LANGAN

Memorandum

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
368 Ninth Avenue, 8th Floor New York, NY 10001 T: 212.479.5400 F: 212.479.5444

To: Haala Al Hadithy – New York State Department of Environmental Conservation

From: Gerald Nicholls P.E. – Langan

Info: Montrose Meserole Borrower LLC
Andre Obligado, P.G., Wendi Zheng, P.E. – NYSDEC
Kimberly Semon, P.E., Ronald Lombino, Caroline Devin – Langan

Date: July 24, 2026

Re: Submembrane Depressurization System Design Plan
172 Montrose Avenue (the "site")
Brooklyn, New York
NYSDEC BCP Site No: C224417
Langan Project No: 170824801

This remedial design plan was prepared on behalf of Montrose Meserole Borrower LLC (the Participant) for the property at 172 Montrose Avenue in Brooklyn, New York (the "site") and includes the proposed submembrane depressurization (SMD) system design and SMD efficacy testing. The site is being remediated under a Track 2 remedy in accordance with the New York State Department of Environmental Conservation (NYSDEC)-approved May 2026 Remedial Action Work Plan (RAWP). The SMD system will be constructed during site development and will be activated to allow for building occupancy. The SMD efficacy testing will be completed following receipt of the Certificate of Completion (COC) and system startup, but prior to occupancy.

SMD SYSTEM

The SMD system will depressurize the building by conveying a low vacuum field beneath the floor slab and then safely exhaust extracted air above the building roof via a fan assembly. This low vacuum field reverses the potential natural pressure gradient and diverts potentially impacted vapors from the subsurface of the building to the atmosphere above its rooftop, and, in conjunction with a vapor barrier mechanically bonded to a reinforced concrete slab, eliminates the potential for vapor intrusion. Depressurization is not required in areas outside of the building's footprint on the property (i.e., the exterior rear yard).

Two contiguous networks of submembrane collection pipes constructed of 4-inch-diameter, schedule 80 polyvinyl chloride (PVC) perforated piping embedded in 8-inches of continuous 0.75-inch virgin stone comprise the subslab vapor collection system. The perforated piping sections will connect to 4-inch-diameter solid schedule 80 PVC piping that will connect to a solid 4-inch-diameter metal riser pipe. The piping will be installed beneath the foundation slab within a

continuous permeable aggregate layer across the area consisting of 0.75-inch virgin stone placed above a geotextile fabric. The aggregate layer will be covered by a vapor barrier/waterproofing membrane system. The vapor barrier/waterproofing membrane will extend laterally under the entire building footprint and vertically around the sub-grade portions of the perimeter foundation walls. The subslab piping system connects to a 4-inch-diameter metal riser pipe (per NYC Building and Mechanical Code) that will penetrate the building's slab and direct soil vapor to blowers on the building roof. The rooftop blower will be the OBAR GBR76-UD120-19 or approved alternative. There is no proposed accessory or recreational space near the exhaust locations, and the SMD system exhaust points will be located at least 10 feet from air intakes or operable windows. The SMD system will be equipped with a visual alarm placed in a building maintenance office to notify of a potential system failure. Three vacuum monitoring points (VMP-1 to VMP-3) will be installed within the gravel layer and accessible via a secured port in the building slab during building construction.

The design for the SMD system is based on the United States Environmental Protection Agency (USEPA) document EPA/625/R-92/016 for the sub-slab depressurization of large buildings and schools, New York City Mechanical Code Section MC 512 (2022), American Association of Radon Scientists and Technologists (AARST) Soil Gas Mitigation Standards for existing Multifamily, School, Commercial and Mixed-Use Buildings (2023), and the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (February 2024), "NYSDOH SVI Guidance". The SMD system design is included in Appendix A. The SMD system blower specifications are included in Appendix B. Start-up testing and performance monitoring activities will be outlined in the monitoring plan of a forthcoming Site Management Plan (SMP).

SMD EFFICACY TESTING

SMD efficacy testing will be completed during the site management phase, after system start-up, but prior to building occupancy. The testing event will include pressure testing at each of the vapor monitoring points (VMP-1 through VMP-3) to ensure adequate vacuum beneath the building slab. Indoor air samples (IA-01 though IA-03) will also be collected from throughout the lowest occupied level of building to evaluate efficacy of the SMD system and post-mitigation indoor air quality. A work plan showing approximate sample locations and sampling methodology for indoor air sampling and pressure testing will be prepared and submitted to NYSDEC and NYSDOH for review prior to initiating the testing and sampling event. The results and recommendations of the event will be summarized in a memorandum that will be submitted to NYSDEC and NYSDOH for review and approval.

CERTIFICATION

I, Gerald Nicholls, PE, certify that I am currently a NYS registered professional engineer as defined in 6 New York Codes, Rules and Regulations (NYCRR) Part 375 and that this Technical Memorandum was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

DRAFT

NYS Professional Engineer 092433	Date	Signature

Appendices

Appendix A: SMD System Drawings
Appendix B: SMD System Blower Specifications

APPENDIX A
SMD SYSTEM DRAWINGS

GENERAL NOTES

1. SCOPE OF WORK INCLUDES THE INSTALLATION OF A SUB-MEMBRANE DEPRESSURIZATION (SMD) SYSTEM IN CONJUNCTION WITH DOB NOW JOB NUMBER B01283545-S9.
2. THE COMPONENTS SHOWN IN THE DRAWING SET ARE NOT TO SURVEYED COORDINATES. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATIONS AND LAYOUT OF THE SMD SYSTEM COMPONENTS IN THE FIELD BASED ON ACTUAL SITE CONDITIONS AND OTHER PROPOSED WORK.
3. DRAWING SET NOT TO BE USED FOR STRUCTURAL, ARCHITECTURAL, OR OTHER REFERENCE EXCEPT FOR SMD SYSTEM.
4. COORDINATE ALL WORK FOR THE SMD SYSTEM, WATERPROOFING/VAPOR BARRIER (WP/VB), AND ROOF PENETRATIONS WITH OTHER TRADES PRIOR TO INSTALLATION.
5. INSULATION NOT SHOWN. REFER TO ARCHITECTURAL DRAWINGS FOR INSULATION REQUIREMENTS, IF PLANNED.
6. ANY DEVIATION FROM THIS DESIGN MUST BE SUBMITTED TO THE OWNER AND ENGINEER OF RECORD (EOR) FOR APPROVAL.
7. INSTALLATION OF THE SMD SYSTEM COMPONENTS AND RISER PIPE MUST BE COORDINATED WITH THE INSTALLATION OF OTHER UTILITIES AND STRUCTURAL COMPONENTS.
8. INSTALLATION OF THE SMD SYSTEM COMPONENTS, TESTING (I.E., PRESSURE TESTING), AND START-UP SHALL BE COMPLETED UNDER THE OVERSIGHT OF THE EOR.
9. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED AND MAINTAINED BY NATIONAL GEODETIC SURVEY OF THE NATIONAL OCEAN SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION OR SUCCESSOR AGENCY.
10. IT IS ASSUMED THAT ALL INTERIOR SPACE AIR PRESSURES WILL BE BALANCED OR POSITIVELY PRESSURIZED WITH VENTILATION SYSTEMS AND THE INDOOR AIR PRESSURE WILL NOT EXHIBIT ANY NEGATIVE PRESSURE WITHIN THE INDOOR BUILDING AIR.
11. NO SUB-SLAB PIPING SHALL BE COVERED POST INSTALLATION UNTIL IT HAS BEEN INSPECTED BY LANGAN AND SURVEYED BY THE CONTRACTOR.
12. ALL HEATING, VENTILATION, AIR CONDITIONING (HVAC), PLUMBING, ELECTRICAL AND OTHER SERVICES FACILITIES AND EQUIPMENT WITHIN THE STRUCTURE OR SITE WILL BE LOCATED OR CONSTRUCTED SO AS TO PREVENT WATER FROM ENTERING OR ACCUMULATING WITHIN THE COMPONENTS DURING CONDITIONS OF FLOODING IN ACCORDANCE WITH AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE) 24. THIS CERTIFICATION APPLIES TO THE SMD SYSTEM IN THIS FILING; HVAC, PLUMBING, ELECTRICAL AND OTHER SERVICES FACILITIES AND EQUIPMENT NOT REFLECTED ON THIS SET IS CERTIFIED BY OTHERS ON APPLICABLE RELATED FILINGS.

DRAWING LIST

SHEET NO.	SHEET TITLE	DOB SET
H-001.00	SUB-MEMBRANE DEPRESSURIZATION SYSTEM NOTES	1
H-100.00	SITE PLAN	2
H-101.00	SUB-MEMBRANE DEPRESSURIZATION SYSTEM PLAN	3
H-102.00	SUB-MEMBRANE DEPRESSURIZATION SYSTEM RISER PLAN AND DETAILS (CELLAR FLOOR)	4
H-103.00	SUB-MEMBRANE DEPRESSURIZATION SYSTEM RISER PLAN (FLOORS 1 TO 13)	5
H-104.00	SUB-MEMBRANE DEPRESSURIZATION SYSTEM BLOWER PLAN AND DETAILS	6
H-201.00	SUB-MEMBRANE DEPRESSURIZATION SYSTEM DETAILS	7
H-202.00	SUB-MEMBRANE DEPRESSURIZATION SYSTEM DETAILS	8
EN-001.00	ENERGY CODE COMPLIANCE	9

SCOPE OF WORK

- INSTALLATION OF THE SMD STONE LAYER AND SMD/VAPOR COLLECTION SUB-SLAB PIPING
- INSTALLATION OF WP/VB, BUILDING SLAB, AND PERMANENT MONITORING POINTS
- INSTALLATION OF RISER PIPES AND ROOF-MOUNTED PROCESS EQUIPMENT
- INSTALLATION OF ELECTRICAL CONNECTIONS TO PROCESS EQUIPMENT
- STARTUP OF THE SMD SYSTEM

SUB-MEMBRANE DEPRESSURIZATION SYSTEM NOTES

1. REFER TO DRAWINGS H-100.00 THROUGH H-104.00 AND H-201.00 THROUGH H-202.00 FOR SMD SYSTEM DETAILS AND SECTIONS.
2. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR OWNER AND EOR APPROVAL PRIOR TO THE SMD SYSTEM INSTALLATION. ANY CONDITION OR DETAIL NOT DEPICTED IN THESE DRAWINGS SHALL BE PROVIDED AS A SHOP DRAWING FOR APPROVAL.
3. ENTIRE SMD SYSTEM INSTALLATION MUST BE INSPECTED FOR APPROVAL BY A REPRESENTATIVE UNDER THE DIRECT SUPERVISION OF THE PROFESSIONAL ENGINEER.
4. SMD SYSTEM PIPE, FITTINGS, UNIONS, CLEANOUTS, SLEEVES, SUPPORTS, HANGERS, AND RELATED ACCESSORIES SHALL BE FURNISHED IN ACCORDANCE WITH THE REQUIREMENTS FOR PLUMBING SANITARY VENT PIPING IN CHAPTER 7 OF THE NEW YORK CITY (NYC) PLUMBING CODE. REFER TO PLUMBING DRAWINGS FOR SMD SYSTEM PIPING SUPPORTS.
5. SLOPE ALL HORIZONTAL SUB-SLAB SOLID (UNPERFORATED) PIPE A MINIMUM OF 1% (I.E., 1/8-INCH PER LINEAR FOOT) UNIFORMLY DOWNWARD TOWARD THE PERFORATED PIPE, TO PREVENT BUILDUP OF CONDENSATE. ANY ACCUMULATED MOISTURE/WATER MUST BE ALLOWED TO DRAIN TO THE SUBSURFACE. PIPING SHALL NOT BE TRAPPED AND CONDENSATE DRAINS SHALL NOT BE INSTALLED IN ABOVE SLAB PIPING. IN THE EVENT THAT PITCHING IS NOT ACHIEVABLE, THE SUB-SLAB PIPING SHALL BE EQUIPPED WITH CONDENSATE WEEPHOLES. THE WEEPHOLES WILL BE INSTALLED WITHIN EVERY 10 FEET OF HORIZONTAL SUB-SLAB PIPING. WEEPHOLES SHALL CONSIST OF A 1/4-INCH HOLE INSTALLED ON THE BOTTOM OF THE CENTERLINE.
6. CONDENSATE DRAIN FOR SUB-SLAB PIPING MAY BE AN OPTION, WITH WRITTEN ENGINEER APPROVAL, IF CONFLICT WITH UTILITIES REQUIRES REVERSE SLOPE.
7. A CORROSION-RESISTANT BARRIER (I.E., SHEATHING, WRAPPING, OR LIQUID COAT) SHALL BE INSTALLED FOR PIPES PASSING THROUGH OR ENCASED IN CONCRETE, IN ACCORDANCE WITH CHAPTER 3 OF THE NYC PLUMBING CODE.
8. NON-WOVEN GEOTEXTILE FABRIC (MIRAFI 140N OR ENGINEER APPROVED EQUIVALENT) MUST BE PLACED BELOW THE 3/4-INCH CLEAN STONE LAYER TO ISOLATE THE SMD SYSTEM FROM SUBGRADE FINES.
9. A MINIMUM 8-INCH-THICK 3/4-INCH CLEAN STONE LAYER MUST NOT BE COMPACTED AND MUST BE CONTINUOUS ACROSS THE DEPRESSURIZED AREA (I.E. NOT TRENCHED ALONG PERFORATED PIPING).
10. 3/4-INCH STONE USED IN THE GAS PERMEABLE AGGREGATE LAYER LAYER SHALL BE VIRGIN, COARSE, ANGULAR, WASHED STONE WITH THE FOLLOWING GRADATION (ASTM/AASHTO #5 SIZE STONE)

