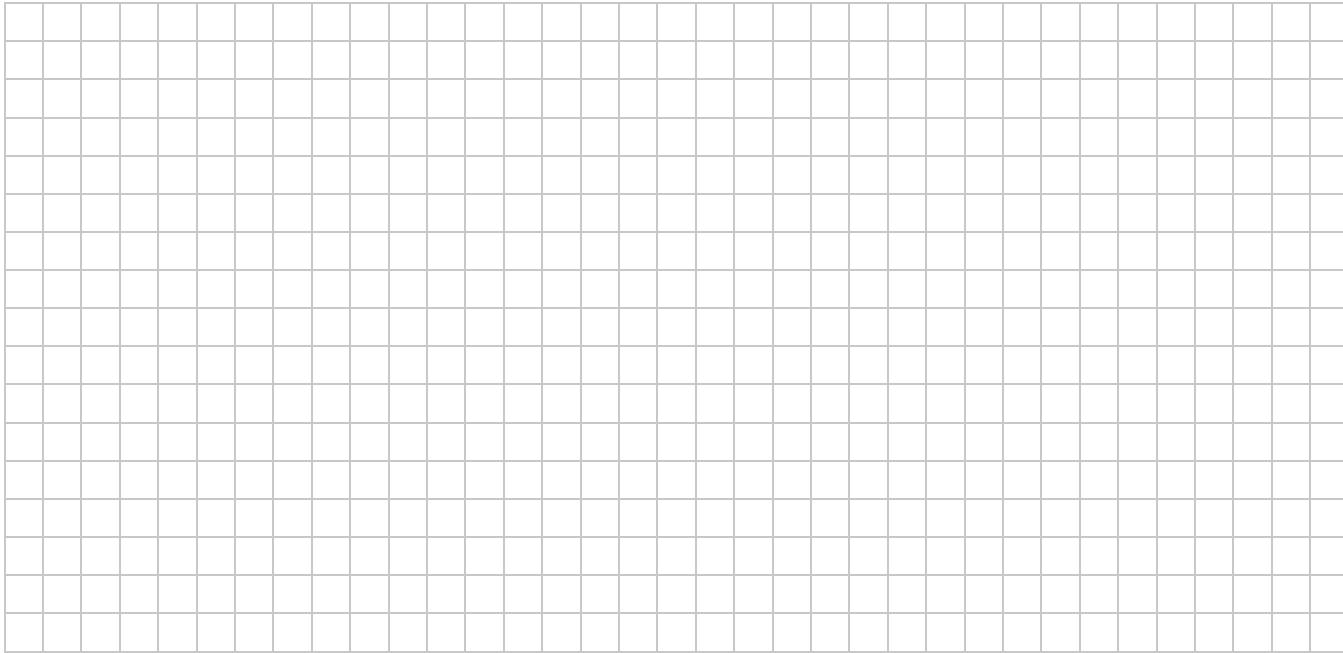
c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