SIEVE SIZE	% PASSING BY WEIGHT
1 ½"	100
1"	90-100
¾"	20-55
⅜"	0-10
No. 4	0-5
#200	<1

11. DESIGN DETAILS AND DRAWINGS ARE ADAPTED FROM U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) DOCUMENT EPA/625/R-92/016.
12. ALL PIPING SHALL BE INSTALLED IN ACCORDANCE WITH THE NYC MECHANICAL AND PLUMBING CODE, INCLUDING, BUT NOT LIMITED TO, THOSE REQUIREMENTS PERTAINING TO:
    - PROTECTION OF SYSTEM COMPONENTS
    - TRENCHING, EXCAVATION, AND BACKFILL
    - STRUCTURAL SAFETY
    - PIPING SUPPORT
    - JOINTS
    - RISER LOCATION
    - MATERIALS OF CONSTRUCTION
13. ALL ABOVEGROUND SMD SYSTEM PIPES SHALL BE PROVIDED WITH PIPE HANGERS IN ACCORDANCE WITH THE REQUIREMENTS ON THE PLUMBING DRAWINGS AND SPECIFICATIONS.
14. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND PIPING SHALL BE CONSTRUCTED OF 4"Ø SCHEDULE 80 POLYVINYL CHLORIDE (PVC) AND ALL ABOVEGROUND RISER PIPING SHALL BE CONSTRUCTED OF 4"Ø METAL THAT COMPLIES WITH APPLICABLE BUILDING CODE. PERFORATIONS SHALL BE PRE-FABRICATED 1/2-INCH HOLES WITH 120-DEGREE SPACING AT 3-INCH INTERVALS ALONG THE PIPE AND HAVE A MINIMUM PIPE STIFFNESS OF 35 POUNDS PER SQUARE INCH (PSI) AT 5% DEFLECTION.
15. ALL FITTINGS AND CONNECTIONS FOR THE VAPOR COLLECTION PIPE SHALL BE 4"Ø SCHEDULE 80 PVC FITTINGS, MADE BY THE SAME MANUFACTURER AS THE 4"Ø PIPE, AND OF THE TYPE RECOMMENDED BY THE MANUFACTURER FOR USE WITH THE 4"Ø PIPE. SECURE ALL FITTINGS WITH 2-INCH-WIDE TILE TAPE.
16. 90-DEGREE FITTINGS MUST BE SCHEDULE 80 PVC, LONG-SWEEP ELBOWS COMPATIBLE WITH VAPOR COLLECTION PIPE TO ALLOW FOR VIDEO SCOPING, IF REQUIRED FOLLOWING COMMISSIONING OF THE SMD SYSTEM.
17. TOP OF PERFORATED VAPOR COLLECTION PIPE SHALL BE AT LEAST 2 INCHES FROM THE BOTTOM OF THE SLAB. WHEN NECESSARY, PERFORATED VAPOR COLLECTION PIPE MAY BE ROUTED UNDERNEATH OTHER UTILITIES OR PIPING; TOP OF PERFORATED VAPOR COLLECTION PIPE SHOULD NOT EXCEED 12 INCHES FROM THE BOTTOM OF THE SLAB (UNLESS OTHERWISE NOTED); BOTTOM OF PERFORATED VAPOR COLLECTION PIPE SHALL BE A MINIMUM OF 2 INCHES ABOVE BOTTOM OF GAS PERMEABLE AGGREGATE LAYER (APPLICABLE ONLY WHEN REROUTING FOR OTHER UTILITIES).
18. INSTALLATION OF THE SUB-SLAB COMPONENTS, AND RISER PIPING AND VENT, AND ROOF PENETRATIONS MUST BE COORDINATED WITH OTHER TRADES FOR THE INSTALLATION OF OTHER UTILITIES AND STRUCTURAL COMPONENTS.
19. NO SUB-SLAB PIPING SHALL BE COVERED POST-INSTALLATION UNTIL IT HAS BEEN INSPECTED BY THE ENGINEER AND SURVEYED BY THE CONTRACTOR. CONTRACTOR SHALL PROTECT VAPOR COLLECTION PIPING FOLLOWING PLACEMENT OF THE GAS PERMEABLE AGGREGATE LAYER.
20. RISER PIPE FROM SUB-SLAB TO ROOF SHALL BE COORDINATED WITH THE ARCHITECT AND MECHANICAL ENGINEER. RISER PIPE SHALL BE EXTENDED TO THE ROOF WITH MINIMAL CHANGES IN DIRECTION; NO 90-DEGREE CHANGES IN DIRECTION ARE ALLOWED, 45-DEGREE FITTINGS ARE PREFERRED. HORIZONTAL RISER PIPE RUNS MUST MAINTAIN A MINIMUM SLOPE OF 1/8-INCH PER LINEAR FOOT, SLOPING BACK TOWARD THE RISER. SEE DRAWINGS H-101.00 THROUGH H-104.00 FOR RISER LOCATIONS. ANY DEVIATIONS FROM THIS DESIGN MUST BE SUBMITTED TO THE EOR FOR REVIEW.
21. SYSTEM INSTALLATION SHALL ADHERE TO: OCTOBER 2006 FINAL GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK PREPARED BY NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) (AND SUBSEQUENT UPDATES) AND ALL APPLICABLE PORTIONS OF THE BUILDING CODE OF THE CITY OF NEW YORK, INCLUDING BUT NOT LIMITED TO 2022 NYC MECHANICAL CODE, CHAPTER 5, SECTION MC 512, "SUB-SLAB SOIL EXHAUST SYSTEMS".
22. RISER PIPE SHALL BE AIR-TIGHT. THE CONTRACTOR SHALL PERFORM PRESSURE TESTING TO DEMONSTRATE THAT THE RISER PIPE IS AIR-TIGHT BEFORE IT IS PUT INTO SERVICE. PRESSURE TESTING SHALL BE COMPLETED AT EVERY VERTICAL VENT RISER PIPE TO CONFIRM NO DAMAGE TO THE ABOVE GRADE SMD SYSTEM PIPES. PRESSURE TESTING WILL INVOLVE ISOLATING THE RISERS AND SHALL GENERALLY FOLLOW THE TESTING PROCEDURES SET FORTH IN ASME B31.1. A MINIMUM OF 2 INCHES OF MERCURY [IN HG] SHALL BE APPLIED TO THE PIPE AND MAINTAINED FOR A MINIMUM OF 10 MINUTES. ANY DAMAGE OR DEFECT DETECTED SHALL BE REPAIRED OR REPLACED.
23. EXHAUST STACKS SHALL BE SECURELY ANCHORED WITH ADEQUATE STRUCTURAL SUPPORTS AS SHOWN ON DETAILS AND REQUIRED IN THE SPECIFICATIONS.
24. RISER PIPE MUST BE PERMANENTLY IDENTIFIED AND CLEARLY LABELED "CAUTION: DO NOT ALTER SUB-SLAB VAPOR VENT PIPE" IN EACH ACCESSIBLE AREA A MINIMUM OF EVERY 10 LINEAR FEET OF RISER PIPE RUN.
25. SMD SYSTEM EFFLUENT DISCHARGE POINTS SHALL BE:
    - COORDINATED WITH ARCHITECT AND MECHANICAL ENGINEER;
    - ABOVE THE EAVE OF THE ROOF (PREFERABLY, ABOVE THE HIGHEST EAVE OF THE BUILDING AND AT LEAST 24-INCHES ABOVE THE SURFACE OF THE ROOF);
    - AT LEAST 10 FEET ABOVE GROUND LEVEL;
    - AT LEAST 10 FEET AWAY FROM ANY OPERABLE AIR INTAKE THAT IS LESS THAN 2 FEET BELOW THE EXHAUST POINT; AND
    - 10 FEET FROM ANY ADJOINING OR ADJACENT BUILDINGS, OR HVAC INTAKES OR SUPPLY REGISTERS
26. ALL EXTERNAL PIPES SHALL BE PAINTED WITH A UV-RATED AND/OR CORROSION RESISTANT COATING, DEPENDING ON PIPE MATERIAL.

WATERPROOFING/VAPOR BARRIER NOTES

1. REFER TO ARCHITECTURAL PLANS FOR WP/VB DESIGN.
2. WP/VB SHALL BE AN ASTM E1745 CLASS A, VOC-RESISTANT MEMBRANE WITH A MINIMUM THICKNESS OF 20 MILS. WP/VB MEMBRANE MUST BOND/ADHERE TO THE UNDERSIDE OF THE CONCRETE SLAB.
3. THE WP/VB MATERIALS ARE INTENDED TO MITIGATE INTRUSION OF CONTAMINATED SUB-SLAB VAPORS INTO OCCUPIED BUILDING SPACES. IF ALSO REQUIRED, THIS SHALL BE COORDINATED ACCORDINGLY TO ENSURE COMPATIBLE MATERIALS ARE SELECTED AND APPLIED.
4. THE EXTENTS OF THE BUILDING CONSTRUCTION BENEATH THE FLOOR SLABS SHALL BE LINED WITH A WP/VB, INCLUDING UNDER ANY VESTIBULES NOT SHOWN ON THIS PLAN. AS PART OF BUILDING CONSTRUCTION, THE WP/VB SYSTEM SHALL ALSO BE APPLIED TO THE WALLS AND FLOORS OF PITS AND SUMPS.
5. VERIFY THAT WP/VB INTEGRITY AND WARRANTY WILL NOT BE AFFECTED BY INSTALLATION OF DRAINAGE BOARD/INSULATION, AS NEEDED.
6. CONTRACTOR SHOP DRAWINGS INDICATING WP/VB INSTALLATION DETAILS AND METHODS SHALL BE REVIEWED AND APPROVED BY THE MATERIAL MANUFACTURER PRIOR TO SUBMITTAL TO THE EOR FOR REVIEW.
7. SUBMIT DETAIL OF ANY SITE SPECIFIC WP/VB CONDITIONS NOT SHOWN TO THE EOR FOR REVIEW. TYPICAL MANUFACTURER DETAILS SHOULD BE USED WHEN NO SITE-SPECIFIC DETAIL IS PROVIDED IN THE ARCHITECTURAL DRAWINGS.
8. ALL WP/VB ACCESSORY MATERIALS, INCLUDING BUT NOT LIMITED TO TAPE, SEALANT, LIQUID MEMBRANE, ETC. SHALL BE COMPATIBLE WITH AND DESIGNED FOR USE WITH THE SELECTED WP/VB.
9. WP/VB SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE MANUFACTURER GUIDELINES, SPECIFICATIONS, AND DETAILS.
10. WP/VB SHALL BE INSTALLED BY A MANUFACTURER-CERTIFIED OR -APPROVED INSTALLER.
11. WP/VB INSTALLATION MUST BE INSPECTED AND CERTIFIED BY THE MANUFACTURER-CERTIFIED INSTALLER.
12. DO NOT PENETRATE THE WP/VB. CARE SHALL BE TAKEN DURING THE PLACEMENT OF THE SLAB REINFORCING REBAR AND THE POURING OF THE BUILDING SLAB TO PREVENT ACTIVITIES (I.E., VEHICLE TRAFFIC DIRECTLY ON TOP OF WP/VB) WHICH MAY DAMAGE THE WP/VB PRIOR TO INSTALLING THE BUILDING SLAB. IF VEHICLE TRAFFIC OVER THE WP/VB IS REQUIRED, PROPER PRECAUTIONS SHALL BE COORDINATED WITH THE EOR PRIOR TO INITIATING SUCH WORK. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE MEMBRANE IS NOT PENETRATED OR DAMAGED.
13. THE WP/VB SHALL BE INSPECTED FOR HOLES, PUNCTURES AND GAPS. ALL LEAKS SHALL BE PATCHED PER THE MANUFACTURER'S INSTRUCTIONS AND RETESTED.
14. WP/VB SHALL BE INSPECTED IMMEDIATELY BEFORE CONCRETE IS PLACED. ALL PENETRATIONS, HOLES, AND/OR TEARS SHALL BE SEALED BEFORE CONCRETE IS PLACED. THE WP/VB DETAILS SHOWN ARE GENERALIZED IN NATURE AND ARE INTENDED TO INDICATE THE EXTENT AND LOCATIONS OF THE WP/VB. ACTUAL INSTALLATION AND REPAIRS SHALL BE IN ACCORDANCE WITH THE WP/VB MANUFACTURER'S STANDARD DETAILS AND WRITTEN INSTALLATION INSTRUCTIONS. ALL STANDING WATER AND SOIL/DEBRIS MUST BE REMOVED FROM THE WP/VB BEFORE CONCRETE IS PLACED. POTABLE WATER OR COMPRESSED AIR CAN BE USED TO CLEAN THE SURFACE BEFORE CONCRETE IS PLACED.
15. INSTALLED WP/VB MATERIALS AND INSTALLATION SHALL HAVE WARRANTIES PROVIDED BY THE INSTALLER AND MANUFACTURER.

QA/QC INSPECTION SCHEDULE

No.	MILESTONE DESCRIPTION	DATE COMPLETED
1	COMPLETION OF SUBGRADE PREPARATION, INCLUDING THE INSTALLATION OF GEOTEXTILE FABRIC, FOLLOWING SOIL EXCAVATION.	
2	DELIVERY OF GAS PERMEABLE AGGREGATE TO THE SITE.	
3	SUB-MEMBRANE DEPRESSURIZATION PIPING INSTALLATION PROGRESS, AT A MINIMUM, 25% COMPLETENESS.	
4	SUB-MEMBRANE DEPRESSURIZATION PIPING INSTALLATION PROGRESS, AT A MINIMUM, 50% COMPLETENESS.	
5	SUB-MEMBRANE DEPRESSURIZATION PIPING INSTALLATION PROGRESS, AT A MINIMUM, 75% COMPLETENESS.	
6	SUB-MEMBRANE DEPRESSURIZATION PIPING INSTALLATION PROGRESS, AT A MINIMUM, 100% COMPLETENESS.	
7	INSTALLATION OF VACUUM MONITORING POINTS (VMP).	
8	COMPLETION OF GAS PERMEABLE AGGREGATE LAYER.	
9	PLACEMENT OF FINISHED FLOOR SLAB.	
10	COMPLETION OF INSTALLATION OF ALL PORTIONS OF ABOVE-SLAB PIPING FROM THE RISER STUB-UP TO THE ROOF (INCLUDING LABELS ON EXPOSED PORTIONS OF THE ABOVE-SLAB RISER PIPING).	
11	PRESSURE TESTING OF COMPLETED INTERIOR PIPES.	
12	INSTALLATION OF BLOWERS/SUCTION FANS AND ACCESSORIES.	
13	INSTALLATION OF ALARM INDICATOR STATION (AIS) AND TESTING.	
14	START-UP OF COMPLETED SYSTEM.	

CODE COMPLIANCE NOTES

1. THE SMD SYSTEM COMPLIES WITH THE REQUIREMENTS OF THE 2022 NYC MECHANICAL CODE, CHAPTER 5, SECTION 512, "SUB-SLAB SOIL EXHAUST SYSTEMS".
2. THE SMD SYSTEM IS NOT A "HAZARDOUS EXHAUST SYSTEM", AS DEFINED IN THE 2022 NYC MECHANICAL CODE SECTION 510.
3. CHAPTER 6, "DUCT SYSTEMS", PARAGRAPH 601.4, "CONTAINMENT PREVENTION", OF THE 2022 NYC MECHANICAL CODE DOES NOT APPLY TO THE SMD SYSTEM.
4. CHAPTER 6, "DUCT SYSTEMS", PARAGRAPH 607.5.5.2, "LIMITATIONS", OF THE 2022 NYC MECHANICAL CODE DOES NOT APPLY TO THE SMD SYSTEM.
5. PLEASE REFER TO NEW BUILDING APPLICATION DOB NOW JOB NUMBER B01283545-S9 FOR ALL BUILDING DEPARTMENT NOTES, APPLICABLE INSPECTIONS, AND LIST OF DRAWINGS.
6. THE SMD SYSTEM IS NOT DESIGNED TO VENT METHANE OR RADON.

PERMITS:
CONTRACTOR SHALL FILE FOR AND OBTAIN PERMITS FOR ALL MECHANICAL SYSTEMS. PERMITS SHALL COMPLY WITH CHAPTER 1 ADMINISTRATION, TITLE 28, SECTION MC 105.

LISTED AND LABELED:
ALL APPLIANCES REGULATED BY 2022 NYC MECHANICAL CODE SHALL BE LISTED AND LABELED AS REQUIRED BY CHAPTER 1, MC 301.7. LABEL INFORMATION SHALL COMPLY WITH REQUIREMENTS OF CHAPTER 1, MC 301.9.

VIBRATION ISOLATION:
ALL MECHANICAL EQUIPMENT SHALL BE MOUNTED AND SUPPORTED AND PROVIDED WITH VIBRATION ISOLATORS AS REQUIRED BY 2022 NYC MECHANICAL, CHAPTER 3, MC 313.3.

WIND RESISTANCE:
ALL MECHANICAL EQUIPMENT, APPLIANCES, AND SUPPORTS THAT ARE EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED AS PER 2022 NYC BUILDING CODE CHAPTER 16, SECTION BC 1609 "WIND LOADS".

FIRE STOPPING COMPLIANCE NOTE:
- FOR FIRE STOPPING AT ANY FIRE RATED CONSTRUCTION PENETRATION, CONTRACTOR SHALL REFER TO FIRE PROTECTION DRAWING SET (REFER TO ARCHITECTURAL DRAWINGS).
- ALL DUCT AND PIPE PENETRATIONS OF RATED CONSTRUCTION SHALL COMPLY WITH 2022 NYC BUILDING CODE, CHAPTER 7, SECTIONS BC 711 AND 714.

SUBMITTALS/DELIVERABLES

1. CONTRACTOR TO PROVIDE MANUFACTURER CUT SHEETS FOR ALL PROPOSED COMPONENTS OF THE SMD SYSTEM (INCLUDING BUT NOT LIMITED TO PVC VAPOR COLLECTION PIPING, PVC PIPE FITTINGS, GEOTEXTILE FABRIC, 3/4-INCH CLEAN STONE, WP/VB, METAL RISER PIPE, RISER PIPE FITTINGS, SUB-SLAB VACUUM MONITORING POINTS, AND BLOWERS) BEFORE PROCUREMENT AND INSTALLATION.
2. CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS TO THE EOR FOR REVIEW PRIOR TO INSTALLATION OF SMD SYSTEM COMPONENTS.
3. CONTRACTOR TO PROVIDE PROOF OF CERTIFICATION FOR WP/VB INSTALLER AS A CONSTRUCTION SUBMITTAL FOR REVIEW.
4. CONTRACTOR MUST PROVIDE SHOP DRAWINGS AND PROFESSIONAL ENGINEER (PE)-STAMPED AS-BUILT DRAWINGS OF COMPLETED WP/VB EXTENTS TO EOR FOLLOWING INSTALLATION.
5. CONTRACTOR MUST PROVIDE PE-STAMPED AS-BUILT DRAWINGS OF UNDER-SLAB AND ABOVE-SLAB SMD SYSTEM COMPONENTS TO EORFOLLOWING INSTALLATION.
6. THE SUBSURFACE SYSTEM COMPONENTS (E.G, PIPES) SHALL BE SURVEYED BY A NYS LICENSED SURVEYOR.
7. CONTRACTOR TO PROVIDE TESTING REPORTS (INCLUDING RESULTS OF PRESSURE/LEAK TESTING OF ALL PIPING).
8. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR THE BLOWER (ALL COMPONENTS OF THE BLOWER SHOULD BE COMPATIBLE WITH VOLATILE ORGANIC COMPOUNDS).

PROGRESS INSPECTIONS

PROGRESS INSPECTIONS REQUIRED UNDER CHAPTER 1 OF THE NYC BUILDING CODE AND THE APPLICABLE SECTIONS OF THE NYC CONSTRUCTION CODE ARE LISTED IN THE FOLLOWING TABLES.

THE CONTRACTOR MUST NOTIFY THE RELEVANT SPECIAL INSPECTOR OR SPECIAL INSPECTION AGENCY IN WRITING FOR SPECIAL INSPECTIONS AT LEAST 72 HOURS BEFORE THE SPECIFIC WORK COMMENCES.

THE "OWNER" SHALL BE RESPONSIBLE FOR THE FOLLOWING PROGRESS INSPECTIONS:

ENERGY CODE COMPLIANCE INSPECTIONS * TR8	BC 110.3.5
FINAL	BC 110.5 28-116.2.4.2 1 RCNY 101-10

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS REQUIRED UNDER THIS APPLICATION IN ACCORDANCE WITH CHAPTER 17 AND THE APPLICABLE SECTIONS OF THE NEW YORK CITY CONSTRUCTION CODE ARE LISTED IN THE FOLLOWING TABLES. SPECIAL INSPECTIONS FOR PORTIONS OF THE WORK THAT ARE FILED UNDER SEPARATE APPLICATION ARE NOT LISTED HERE AND ARE TO BE LISTED ON THOSE APPLICATIONS BY THE CONTRACTOR'S APPLICANT OF RECORD.

THE CONTRACTOR MUST NOTIFY THE RELEVANT SPECIAL INSPECTOR OR SPECIAL INSPECTION AGENCY IN WRITING FOR SPECIAL INSPECTIONS AT LEAST 72 HOURS BEFORE THE SPECIFIC WORK COMMENCES.

THE "OWNER" SHALL BE RESPONSIBLE FOR THE FOLLOWING SPECIAL INSPECTIONS:

MECHANICAL SYSTEMS	BC 1705.21
FIRE-RESISTANT PENETRATIONS AND JOINTS	BC 1705.17
POST-INSTALLED ANCHORS (BB# 2022-014)	BC 1705.37
FINAL	BC 110.5 28-116.2.4.2, 1 RCNY 101-10

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

178 MONTROSE AVE
BROOKLYN, NY

BLOCK: 3062 LOT: 12, 33 & 34

Architect:
AUFGANG,
74 Lafayette Avenue
Suite 301
Suffern, NY 10901
845.368.0004
info@aufgang.com

Owner/Developer
SLATE PROPERTY GROUP:
440 Park Ave South
3rd Floor
New York, NY10016
646.439.4000

Structural Engineer
MCNAMARA SALVIA:
45 West 45th Street
10th Floor
New York, NY10036
212.246.9800

MEP Engineer
ALTERA ENGINEERING:
1460 Broadway
7th Floor
New York, NY10036
212.330.7634

Civil Engineer
CIVIL DESIGN WORKS:
254 South Main Street #308
New City, NY 10956
845.266.6441

Interior Designer
PARALLEL INTERIORS:
Studio Parallel Architecture
1343 Pacific Street
Brooklyn, NY 11216
917.569.8685

Elevator Consultant
VDA, INC.:
120 Eagle Rock Avenue, Suite B001
East Hanover, NJ 07936
973.994.9220

DATE	SUBMISSIONS / REVISIONS
05/21/26	ISSUED TO DOB

SHEET TITLE:
SUB-MEMBRANE DEPRESSURIZATION SYSTEM NOTES

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SEAL & SIGNATURE
STATE OF NEW YORK · GERALD T. NICHOLS · 092433 · LICENSED PROFESSIONAL ENGINEER

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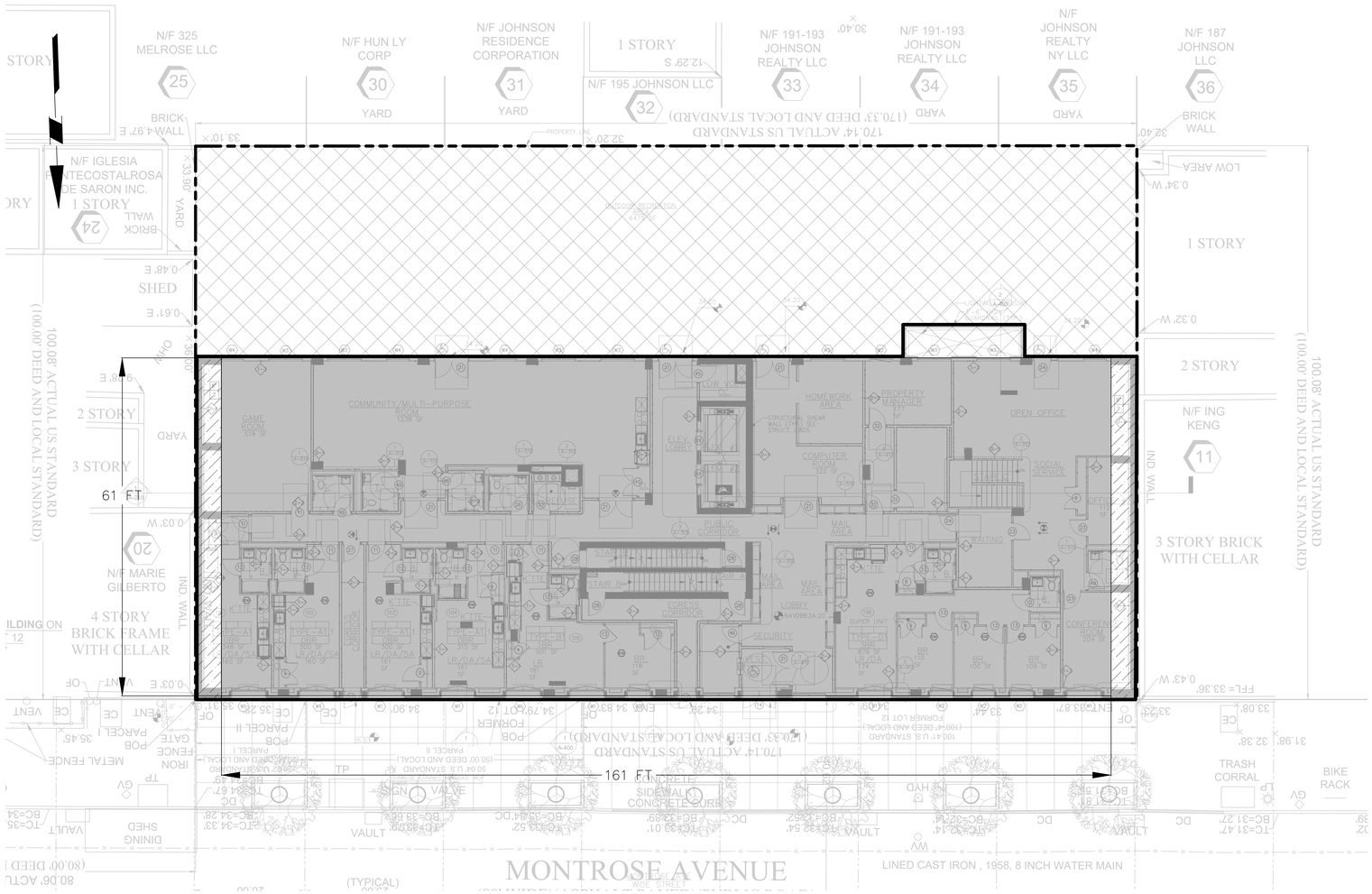
PROJECT NO:
DRAWN BY: CD
CHECKED BY: GN
SCALE:
SHEET NO:
OF
DRAWING NO: H-001.00
NYC DOB NUMBER: B01283545-S9



1
H-100

FIRST FLOOR ARCHITECTURAL PLAN
SCALE: 1" = 10'

LEGEND:

- PROPERTY LINE
- BUILDING BOUNDARY
- APPROXIMATE EXTENTS OF DEPRESSURIZED AREA
- APPROXIMATE EXTENTS OF OUTDOOR AREA OR LIGHTWELL (NO DEPRESSURIZATION REQUIRED)
- APPROXIMATE EXTENTS OF SECANT PILE WALL (NO DEPRESSURIZATION REQUIRED)

NOTES:

1. ALL LOCATIONS ARE APPROXIMATE.
2. ARCHITECTURAL SURVEY REFERENCED FROM SURVEY OF PROPERTY SITUATED IN 172 MONTROSE AVENUE, BY FEHRINGER SURVEYING, P.C., DATED SEPTEMBER 4, 2024.
3. BASE MAP AND DIMENSIONS REFERENCED FROM THE DOB FILING SUBMISSION SET, 1ST FLOOR PLAN A-101.00, BY AUFGANG, DATED FEBRUARY 19, 2026.
4. EXTENTS OF THE NON-DEPRESSURIZED AREAS ARE HATCHED. DEPRESSURIZATION IS NOT REQUIRED IN THESE AREAS DUE TO THE FOLLOWING:
   - THE AREA IS OPEN-AIR
   - THE AREA IS A LIGHTWELL
   - THE AREA IS A SECANT PILE WALL
5. EXTENTS OF THE DEPRESSURIZED AREAS ARE SHADED. SHADED AREAS MUST RECEIVE A MINIMUM 8-INCH-THICK 3/4-INCH CLEAN STONE LAYER. STONE LAYER MUST NOT BE COMPACTED AND MUST BE CONTINUOUS ACROSS DEPRESSURIZED AREA.

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

178 MONTROSE AVE
BROOKLYN, NY

BLOCK: 3062 LOT: 12, 33 & 34

Architect:
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Suffern, NY 10901
845.368.0004
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Elevator Consultant
VDA, INC.:
120 Eagle Rock Avenue, Suite
Box 1 Hanover, NJ 07936
973.994.9220

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05/21/26	ISSUED TO DOB

SHEET TITLE:
SITE PLAN

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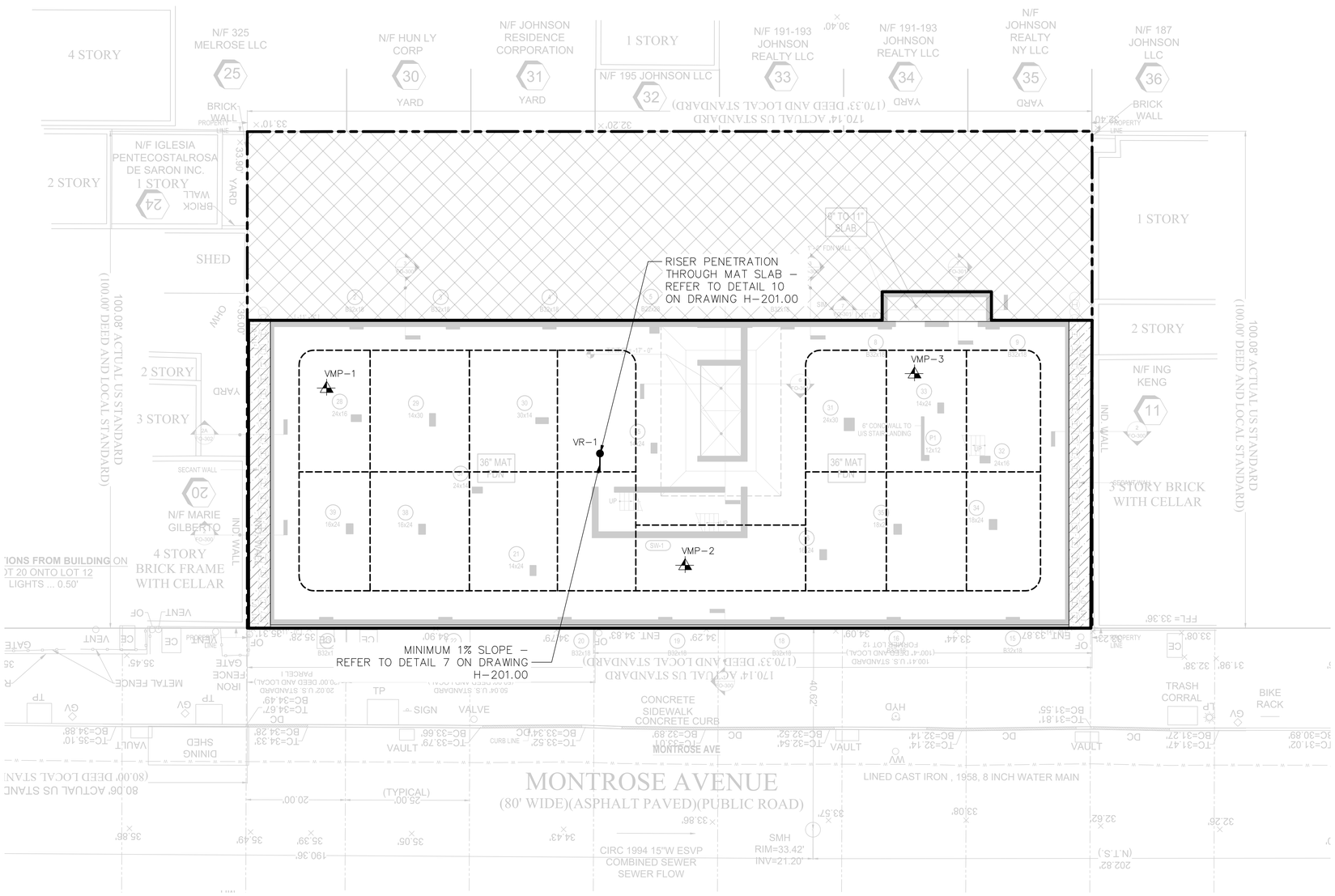
NYC DOB NUMBER: B01283545–S9