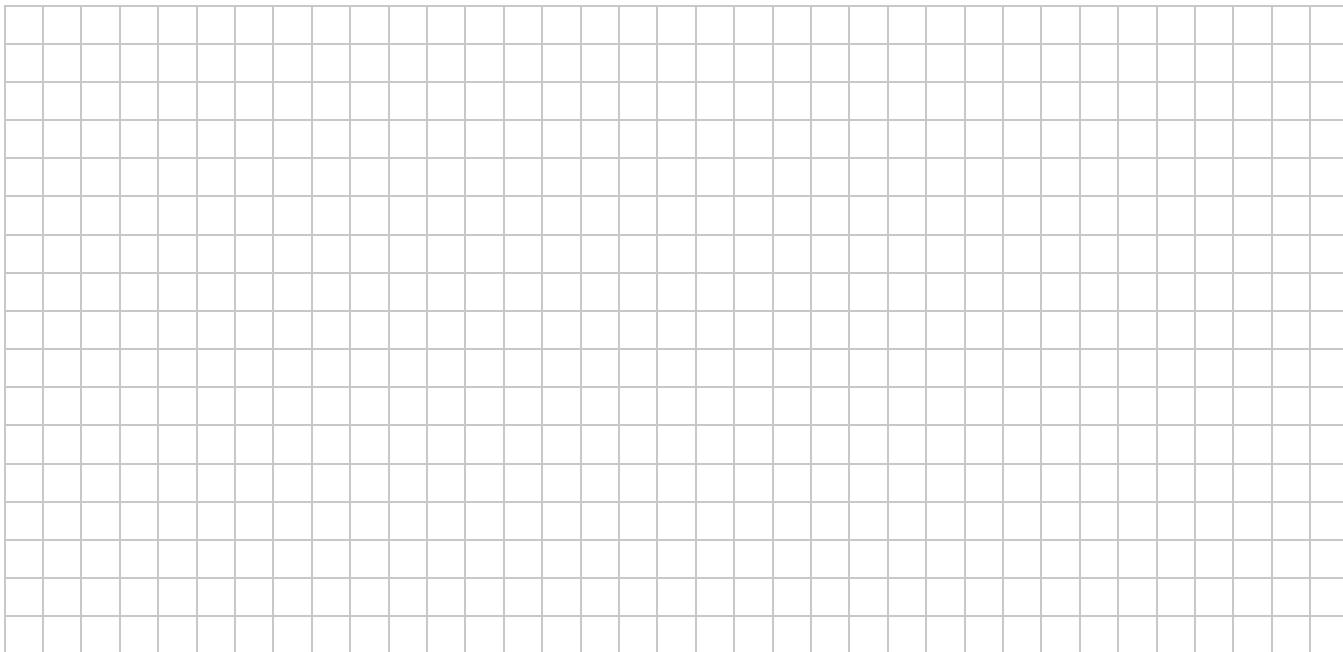
11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



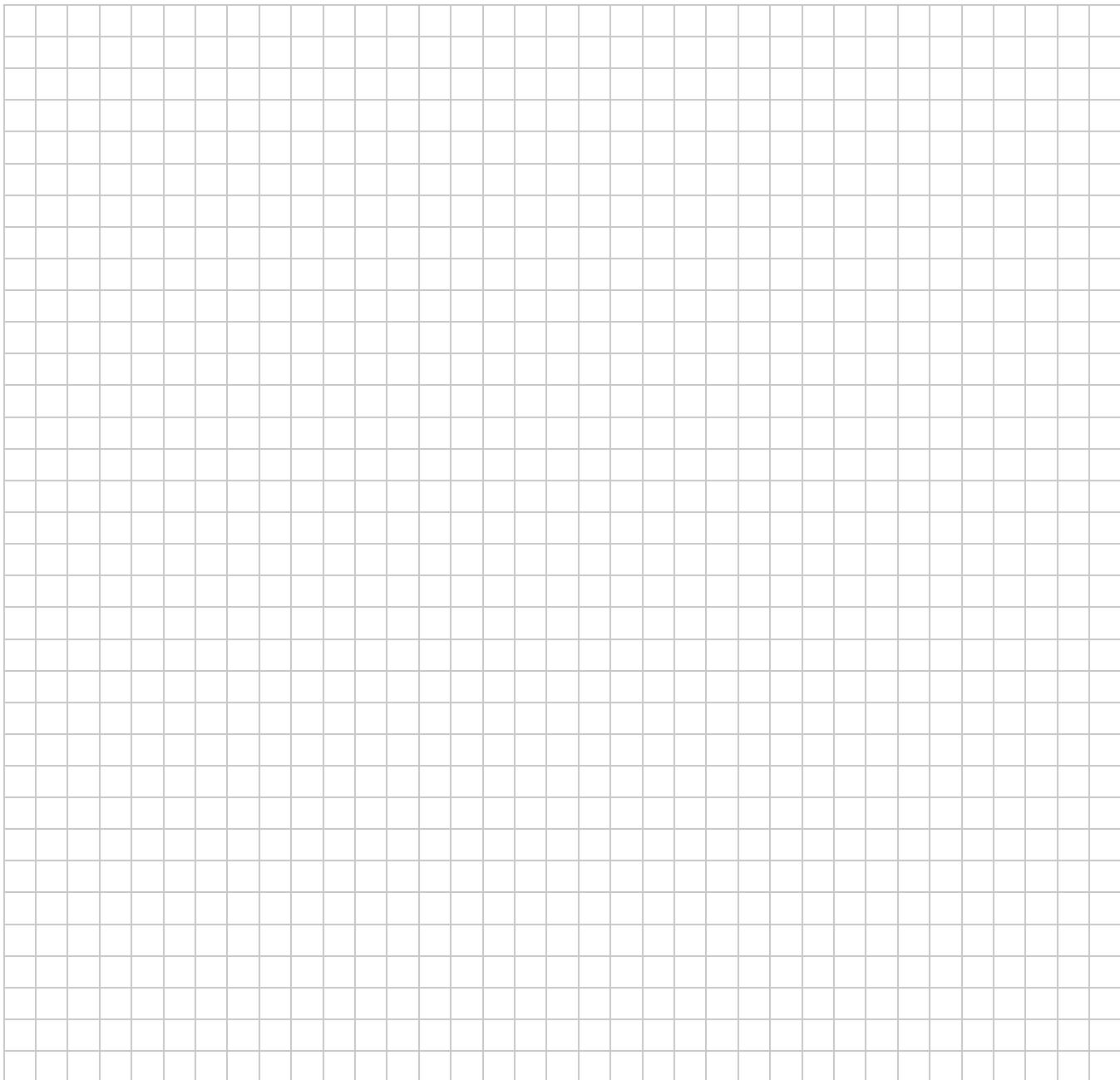
First Floor:



12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**

** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.



Attachment 3

NYSDOH Indoor Air Quality Questionnaire and Building Inventory

**NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH**

This form must be completed for each residence involved in indoor air testing.

Preparer's Name _____ Date/Time Prepared _____

Preparer's Affiliation _____ Phone No. _____

Purpose of Investigation _____

1. OCCUPANT:

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

Number of Occupants/persons at this location _____ Age of Occupants _____

2. OWNER OR LANDLORD: (Check if same as occupant ____)

Interviewed: Y / N

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential
Industrial

School
Church

Commercial/Multi-use
Other: _____

If the property is residential, type? (Circle appropriate response)

| | | |
|--------------|-----------------|-------------------|
| Ranch | 2-Family | 3-Family |
| Raised Ranch | Split Level | Colonial |
| Cape Cod | Contemporary | Mobile Home |
| Duplex | Apartment House | Townhouses/Condos |
| Modular | Log Home | Other: _____ |

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) _____

Does it include residences (i.e., multi-use)? Y / N If yes, how many? _____

Other characteristics:

Number of floors_____

Building age_____

Is the building insulated? Y / N

How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

| | | | | |
|-------------------------------------|------------------------|------------|--------------------|-------------|
| a. Above grade construction: | wood frame | concrete | stone | brick |
| b. Basement type: | full | crawlspac | slab | other _____ |
| c. Basement floor: | concrete | dirt | stone | other _____ |
| d. Basement floor: | uncovered | covered | covered with _____ | |
| e. Concrete floor: | unsealed | sealed | sealed with _____ | |
| f. Foundation walls: | poured | block | stone | other _____ |
| g. Foundation walls: | unsealed | sealed | sealed with _____ | |
| h. The basement is: | wet | damp | dry | moldy |
| i. The basement is: | finished | unfinished | partially finished | |
| j. Sump present? | Y / N | | | |
| k. Water in sump? | Y / N / not applicable | | | |