1 / H-101 CELLAR FOUNDATION PLAN
SCALE: 1" = 10'

LEGEND:

- PROPERTY LINE
- BUILDING BOUNDARY
- VMP–1 VACUUM MONITORING POINT
- SMDS 4-INCH Ø SOLID PVC UNDERGROUND PIPING
- SMDS 4-INCH Ø PERFORATED PVC UNDERGROUND PIPING
- VR–1 4-INCH Ø RISER PIPE PENETRATION
- APPROXIMATE EXTENTS OF OUTDOOR AREA OR LIGHTWELL (NO DEPRESSURIZATION REQUIRED)
- APPROXIMATE EXTENTS OF SECANT PILE WALL (NO DEPRESSURIZATION REQUIRED)

VACUUM MONITORING POINT SCHEDULE

No.	VACUUM MONITORING POINT ID	LOCATION
1	VMP-1	BUILDING STORAGE
2	VMP-2	OPEN OFFICE
3	VMP-3	ELECTRICAL ROOM

NOTES:

1. ALL LOCATIONS ARE APPROXIMATE.
2. SMDS = SUB-MEMBRANE DEPRESSURIZATION SYSTEM
3. PVC = POLYVINYL CHLORIDE
4. DOB = DEPARTMENT OF BUILDINGS
5. ARCHITECTURAL SURVEY REFERENCED FROM SURVEY OF PROPERTY SITUATED IN 172 MONTROSE AVENUE, BY FEHRINGER SURVEYING, P.C., DATED SEPTEMBER 4, 2024.
6. BASE MAP REFERENCED FROM THE DOB FILING SUBMISSION SET, FOUNDATION PLAN FO-100.00, BY AUFGANG, DATED FEBRUARY 19, 2026.
7. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED AND MAINTAINED BY NATIONAL GEODETIC SURVEY OF THE NATIONAL OCEAN SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION OR SUCCESSOR AGENCY.
8. UN-HATCHED AREAS WITH VAPOR COLLECTION PIPING MUST RECEIVE A MINIMUM 8 -INCH-THICK 3/4-INCH CLEAN STONE LAYER. STONE LAYER MUST NOT BE COMPACTED AND MUST BE CONTINUOUS ACROSS THE DEPRESSURIZED AREAS.

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

178 MONTROSE AVE
BROOKLYN, NY

BLOCK: 3062 LOT: 12, 33 & 34

Architect:
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Elevator Consultant
VDA, INC.:
120 Eagle Rock Avenue, Suite
Boot Hanover, NJ 07936
973.994.9220

DATE	SUBMISSIONS / REVISIONS
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SHEET TITLE:
SUB–MEMBRANE DEPRESSURIZATION SYSTEM PLAN

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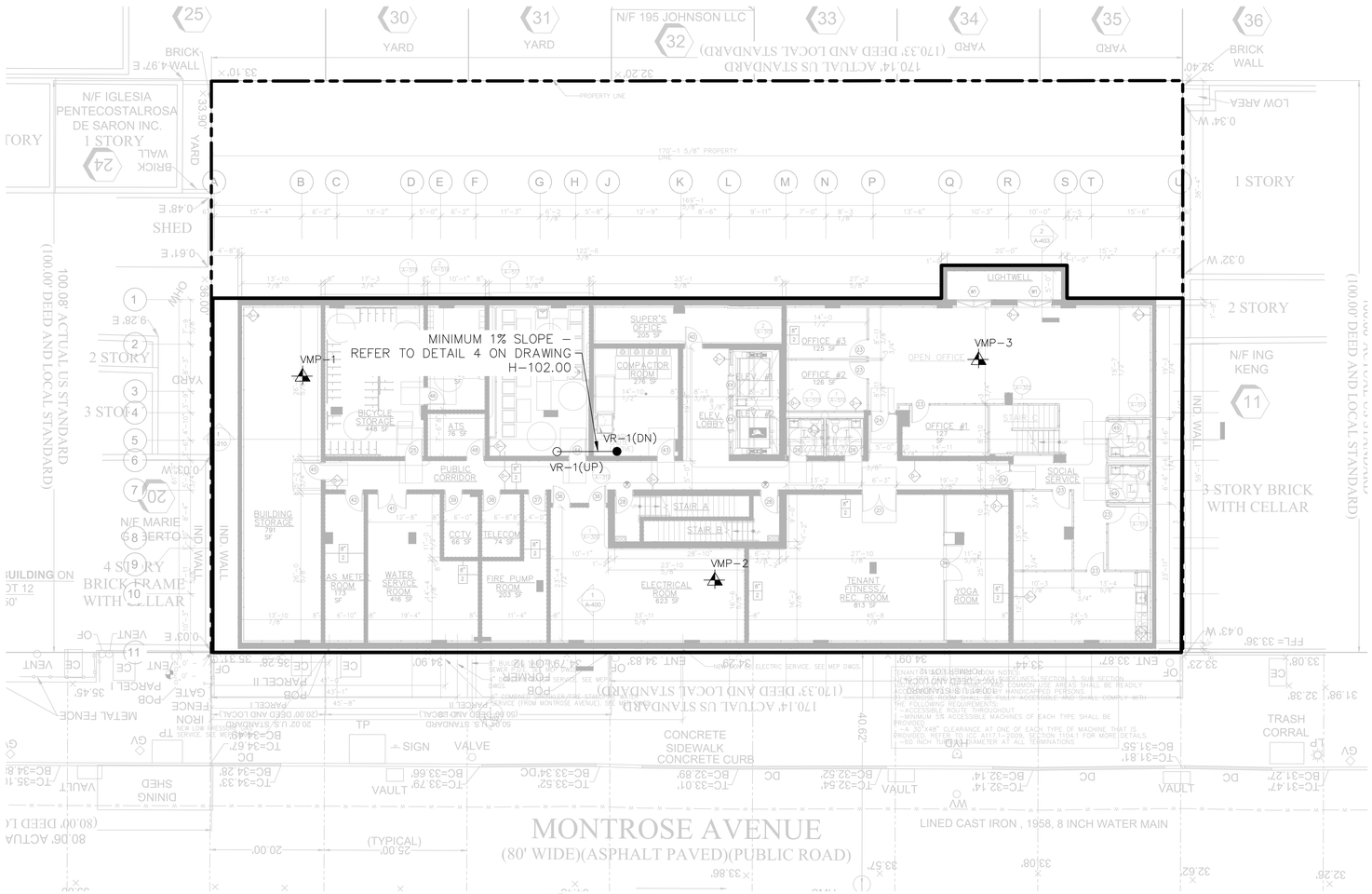
DRAWING NO: H–101.00
NYC DOB NUMBER: B01283545–S9



1 / H-102 CELLAR ARCHITECTURAL PLAN
SCALE: 1" = 10'

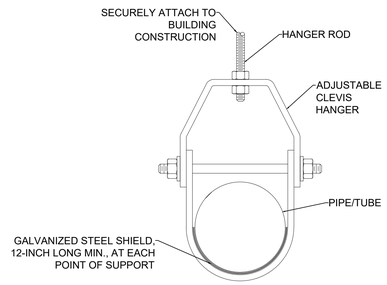
NOTES:

1. ALL LOCATIONS ARE APPROXIMATE
2. SMDS = SUB-MEMBRANE DEPRESSURIZATION SYSTEM
3. N.T.S = NOT TO SCALE
4. DOB = DEPARTMENT OF BUILDINGS
5. ARCHITECTURAL SURVEY REFERENCED FROM SURVEY OF PROPERTY SITUATED IN 172 MONTROSE AVENUE, BY FEHRINGER SURVEYING, P.C., DATED SEPTEMBER 4, 2024.
6. BASE MAP REFERENCED FROM THE DOB FILING SUBMISSION SET, CELLAR FLOOR A-100.00, BY AUFGANG, DATED FEBRUARY 19, 2026.
7. RISER PIPE SLAB PENETRATIONS LABELED AS "DN" INDICATE LOCATIONS WHERE THE RISER PIPE IS PENETRATING THE LOWER FLOOR SLAB AND CONNECTING TO SUB-SURFACE VAPOR COLLECTION PIPE.
8. RISER PIPE SLAB PENETRATIONS LABELED AS "UP" INDICATE LOCATIONS WHERE THE RISER PIPE IS PENETRATING THE UPPER FLOOR SLAB.
9. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED AND MAINTAINED BY NATIONAL GEODETIC SURVEY OF THE NATIONAL OCEAN SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION OR SUCCESSOR AGENCY.
10. PIPE AND EQUIPMENT ARRANGEMENT SHOWN FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR TO SUBMIT TO-SCALE DRAWING SHOWING PROPOSED ARRANGEMENT. CONTRACTOR IS REQUIRED TO OBTAIN APPROVAL OF ARRANGEMENT.

LEGEND:

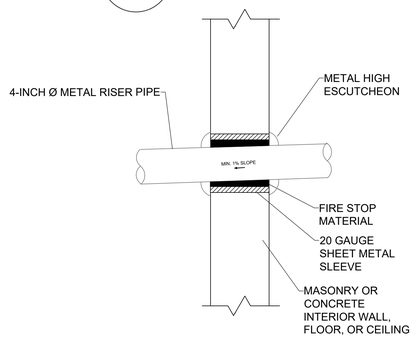
- PROPERTY LINE
- BUILDING BOUNDARY
- VMP–1 — VACUUM MONITORING POINT
- VR–1 — 4-INCH Ø METAL RISER PIPE PENETRATION
- 4-INCH Ø METAL RISER PIPE WITH A MINIMUM 1% SLOPE
- UP / DN — RISER PIPE OFFSET

VACUUM MONITORING POINT SCHEDULE		
No.	VACUUM MONITORING POINT ID	LOCATION
1	VMP-1	BUILDING STORAGE
2	VMP-2	OPEN OFFICE
3	VMP-3	ELECTRICAL ROOM



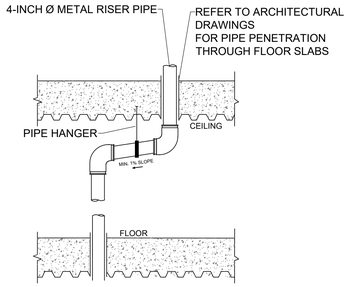
NOTE: INSTALL AS PER PLUMBING DRAWINGS AND DIVISION 15 SPECIFICATIONS.

2 / H-102 TYPICAL PIPE SUPPORT
SCALE: N.T.S.



NOTE: INSTALL AS PER PLUMBING DRAWINGS AND DIVISION 15 SPECIFICATIONS, AND PROJECT FIRESTOPPING/SMOKE SEALS REQUIREMENTS.

3 / H-102 PIPE PENETRATION AT FLOOR/WALL/CEILING
SCALE: N.T.S.



NOTE: EXTEND RISER FROM THE FLOOR PENETRATION TO CEILING. INSTALL HORIZONTAL PIPING BENEATH CEILING AT 1% SLOPE TOWARD SUBSURFACE PIPE.

4 / H-102 TYPICAL RISER PIPE OFFSET
SCALE: N.T.S.

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

178 MONTROSE AVE
BROOKLYN, NY

BLOCK: 3062 LOT: 12, 33 & 34

Architect:
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74 Lafayette Avenue
Suite 301
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PARALLEL INTERIORS:
Studio Parallel Architecture
1343 Pacific Street
Brooklyn, NY 11216
917.569.8685

Elevator Consultant
VDA, INC.:
120 Eagle Rock Avenue, Suite 180
East Hanover, NJ 07936
973.994.9220

DATE	SUBMISSIONS / REVISIONS
05/21/26	ISSUED TO DOB

SHEET TITLE:
SUB–MEMBRANE DEPRESSURIZATION SYSTEM RISER PLAN AND DETAILS (CELLAR FLOOR)

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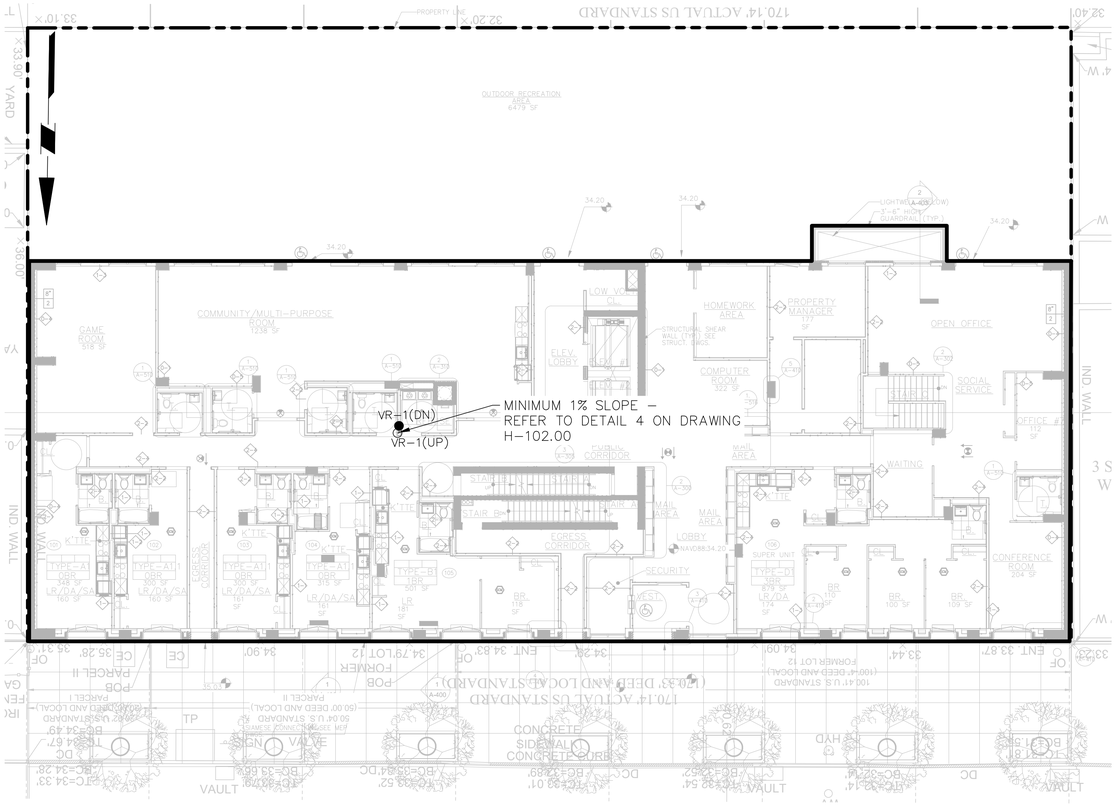
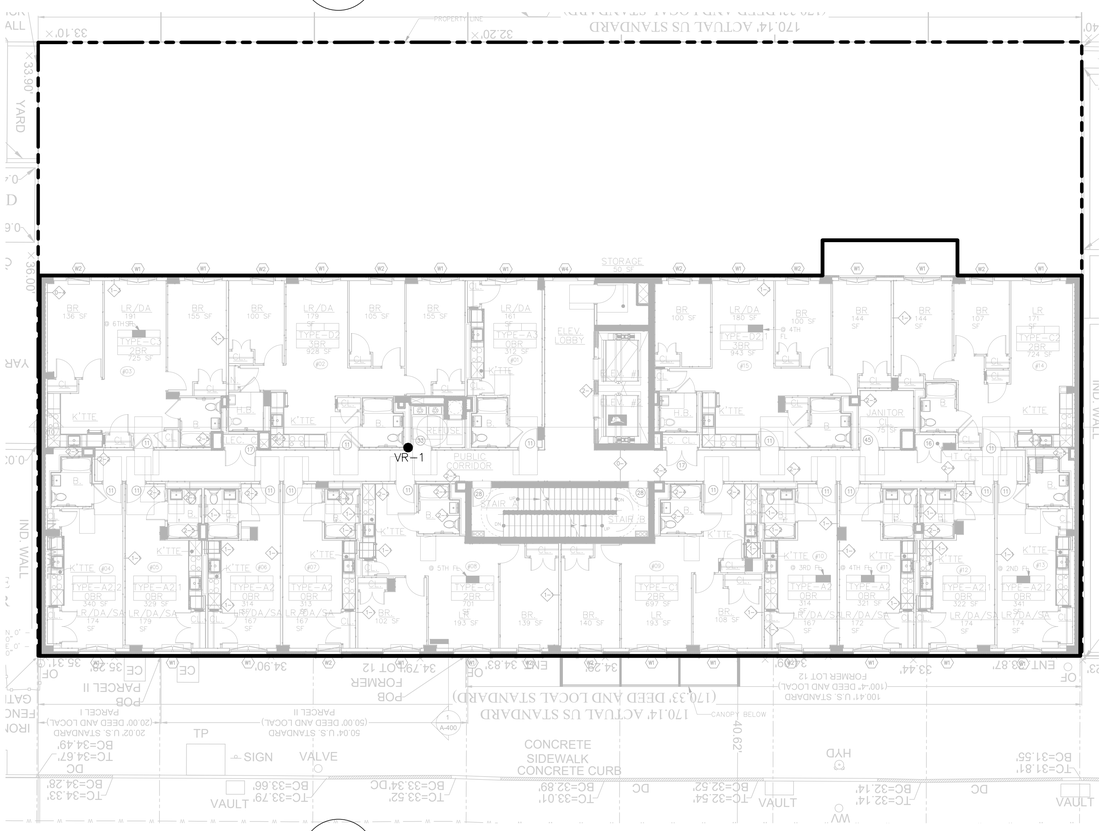
SHEET NO: OF
DRAWING NO: H–102.00
NYC DOB NUMBER: B01283545–S9

Filename: \\langan.com\data\NY\data8\170824801\Project Data\CAD\01\SheetFiles\SMDS Design\170824801 - 172 Montrose - SMDS.dwg Date: 5/21/2026 Time: 09:04 User: vkanagaratnam Style Table: Langan.stb Layout: H-102.00



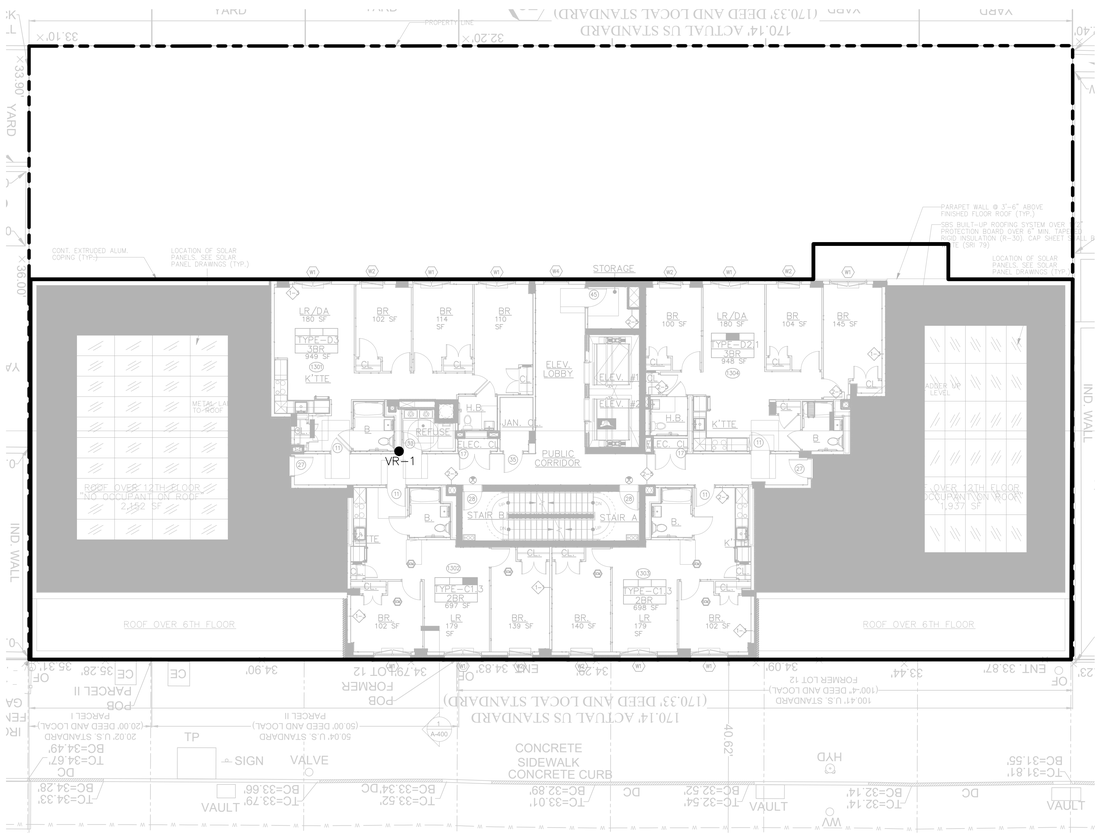
1 H-103 1ST FLOOR ARCHITECTURAL PLAN

SCALE: 1" =10'



2 H-103 TYPICAL 2ND THROUGH 12TH FLOOR ARCHITECTURAL PLAN

SCALE: 1" = 10'



3 H-103 13TH FLOOR ARCHITECTURAL PLAN

SCALE: 1" = 10'

LEGEND:

- PROPERTY LINE
- BUILDING BOUNDARY
- VR–1 4-INCH Ø METAL RISER PIPE
- 4-INCH Ø METAL RISER PIPE WITH A MINIMUM 1% SLOPE
- UP DN RISER PIPE OFFSET

NOTES:

1. ALL LOCATIONS ARE APPROXIMATE.
2. SMDS = SUB-MEMBRANE DEPRESSURIZATION SYSTEM
3. DOB = DEPARTMENT OF BUILDINGS
4. ARCHITECTRUAL SURVEY REFERENCED FROM SURVEY OF PROPERTY SITUATED IN 172 MONTROSE AVENUE, BY FEHRINGER SURVEYING, P.C., DATED SEPTEMBER 4, 2024.
5. BASE MAP REFERENCED FROM THE DOB FILING SUBMISSION SET, 1ST FLOOR PLAN A-101.00, 2ND THROUGH 6TH FLOOR PLAN A-102.00, AND 13TH FLOOR PLAN A-104.00, BY AUFGANG, DATED FEBRUARY 19, 2026.
6. REFER TO H-102.00 FOR PIPE AND EQUIPMENT ARRANGEMENT DETAILS (NOT TO SCALE). NOTE THAT NOT ALL ACCESSORIES ARE SHOWN.

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

178 MONTROSE AVE
BROOKLYN, NY

BLOCK: 3062 LOT: 12, 33 & 34

Architect:
AUFGANG,
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Elevator Consultant
VDA, INC.:
120 Eagle Rock Avenue, Suite 100
East Hanover, NJ 07936
973.994.9220

DATE	SUBMISSIONS / REVISIONS
05/21/26	ISSUED TO DOB

SHEET TITLE:

SUB–MEMBRANE DEPRESSURIZATION SYSTEM RISER PLAN (FLOORS 1 TO 13)

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SEAL & SIGNATURE

STATE OF NEW YORK · GERALD F. NICHOLS · 092433 · LICENSED PROFESSIONAL ENGINEER

ISSUE DATE: 05/21/26

PROJECT NO:

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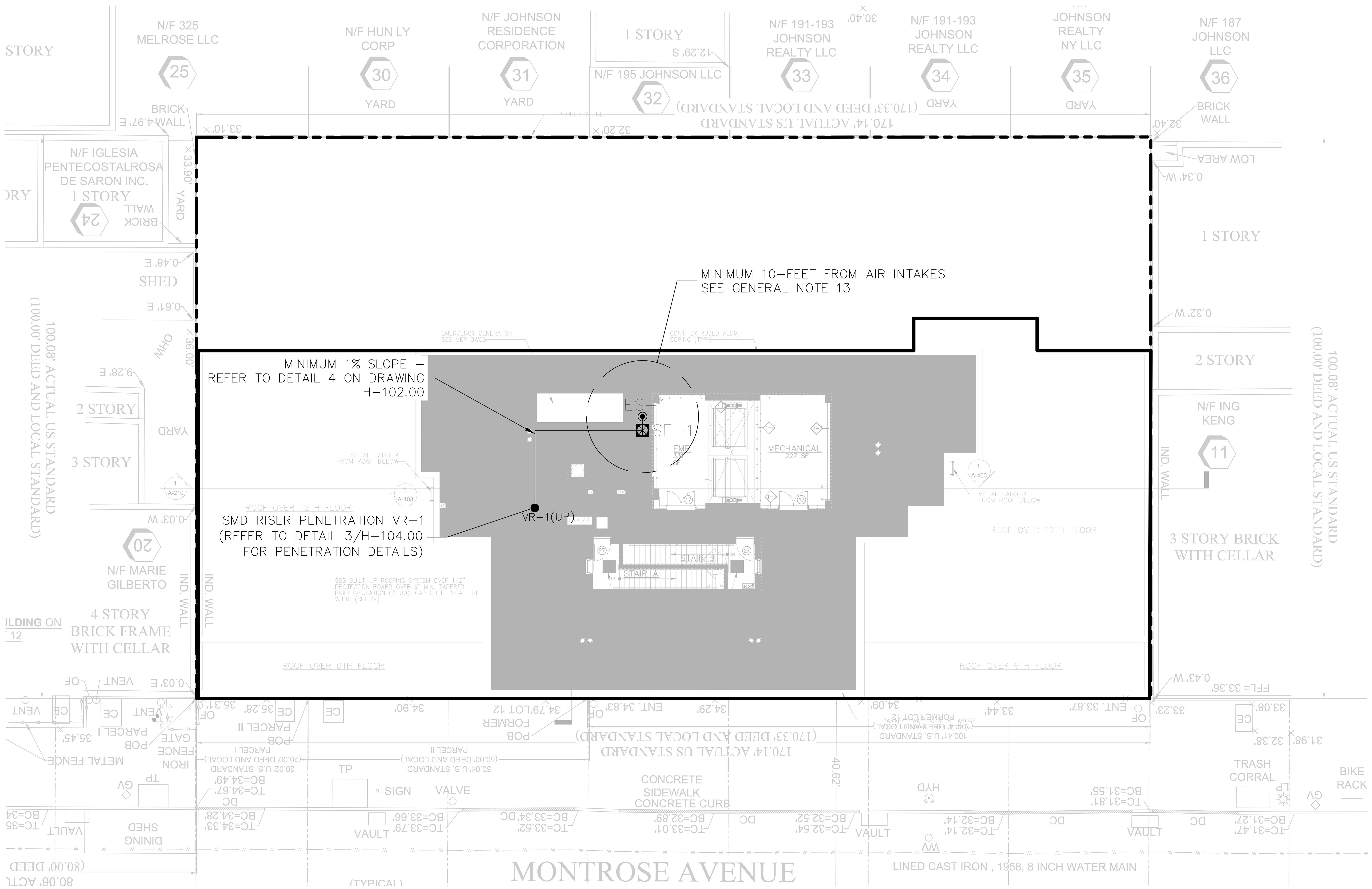
CHECKED BY: GN

SCALE:

SHEET NO: OF

DRAWING NO: H–103.00

NYC DOB NUMBER: B01283545–S9



1 / H-104 — ROOF ARCHITECTURAL PLAN
SCALE: 1" = 10'

LEGEND:

- PROPERTY LINE
- BUILDING BOUNDARY
- 4-INCH Ø METAL RISER PIPE WITH A MINIMUM 1% SLOPE
- VR–1: 4-INCH Ø METAL RISER PIPE
- SF–1: SUCTION FAN
- ES–1: EXHAUST STACK
- 10-FOOT RADIUS FROM EXHAUST STACK

GENERAL NOTES:

1. ALL LOCATIONS ARE APPROXIMATE
2. SMDS = SUB-MEMBRANE DEPRESSURIZATION SYSTEM
3. N.T.S. = NOT TO SCALE
4. DOB = DEPARTMENT OF BUILDINGS
5. NOT ALL REQUIRED ACCESSORIES ARE SHOWN.
6. ARCHITECTURAL SURVEY REFERENCED FROM SURVEY OF PROPERTY SITUATED IN 172 MONTROSE AVENUE, BY FEHRINGER SURVEYING, P.C., DATED SEPTEMBER 4, 2024.
7. BASE MAP REFERENCED FROM DOB SUBMISSION SET, ROOF & BULKHEAD FLOOR PLAN A-105.00, BY AUFGANG, DATED FEBRUARY 19, 2026 .
8. PIPE AND EQUIPMENT ARRANGEMENT SHOWN FOR SCHEMATIC PURPOSES ONLY (NOT TO SCALE). CONTRACTOR TO SUBMIT TO-SCALE DRAWING SHOWING PROPOSED ARRANGEMENT. CONTRACTOR IS REQUIRED TO OBTAIN APPROVAL OF ARRANGEMENT.
9. PROVIDE SHOP DRAWINGS FOR BLOWER AND ACCESSORY LAYOUT AND EXHAUST STACK MOUNTING.
10. EXTENSION OF THE SMDS PIPING MUST BE COORDINATED WITH STRUCTURAL ENGINEERS AND ARCHITECTS IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES.
11. PROVIDE LIGHTNING ROD AND GROUNDING WIRE AS PER ELECTRICAL REQUIREMENTS, ELECTRICAL WIRING AND EQUIPMENT NOT SHOWN. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR REQUIREMENTS.
12. EXHAUST STACK CONFIGURATION, HEIGHT, AND STRUCTURAL SUPPORT WILL BE DESIGNED BY OTHERS, IF NECESSARY.
13. EXHAUST STACK MUST BE A MINIMUM OF 2 FEET ABOVE THE FINISHED ROOF FLOOR, ABOVE THE PARAPET, MINIMUM 10 FEET ABOVE GROUND LEVEL, MINIMUM 10 FEET AWAY FROM ANY OPENING THAT IS LESS THAN 2 FEET BELOW THE EXHAUST POINT, AND MINIMUM 10 FEET FROM ADJOINING OR ADJACENT BUILDINGS, OPERABLE WINDOWS, HEATING VENTILATION AND AIR CONDITIONING (HVAC) INTAKES, SUPPLY REGISTERS , OR ANY OTHER INLETS.
14. INSTALL RAIN GUARD OR CAP ON THE EXHAUST POINT.