Basement/Lowest level depth below grade: _____ (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

| | | |
|---------------------|------------------|---------------------|
| Hot air circulation | Heat pump | Hot water baseboard |
| Space Heaters | Stream radiation | Radiant floor |
| Electric baseboard | Wood stove | Outdoor wood boiler |
| | | Other _____ |

The primary type of fuel used is:

| | | |
|-------------|----------|----------|
| Natural Gas | Fuel Oil | Kerosene |
| Electric | Propane | Solar |
| Wood | Coal | |

Domestic hot water tank fueled by: _____

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: Central Air Window units Open Windows None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

| <u>Level</u> | <u>General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)</u> |
|--------------|--|
|--------------|--|

| | |
|-----------------------|-------|
| Basement | _____ |
| 1 st Floor | _____ |
| 2 nd Floor | _____ |
| 3 rd Floor | _____ |
| 4 th Floor | _____ |

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage? Y / N
- b. Does the garage have a separate heating unit? Y / N / NA
- c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA
Please specify _____
- d. Has the building ever had a fire? Y / N When? _____
- e. Is a kerosene or unvented gas space heater present? Y / N Where? _____
- f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____
- g. Is there smoking in the building? Y / N How frequently? _____
- h. Have cleaning products been used recently? Y / N When & Type? _____
- i. Have cosmetic products been used recently? Y / N When & Type? _____

j. Has painting/staining been done in the last 6 months? Y / N Where & When? _____

k. Is there new carpet, drapes or other textiles? Y / N Where & When? _____

l. Have air fresheners been used recently? Y / N When & Type? _____

m. Is there a kitchen exhaust fan? Y / N If yes, where vented? _____

n. Is there a bathroom exhaust fan? Y / N If yes, where vented? _____

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When & Type? _____

Are there odors in the building? Y / N
If yes, please describe: _____

Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? _____

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

| | |
|--|---------|
| Yes, use dry-cleaning regularly (weekly) | No |
| Yes, use dry-cleaning infrequently (monthly or less) | Unknown |
| Yes, work at a dry-cleaning service | |

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: _____
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