FAN NOTES:

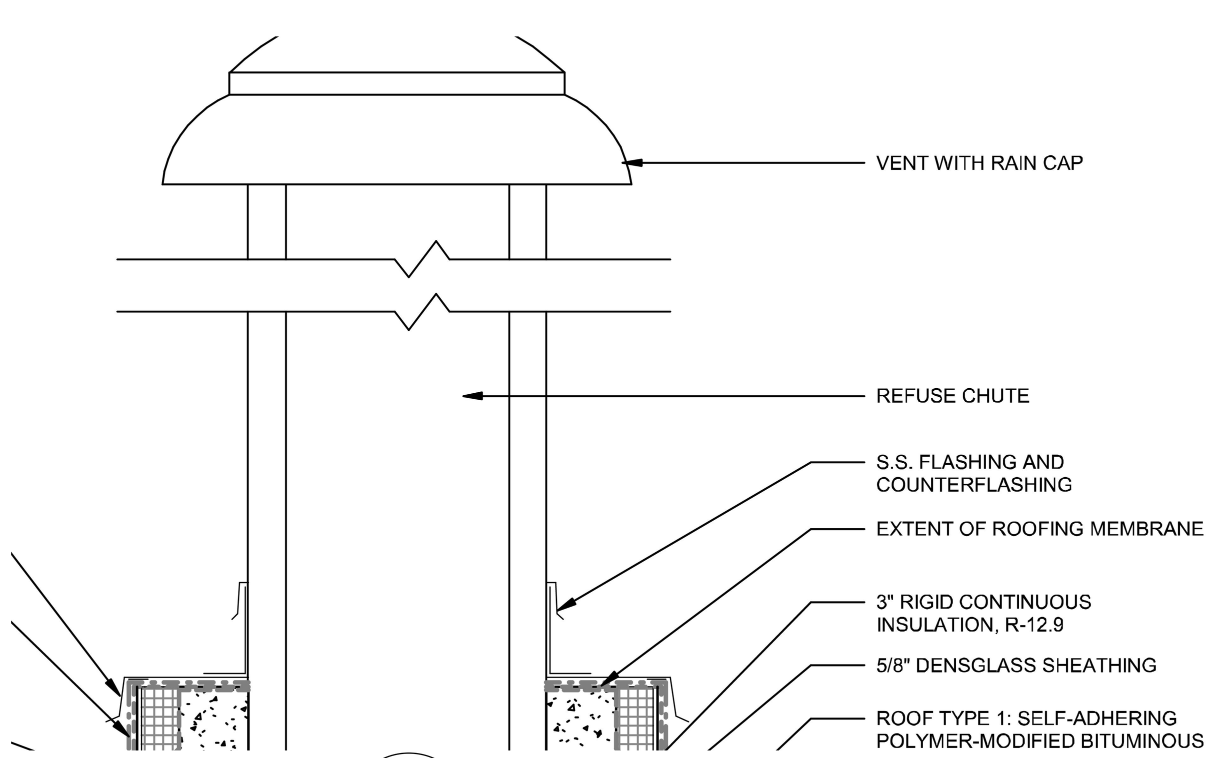
1. THE SUCTION FAN SCHEMATICS AND DETAILS ARE SHOWN TO ILLUSTRATE THE REQUIRED COMPONENTS AND THE GENERAL LOCATIONS IN THE PIPING RUN AND SHALL NOT BE CONSIDERED ACCURATE. THE ACTUAL CONFIGURATION AND DIMENSIONS OF THE SUCTION FAN ASSEMBLY WILL VARY BASED ON MANUFACTURING METHODS AND FIELD CONDITIONS. FINAL DESIGN AND SUCTION FAN SYSTEM SELECTED SHALL BE DETAILED IN SUBMISSIONS TO THE ENGINEER AND ARE SUBJECT TO APPROVAL. CONTRACTOR SHALL PROVIDE ALL SUCTION FAN SPECIFICATIONS AND CUT SHEETS TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
2. CONTRACTOR TO PROVIDE CONNECTION TO GROUNDING FOR ROOFTOP FAN. CONTRACTOR TO PROVIDE SOUND ENCLOSURE IF REQUIRED TO MEET NEW YORK CITY NOISE CODE AND/OR FURTHER ATTENUATE NOISE FOR NEARBY RESIDENTIAL UNITS. COORDINATE BLOWER SOUND AND/OR VIBRATION ATTENUATION REQUIREMENTS WITH ARCHITECT AND ACOUSTICAL CONSULTANT.
3. THE COMPOSITE BLOWER ASSEMBLY INCLUDING BLOWER, MOTOR, BASEPLATE, CONTROL PANEL, REMOTE VISUAL ALARM, VALVES, GAUGES, FILTER, AND FLEXIBLE HOSE SHALL BE PROVIDED BY THE MANUFACTURER.
4. BLOWER ASSEMBLY TO BE INSTALLED SHALL PROVIDE AT CONTINUOUS OPERATION OF A MINIMUM FLOW RATE AND VACUUM AT THE VACUUM BLOWER AS SPECIFIED IN THE FAN SCHEDULE.
5. THE BLOWER SCHEMATICS ARE SHOWN TO ILLUSTRATE THE REQUIRED COMPONENT AND THE GENERAL LOCATIONS IN THE PIPE RUN AND SHALL NOT BE CONSIDERED TO BE ACCURATE. THE ACTUAL CONFIGURATION AND DIMENSIONS OF THE BLOWER ASSEMBLY WILL VARY BASED ON MANUFACTURING METHODS AND FIELD CONDITIONS. FINAL DESIGN AND BLOWER SYSTEM SELECTED ARE SUBJECT TO APPROVAL BY THE ENGINEER. PROVIDE ALL BLOWER SPECIFICATIONS AND CUT SHEETS FOR COMMISSION AND/OR CONSTRUCTION MANAGER'S APPROVAL PRIOR TO INSTALLATION.
6. THE ELECTRICAL PANEL FOR THE BLOWERS SHALL INCLUDE AN AUXILIARY CONTACT FOR THE REMOTE ALARM AND WILL BE MOUNTED ON THE EXTERIOR OF THE SOUND ENCLOSURE. THE REMOTE ALARM SHALL BE LOCATED WITHIN THE BUILDING AND SHALL BE EASILY ACCESSIBLE. THE ALARM SHALL CONSIST OF A WARNING LIGHT AND ASSOCIATED RELAYS. THE REMOTE ALARM AND CONTROL PANEL SHALL BE CONFIGURED SUCH THAT IF THE BLOWER STOPS OPERATING, THE REMOTE ALARM WILL BE ACTIVATED. A 120V ELECTRICAL SUPPLY SHALL BE PROVIDED TO THE REMOTE ALARM (REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING (MEP) DRAWINGS FOR DESIGN OF ELECTRICAL ITEMS).
7. THE REMOTE VISUAL ALARM SHALL BE LABELED AS FOLLOWS (REFER TO MEP DRAWINGS FOR DESIGN OF ELECTRICAL ITEMS):
   - SUB-SLAB VAPOR VENTING SYSTEM ALARM
   - BLOWER MALFUNCTION IF LIT
   - SERVICE BLOWER FAN IMMEDIATELY

FAN SCHEDULE

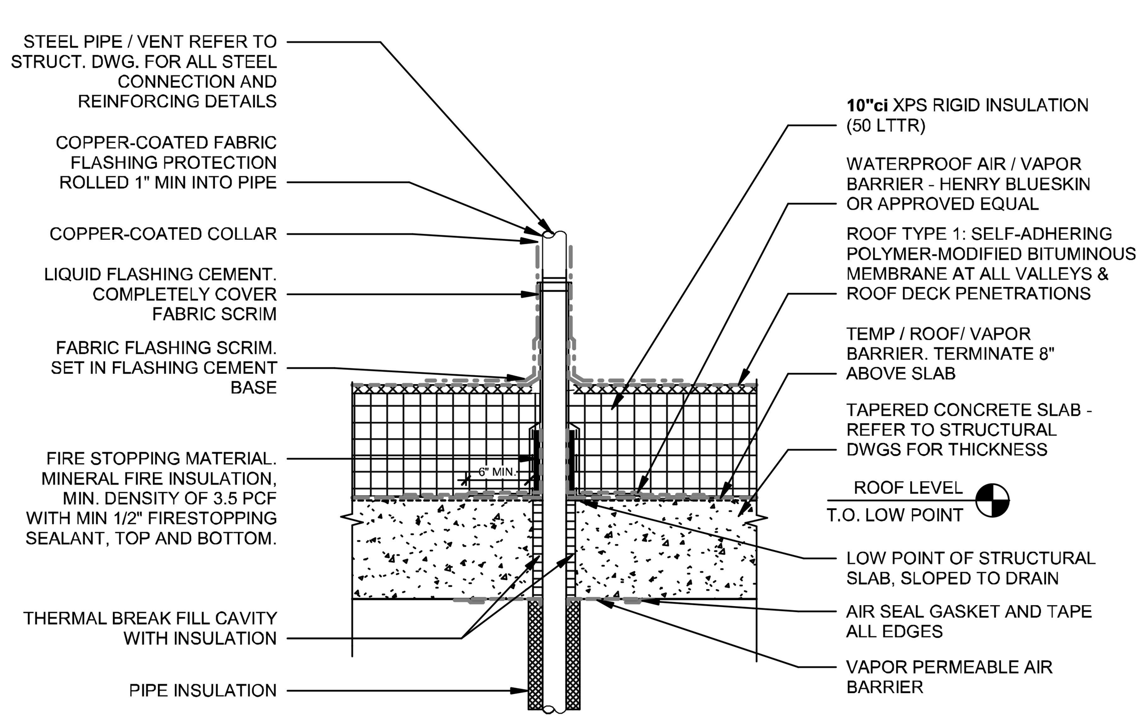
UNIT NO.	SERVICE	LOCATION	MOTOR SIZE	MINIMUM CFM	MINIMUM RATE (INCHES WC)	MOTOR REQUIREMENTS	MANUFACTURER/MODEL
1	SMDS	13TH FLOOR ROOF	700 W - 870 W	20	5.7	1 PHASE, 60 HZ, 108-132 V	OBAR GBR76-UD120-19

INSTRUMENT SCHEDULE

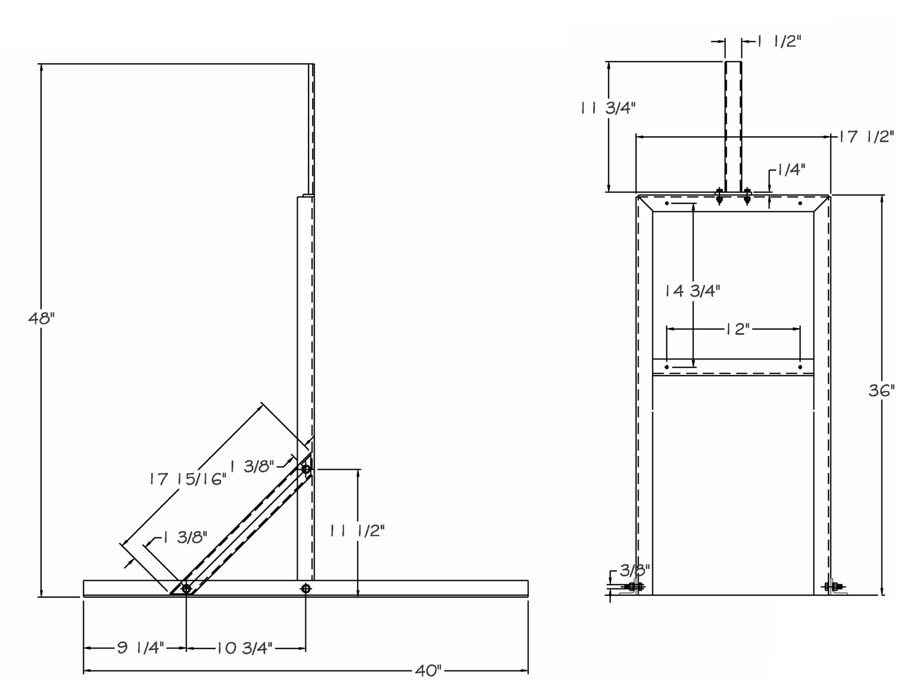
ITEM	DESCRIPTION	SERVICE	LOCATION	REQUIREMENTS	RANGE	REMARKS	MANUFACTURER/MODEL
PI-101	VACUUM GAUGE	SMDS	BLOWER INLET AND RISER PIPE AT SLAB PENETRATION	N/A	SEE DETAIL	VACUUM GAUGE ON RISER	WIKA TYPE 611.10
AIS-1	ALARM INDICATOR STATION	SMDS	TO BE DETERMINED	1 PHASE, 60 HZ, 24 VAC	N/A	TRIGGERS IF NO POWER TO BLOWER CONNECT TO PRESSURE SWITCH	KELE RAD-1
PS-101	DIFFERENTIAL PRESSURE SWITCH	AIR	RISER PIPE AT SLAB PENETRATION	N/A	0.4-1.6 INCHES WC	CONNECT TO AIS FOR BLOWER ASSEMBLY	DWEYER INSTRUMENTS SERIES 1900, MODEL 1910-1
FAN SILENCER	SILENCER	SMDS FAN	TO BE DETERMINED	N/A	N/A	CONNECT TO FAN OUTLET	dB NOISE REDUCTION, 213-005086



2 / H-104 — TYPICAL BLOWER AND EXHAUST LAYOUT
SCALE: N.T.S.



3 / H-104 — TYPICAL ROOF PENETRATION
SCALE: N.T.S.



4 / H-104 — TYPICAL BLOWER MOUNTING AND SUPPORT
SCALE: N.T.S.