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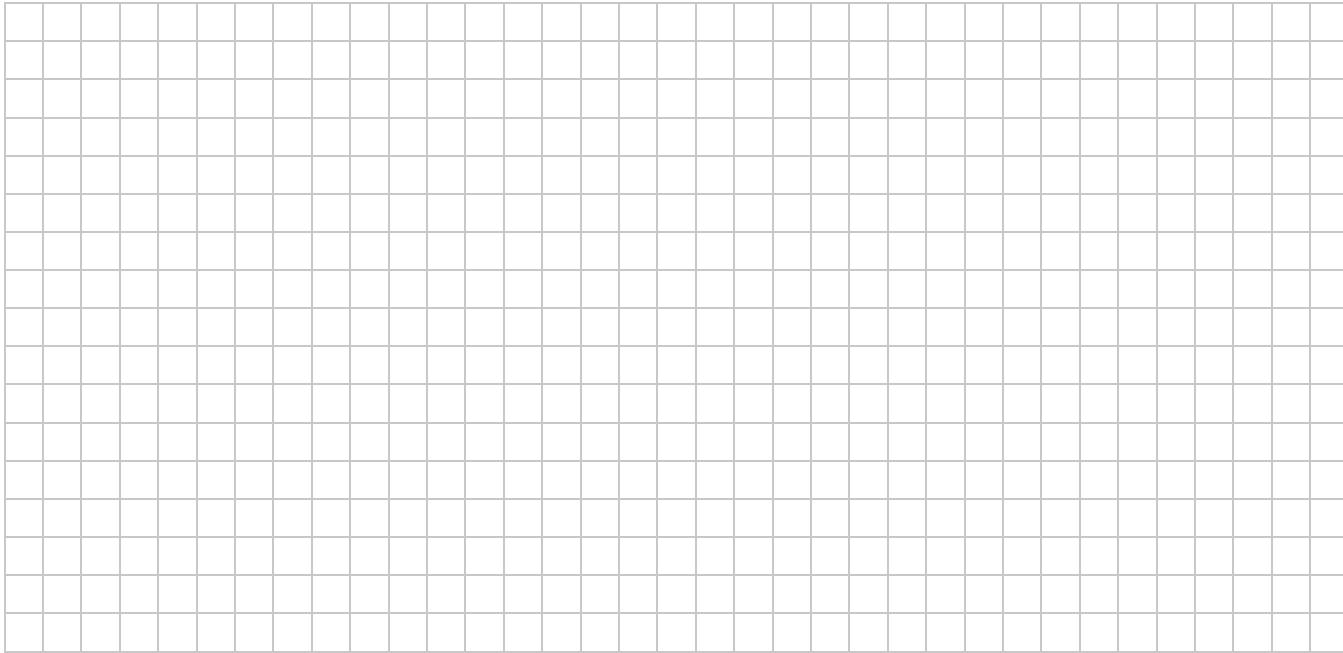
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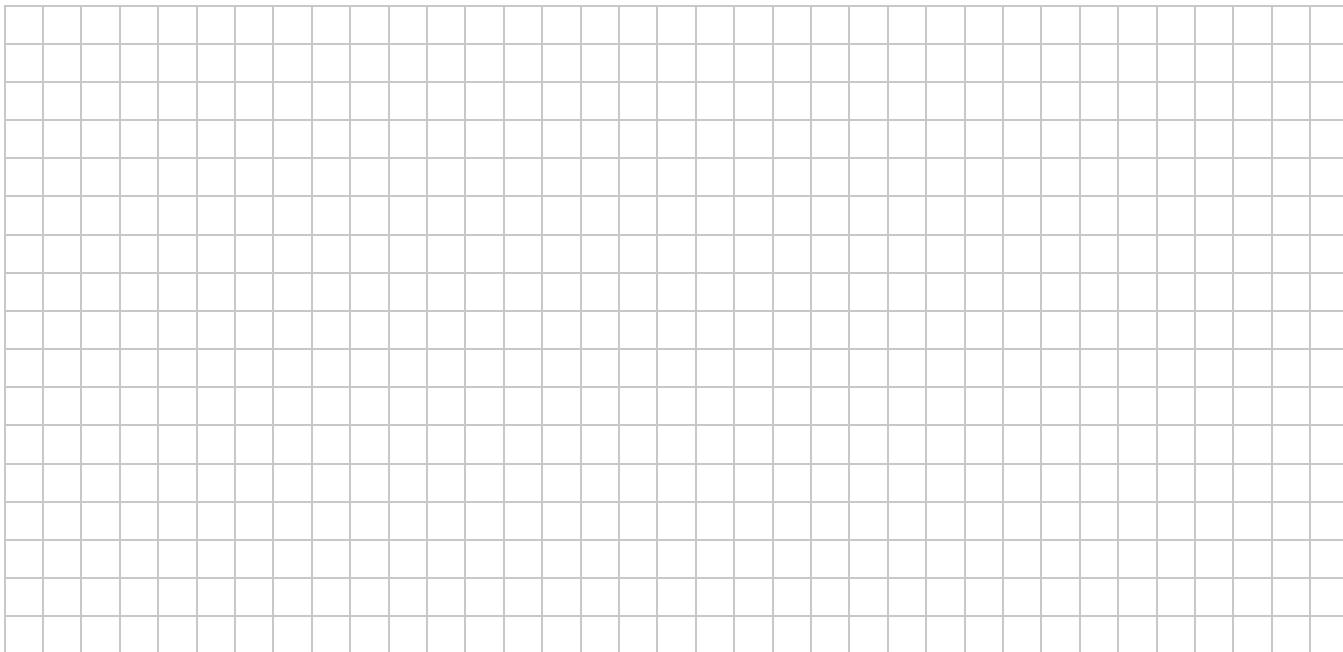
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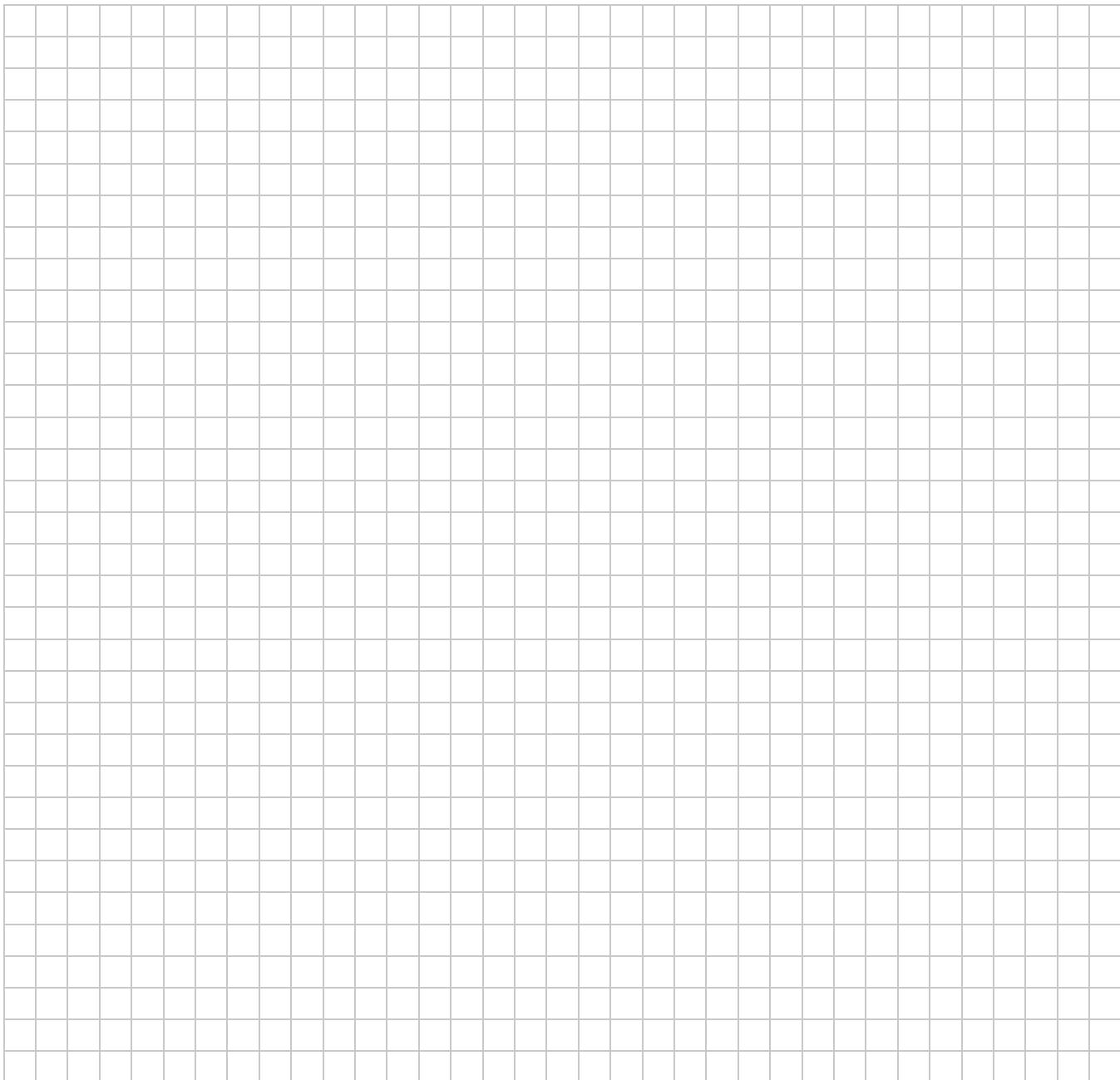
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