NOTES:

1. DETAIL REFERENCED FROM TYPICAL ROOFING DETAILS, DATED APRIL 16, 2026 PROVIDED BY AUFGANG.

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

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BROOKLYN, NY

BLOCK: 3062 LOT: 12, 33 & 34

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Elevator Consultant
VDA, INC.:
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East Hanover, NJ 07936
973.994.9220

DATE	SUBMISSIONS / REVISIONS
05/21/26	ISSUED TO DOB

SHEET TITLE:

SUB–MEMBRANE DEPRESSURIZATION SYSTEM BLOWER PLAN AND DETAILS

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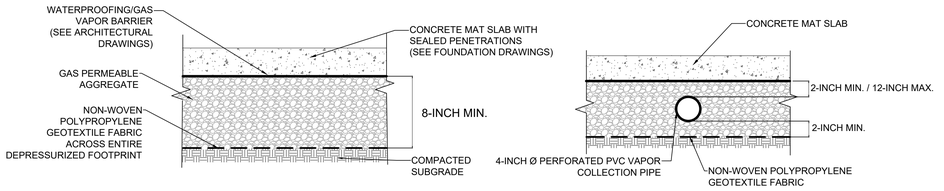
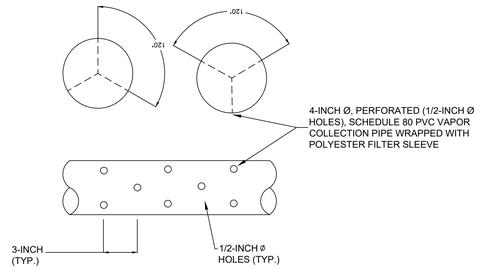
SEAL & SIGNATURE
STATE OF NEW YORK — GERALD F. NICHOLLS — 092433 — LICENSED PROFESSIONAL ENGINEER

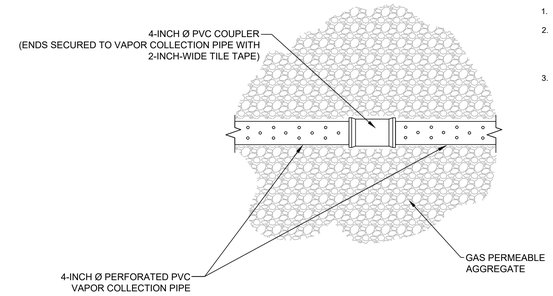
ISSUE DATE: 05/21/26
PROJECT NO:
DRAWN BY: CD
CHECKED BY: GN
SCALE:
SHEET NO: OF
DRAWING NO: H–104.00
NYC DOB NUMBER: B01283545–S9



1 H-201 TYPICAL SECTION THROUGH SUB-SLAB
SCALE: N.T.S.



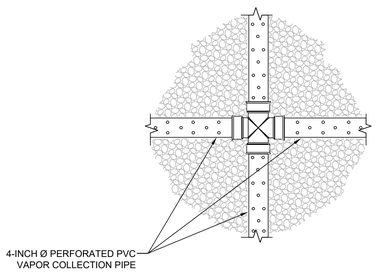
2 H-201 TYPICAL PERFORATION FOR VAPOR COLLECTION PIPE
SCALE: N.T.S.



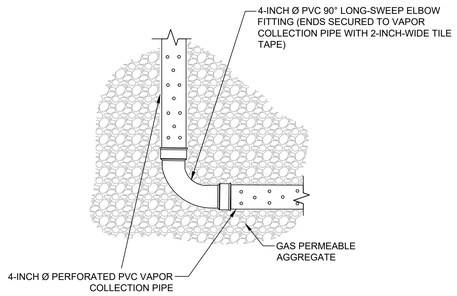
3 H-201 TYPICAL COUPLER FOR VAPOR COLLECTION PIPE
SCALE: N.T.S.

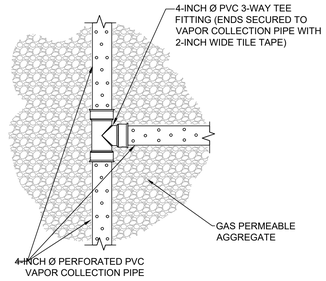
NOTES:

1. SMDS = SUB-MEMBRANE DEPRESSURIZATION SYSTEM
2. REFER TO DRAWINGS H-101.00 THROUGH H-104.00 FOR SMDS PIPING, RISER, GAS PERMEABLE AGGREGATE, AND FAN AND EXHAUST STACK LOCATIONS, DETAILS, AND SECTIONS.
3. A DIFFERENTIAL PRESSURE SWITCH SHALL BE INSTALLED ON THE RISER PIPE AT THE GROUND FLOOR PENETRATION. THE DIFFERENTIAL PRESSURE SWITCH SHALL BE CONNECTED TO THE ALARM INDICATOR SYSTEM (AIS) LOCATION TO BE DETERMINED.

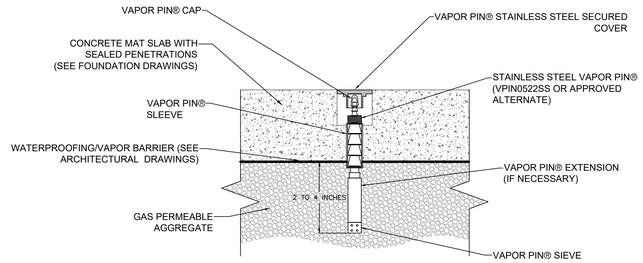


4 H-201 TYPICAL 4-WAY CONNECTION FOR VAPOR COLLECTION PIPE
SCALE: N.T.S.



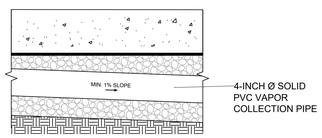


5 H-201 TYPICAL CONNECTOR FITTINGS FOR VAPOR COLLECTION PIPE
SCALE: N.T.S.



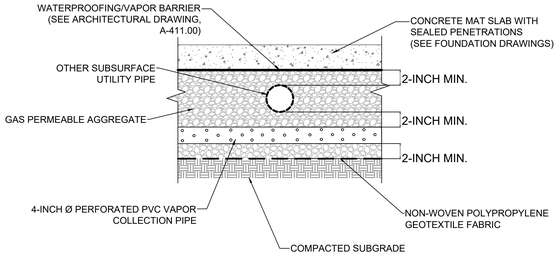
NOTE: TYPICAL CONSTRUCTION SHOWN IN THE DETAIL. CONTRACTOR MUST FOLLOW MANUFACTURER INSTRUCTIONS/MANUALS FOR ACTUAL CONSTRUCTION.

6 H-201 TYPICAL MONITORING POINT
SCALE: N.T.S.



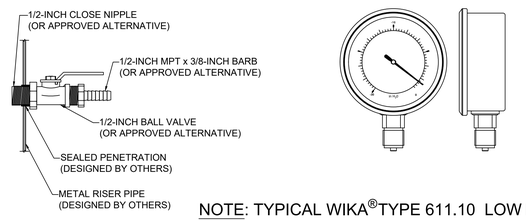
NOTE: PIPE SLOPE DISPLAYED ABOVE IS EXAGGERATED. ALL HORIZONTAL PIPE RUNS MUST BE PITCHED A MINIMUM OF 1/8-INCH VERTICAL PER FOOT HORIZONTAL (1% SLOPE) TOWARDS SMD SYSTEM PERFORATED PIPING OR TO UNDERGROUND CONDENSATE DRAIN WITHIN THE SUB-SLAB WHEN UNDERGROUND PIPING CANNOT BE SLOPED TOWARD PERFORATED PIPING. THE SYSTEM SHALL BE INSTALLED SUCH THAT NO PORTION WILL ALLOW EXCESS ACCUMULATION OF CONDENSATION.

7 H-201 TYPICAL SOLID PIPING PROFILE
SCALE: N.T.S.



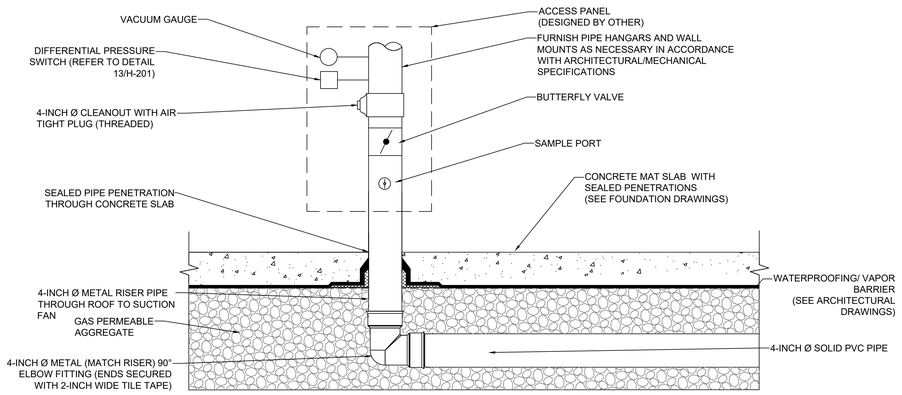
NOTE: ONLY APPLIES WHERE 4-INCH Ø PVC VAPOR COLLECTION PIPE DOES NOT FIT ABOVE UTILITY PIPE.

8 H-201 TYPICAL VAPOR COLLECTION PIPE CROSSING OTHER PIPE
SCALE: N.T.S.

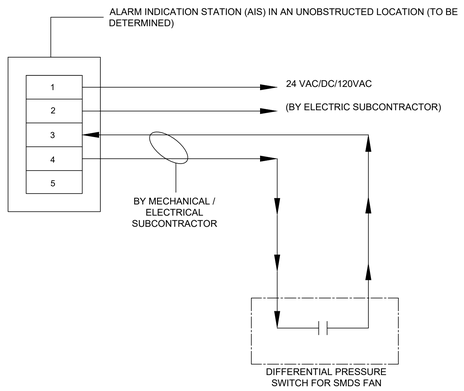


NOTE: TYPICAL WIKA®TYPE 611.10 LOW PRESSURE CAPSULE GAUGE AT THE SLAB SURFACE AND AT THE BLOWER (OR APPROVED ALTERNATE).

9 H-201 TYPICAL SAMPLE PORT AND VACUUM GAUGE
SCALE: N.T.S.



10 H-201 TYPICAL RISER SLAB PENETRATION
SCALE: N.T.S.



11 H-201 INTERCONNECTION SCHEMATIC OF DIFFERENTIAL PRESSURE SWITCH FOR SMDS FAN WITH AIS AND BMS NETWORK
SCALE: N.T.S.

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

178 MONTROSE AVE
BROOKLYN, NY

BLOCK: 3062 LOT: 12, 33 & 34

Architect:
AUFGANG,
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Suffern, NY 10901
845.368.0004
info@aufgang.com

Owner/Developer
SLATE PROPERTY GROUP:
440 Park Ave South
3rd Floor
New York, NY10016
646.439.4000

Structural Engineer
MCNAMARA SALVIA:
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10th Floor
New York, NY10036
212.246.9800

MEP Engineer
ALTERA ENGINEERING:
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Interior Designer
PARALLEL INTERIORS:
Studio Parallel Architecture
1343 Pacific Street
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Elevator Consultant
VDA, INC.:
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Box 1 Hanover, NJ 07936
973.994.9220

DATE	SUBMISSIONS / REVISIONS
05/21/26	ISSUED TO DOB

SHEET TITLE:
SUB–MEMBRANE DEPRESSURIZATION SYSTEM DETAILS

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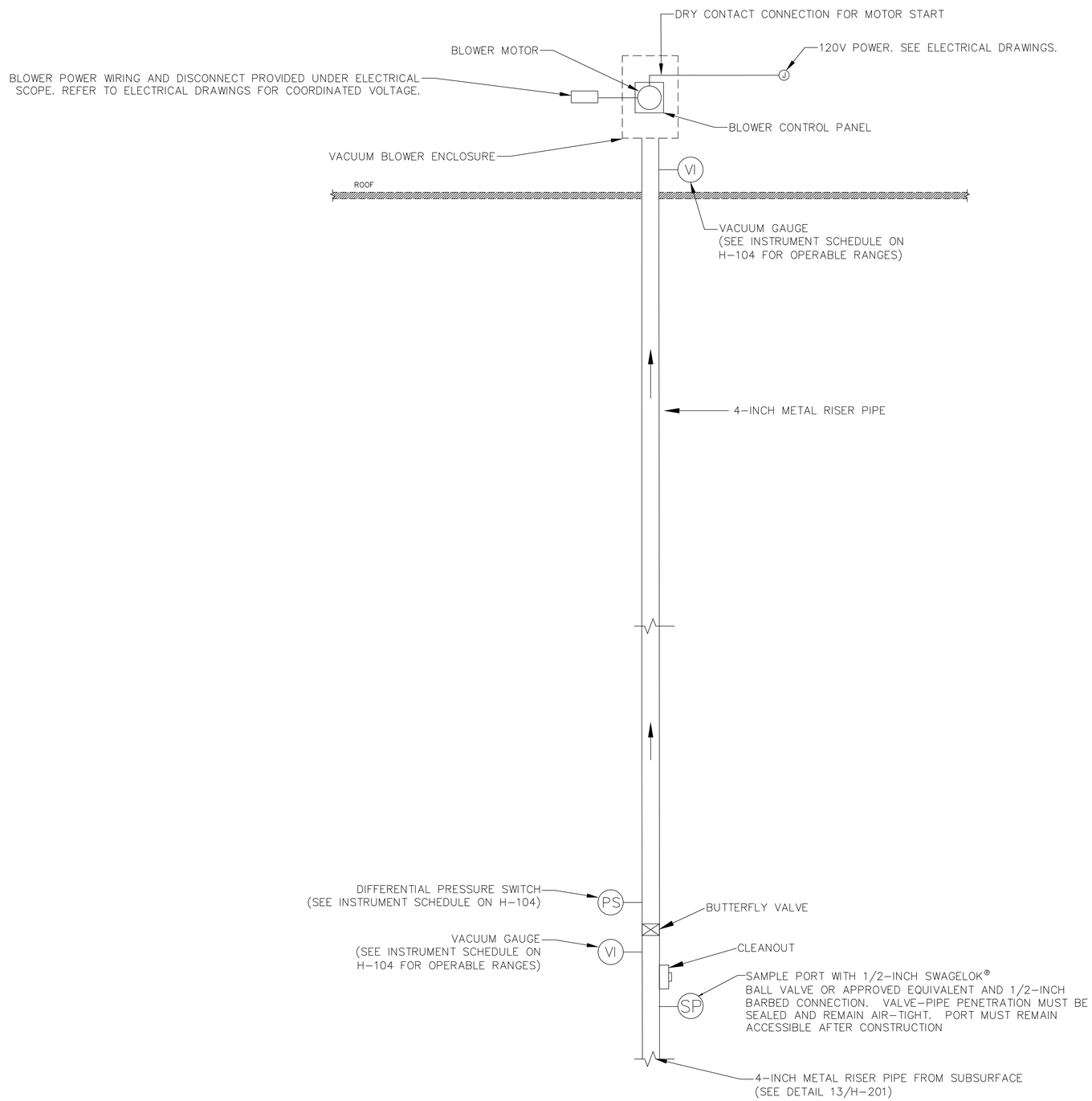
SEAL & SIGNATURE
STATE OF NEW YORK · GERALD F. NICHOLLS · 092433 · LICENSED PROFESSIONAL ENGINEER

ISSUE DATE: 05/21/26
PROJECT NO:
DRAWN BY: CD
CHECKED BY: GN
SCALE:
SHEET NO: OF
DRAWING NO: H–201.00
NYC DOB NUMBER: B01283545–S9

NOTES:

1. EXTENSION OF THE DEPRESSURIZATION SYSTEM PIPING MUST BE COORDINATED WITH STRUCTURAL ENGINEERS AND ARCHITECTS IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES.



1 / H-202 TYPICAL SUB-MEMBRANE DEPRESSURIZATION SYSTEM ABOVE GRADE PROCESS EQUIPMENT SCHEMATIC

SCALE: N.T.S.

PROPOSED NEW DEVELOPMENT FOR

178 MONTROSE AVE

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BROOKLYN, NY

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SUB-MEMBRANE DEPRESSURIZATION SYSTEM DETAILS

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SEAL & SIGNATURE

STATE OF NEW YORK · GERALD T. NICHOLLS · 092433 · LICENSED PROFESSIONAL ENGINEER

ISSUE DATE: 05/21/26

PROJECT NO:

DRAWN BY: CD

CHECKED BY: GN

SCALE:

SHEET NO: OF

DRAWING NO: H-202.00

NYC DOB NUMBER: B01283545-S9

COMPLIANCE WITH NYCECC 2025

ITEM DESCRIPTION	CODE PRESCRIPTIVE VALUE & CITATION	PROPOSED DESIGN VALUE	SUPPORTING DOCUMENTATION
SUB-MEMBRANE DEPRESSURIZATION (SMD) SYSTEM	N/A	N/A	H-001.00, H-100.00 THROUGH H-104.00, H-201.00, AND H-202.00

TO THE BEST OF MY KNOWLEDGE, BELIEF, AND PROFESSIONAL JUDGEMENT, ALL WORK UNDER THIS APPLICATION IS IN COMPLIANCE WITH 2025 NYCECC BY APPLICATION OF ASHRAE 90.1-2025 AS MODIFIED BY APPENDIX CA.

THE SUB-MEMBRANE DEPRESSURIZATION SYSTEM COMPLIES WITH THE REQUIREMENTS OF THE 2022 NYC MECHANICAL CODE SECTION 512, "SUBSLAB SOIL EXHAUST SYSTEMS" AND IS NOT SUBJECT TO THE ASHRAE 90.1, SECTION 6.5.3.1.1 REQUIREMENTS.

SUB-MEMBRANE DEPRESSURIZATION SYSTEMS ARE NOT ASSOCIATED WITH SYSTEMS PROVIDING HEATING OR COOLING CAPABILITY, AND DO NOT QUALIFY AS A REGULATED SYSTEM UNDER THE CRITERIA SET OUT PER ASHRAE 90.1, SECTION 6.5.3.1.1.

PER DEFINITION IN CODE SECTION 3.2 OF NEW YORK CITY ENERGY CODE 2020, SUB-MEMBRANE DEPRESSURIZATION SYSTEMS ARE CONSIDERED PROCESS ENERGY BECAUSE THEIR OPERATION SUPPORTS A PROCESS OTHER THAN CONDITIONING SPACES AND MAINTAINING COMFORT AND AMENITIES FOR THE BUILDING OCCUPANTS; SUB-MEMBRANE DEPRESSURIZATION SYSTEMS ARE THEREFORE NOT SUBJECT TO ASHRAE 90.1, SECTION 6.5.3.1.1 REQUIREMENTS.

ENERGY CODE PROGRESS INSPECTION

IID	INSPECTION/TEST	PERIODIC (MINIMUM)	REFERENCE STANDARD (SEE ECC CHAPTER C6) OR OTHER CRITERIA	ECC OR OTHER CITATION	INSPECTION DESCRIPTION
IDD1	MAINTENANCE INFORMATION	PRIOR TO SIGN-OFF OR ISSUANCE OF FINAL CERTIFICATE OF OCCUPANCY	APPROVED CONSTRUCTION DOCUMENTS, INCLUDING ELECTRICAL DRAWINGS WHERE APPLICABLE; ASHRAE GUIDELINE 4: PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS	ASHRAE 90.1 - 4.2.2.3, 6.7.2.2, 6.7.2.3.5.2, 8.7.2, 9.7.2.2, 9.4.3.2.2	MAINTENANCE MANUALS FOR MECHANICAL, SERVICE HOT WATER AND ELECTRICAL EQUIPMENT AND SYSTEMS REQUIRING PREVENTIVE MAINTENANCE MUST BE REVIEWED FOR APPLICABILITY TO INSTALLED EQUIPMENT AND SYSTEMS BEFORE SUCH MANUALS ARE PROVIDED TO THE OWNER. LABELS REQUIRED FOR SUCH EQUIPMENT OR SYSTEMS MUST BE INSPECTED FOR ACCURACY AND COMPLETENESS.

GENERAL NOTES

1. REFER TO THE ENERGY CODE SUBMISSIONS UNDER NEW BUILDING APPLICATION NO. B01283545-11/S9 FOR THE FULL ENERGY MODEL SUBMISSION FOR THE BUILDING.

PROPOSED NEW DEVELOPMENT FOR

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Suite 301
Suffern, NY 10901
845.368.0004
info@aufgang.com

Owner/Developer
SLATE PROPERTY GROUP:
440 Park Ave South
3rd Floor
New York, NY10016
646.439.4000

Structural Engineer
MCNAMARA SALVIA:
45 West 45th
10th Floor
New York, NY10036
212.246.9800

MEP Engineer
ALTERA ENGINEERING:
1460 Broadway
7th Floor
New York, NY10036
212.330.7634

Civil Engineer
CIVIL DESIGN WORKS:
254 South Main
Suite 308
New City, NY 10956
845.266.6441

Interior Designer
PARALLEL INTERIORS:
Studio Parallel Architecture
1343 Pacific Street
Brooklyn
917.569.8685

Elevator Consultant
VDA, INC.:
120 Eagle Rock Avenue, Suite
Box 1 Hanover, NJ 07936
973.994.9220

DATE	SUBMISSIONS / REVISIONS
05/21/26	ISSUED TO DOB

SHEET TITLE:

ENERGY CODE COMPLIANCE

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STATE OF NEW YORK · GERALD F. NICHOLS · 092433 · LICENSED PROFESSIONAL ENGINEER

ISSUE DATE: 05/21/26

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CHECKED BY: GN

SCALE:

SHEET NO: OF

DRAWING NO: EN-001.00

NYC DOB NUMBER: B01283545-S9

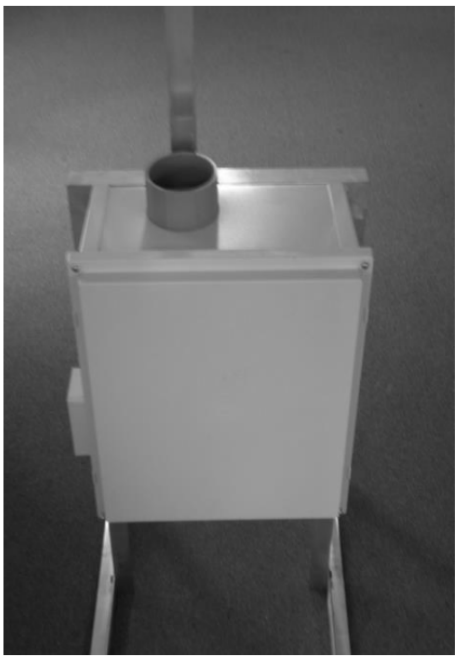
APPENDIX B

SMD SYSTEM BLOWER SPECIFICATIONS

THE OBAR GBR76

COMPACT RADIAL BLOWER

Based on 25 years of experience and 2 years of research and development, the patent pending GBR series of compact radial blowers provide the perfect combination of performance and design.



GBR76 WITH ROOF MOUNT

PERFORMANCE

- GBR76 SOE 16” WC @ 0 Max flow 155 CFM.
- GBR76 UD 40” WC @ 0 Max flow 195 CFM.
- Built in speed control to customize performance.
- Condensate bypass built in.
- 12 month warranty - 40,000 hr sealed bearings.

DESIGN

- Our modular design means the blower and manifold assembly can be removed and replaced as a unit. This makes repairs cost effective and easy and allows contractors to upgrade systems simply by swapping assemblies.
- The GBR series is based on a bypass blower designed to handle combustible materials.
- The housing is not required to be air tight, so you can add gauges and alarms without compromising the system.
- Built in condensate bypass.
- Built in speed control.
- Quick disconnect electrical harness.
- All UL listed components including UL listed enclosure for outside use.
- Wall fastening lugs included.
- GBR series roof and wall mounts available to quickly configure the blowers for your installation while providing a custom built look.
- Compact design 16”x 14”x 8” weighing only 18 lbs.
- 3” schedule 40 inlet and exhaust.
- Universal Drive model accepts voltage from 120-240V without alteration

OBAR SYSTEMS INC 2969 ROUTE 23 SOUTH NEWFOUNDLAND NJ 07435 800 949 6227

GBR76 SOE	0”	2”	4”	6”	8”	10”	12”	16”	Wattage
SOE 16	150	140	129	118	105	90	75	35	150-320
SOE 12	125	115	100	83	62	39	0		110-200
SOE 8	105	90	70	42	0				60-120
SOE 4	75	50	0						37-50

GBR SOE performance using built in potentiometer set at sealed vacuums of 16, 12, 8, and 4” WC

GBR76 UD	0”	10”	20”	30”	37”	Wattage
110V	195	158	118	63	20	700-870
220V	197	162	130	89	50	800-1100

Blower Specifications

GBR76 SOE

- **Input Voltage Range:** 108-132 Volts AC RMS, 50/60 Hz, single phase.
- **Input Current:** 6 amps AC RMS
- **Operating Temperature (Ambient Air and Working Air):** 0°C to 50°C
- **Storage Temperature:** -40°C to 85°C
- **Dielectric Testing:** 1500 Volts AC RMS 60 Hz applied for one second between input pins and ground, 3mA leakage maximum.
- **Speed Control Methods:** PWM (Pulse Width Modulation) (1 kHz to 10 kHz)
  0 to 10 VDC speed control.
  Mechanical: A potentiometer is available for speed control of the blower. The potentiometer can be preset for a specific speed. Access for speed adjustment located in motor housing.
- **Approximate Weight:** 4.8 Lbs. / 2.2 Kg
- **Regulatory Agency Certification:** Underwriters Laboratories Inc. UL507 Recognized under File E94403 and compliant under the CE Low Voltage Directive 2006/95/EC.
- **Design Features:** Designed to provide variable airflow for low NOx & CO emission in high efficiency gas fired combustion systems. Built with non-sparking materials. Blower housing assembly constructed of die cast aluminum. Impeller constructed from hardened aluminum. Rubber isolation mounts built into blower construction to dampen vibration within the motor. Two piece blower housing assembly sealed with O-ring gasket for combustion applications. Customer is responsible to check for any leakage once the blower is installed into the final application.
- **Miscellaneous:** Blower inlet, discharge, and all motor cooling inlet and discharge vents must not be obstructed. Motor ventilation air to be free of oils and other foreign particles, (i.e. breathing quality air). Blower is to be mounted so ventilation air cannot be re-circulated.
  POWER CONNECTION: Blower connector, AMP Universal MATE-N-LOK, part no. 1-350943-0.
  SPEED CONNECTION: Blower connector, Molex Mini-Fit Jr., part no. 39-30-3056.
  Mating harnesses available upon request.

GBR76 UD

- **Input Voltage Range:** 100-240 Volts AC RMS, 50/60 Hz, single phase.
- **input Current:** 10 amps AC RMS
- **Operating Temperature (Ambient Air and Working Air):** 0°C to 50°C
- **Storage Temperature:** -40°C to 85°C
- **Dielectric Testing:** 1800 Volts AC RMS 60 Hz applied for one second between input pins and ground, 3mA leakage maximum.
- **Speed Control Methods:** Mechanical- A potentiometer is provided for speed control of the blower. The potentiometer can be preset for specific speed. Access for speed adjustment located inside motor housing.
- **Approximate Weight:** 4.8 Lbs. / 2.2 Kg
- **Regulatory Agency Certification:** Underwriters Laboratories Inc. UL507 Recognized under FIle E94403 and compliant under the CE Low Voltage Directive 2006/95/EC.
- **Design Features:** Designed to provide variable airflow for low NOx & CO emission in high efficiency gas fired combustion systems. Built with non-sparking materials. Blower housing assembly constructed of die cast aluminum. Impeller constructed from hardened aluminum. Rubber isolation mounts built into blower constuction to dampen vibration within the motor. Two piece blower housing assembly sealed with O-ring gasket for combustion applications. Customer is responsible to check for any leakage once the blower is installed into the final application. **Additional Design Features:** (1) PCB coated with silicone. (2) Both bearings utilizing light contact seals. (3) Stainless steel components in working air compartment; ie shaft, washer and nut for securing the impeller, and stainless bearing thrust washer.
- **Miscellaneous:** Blower inlet, discharge, and all motor cooling inlet and discharge vents must not be obstucted. Motor ventilation air to be free of oils and other foreign particles (i.e. breathing quality air). Blower to be mounted so ventilation air cannot be re-circulated.
  POWER CONNECTION: Blower connector, AMP Universal MATE-N-LOK, part no. 350767-1 mates with customer supplied AMP connector, (PN#350766-1) with female terminals. PN#350536-3 or equivalent on 16GA, 600V rated wire
  GROUND LEAD: Amp pin terminal (350547-1) on green/yellow 18 GA. 105°C, 600V rated wire.

Enclosure Specifications

Ratings:

Ingress Protection (EN 60529): 66/67

Electrical insulation: Totally insulated

Halogen free (DIN/VDE 0472, Part 815): yes

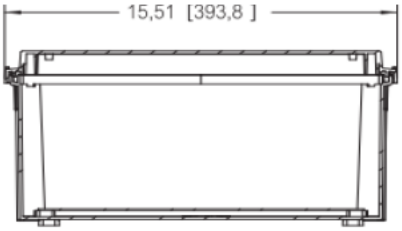
UV resistance: UL 508

Flammability Rating (UL 746 C 5): complies with UL 508

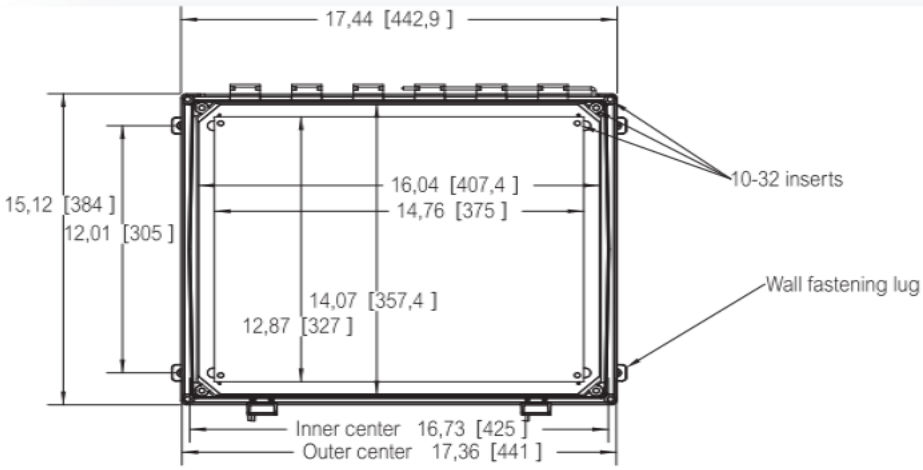
Glow Wire Test (IEC 695-2-1) °C: 960

NEMA Class: UL Type 4, 4X, 6, 6P, 12 and 13

Certificates: Underwriters Laboratories



Screw cover



Top View - cover removed

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