February 24, 2025

Daniel Nierenberg, P.G.
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7016

Re: Confirmatory Soil Vapor Intrusion Workplan
NYSDEC BCP Site No. C241219
27-10 49th Avenue, Long Island City, Queens, NY

Dear Mr. Nierenberg:

Roux Environmental Engineering and Geology, D.P.C. (Roux), on behalf of Hunters Point SG, LLC (Volunteer), has prepared this Soil Vapor Intrusion (SVI) Workplan (Workplan) for the property located at 27-10 49th Avenue, Long Island City, Queens, New York (Site). In accordance with the Remedial Action Work Plan (RAWP) dated August 2024, approved by the New York State Department of Environmental Conservation (NYSDEC) on September 30, 2024, following Soil Vapor Extraction System (SVES) Expansion commissioning, confirmatory SVI sampling (sub-slab soil vapor and indoor air) will be performed during the heating season to confirm the Sub-Slab Depressurization System (SSDS) is functioning adequately and mitigating soil vapor intrusion into the Site building. Results of the confirmatory indoor air sampling will be included in the FER.

This Workplan includes the scope and methods proposed by Roux to conduct a confirmatory SVI investigation at the Site.

Certification

I, David Kaiser, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Confirmatory Soil Vapor Intrusion Workplan 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).

Scope of Work

Roux will complete a confirmatory SVI investigation at the Site to collect NYSDEC/NYSDOH-required sub-slab soil vapor and indoor air samples during the 2024-2025 heating season. The building will be heated as it would be during regular occupancy prior to and during the sampling. The building will be vacant during the sampling. Prior to SVI sampling, negative pressure field testing of the SSDS will be performed and documented. SSDS field testing will include: Photoionization Detector (PID) readings at the monitoring points; PID readings at the effluent discharge stacks; vacuum readings at the monitoring points; and operational SSDS fan and SVE blower data. The PID used for readings will be capable of detecting part per billion (ppb). Data collected during these readings will be included in the FER and SMP.

The confirmatory SVI investigation will include the collection of two sub-slab soil vapor samples from the proposed sub-slab soil vapor monitoring points to be installed by Roux in the existing building concrete slab, as shown on Drawing 1 (attached). Each proposed sub-slab soil vapor location will be

209 Shafter Street ■ Islandia, New York 11749 ■ +1.631.232.2600 ■ www.rouxinc.com
California ■ Illinois ■ Massachusetts ■ New Jersey ■ New York ■ Texas ■ Virginia

installed directly beneath building concrete slab using a hammer drill and prefabricated, stainless-steel vapor pin, attached to Teflon-lined polyurethane tubing. Two indoor air samples will be collected from the breathing zone in areas adjacent to each proposed sub-slab monitoring point, as well as one outdoor ambient air sample. Prior to sample collection, Roux will complete an inventory of all chemicals stored in the on-Site building and complete the NYSDOH Indoor Air Quality Questionnaire and Building Inventory Form (Attachment 1). A tracer gas (e.g., helium) will be used to test the monitoring point seals and verify that indoor/ambient air is not inadvertently being drawn into the sample during sample collection. SVI purge and seal verification data will be collected and documented on field logs for inclusion in subsequent report documentation (including vapor point purge air PID readings, tracer gas readings, etc.). Following tracer gas verification, sub-slab soil vapor, indoor air, and outdoor air samples will be collected in accordance with the NYSDOH Guidance. Samples will be collected at each sub-slab soil vapor, indoor air, and ambient outdoor air location over an 8-hour period using laboratory-supplied Summa canisters and calibrated flow controllers. Flow rates for both purging and collecting will not exceed 0.2 liters per minute to minimize outdoor air infiltration during sampling.

All sub-slab soil vapor, indoor air, and ambient outdoor air samples, including quality assurance/quality control sample (duplicate indoor air sample), will be sent to Alpha Analytical, Inc. (Alpha), Pace Analytical (Pace), or Eurofins Environment Testing (Eurofins), which are NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratories, under chain of custody procedures. Samples will be analyzed at a standard turnaround time and will be reported as Category B data deliverables. Scope of Work will be performed in accordance with the HASP and QAPP included in the approved August 2024 RAWP.

All sub-slab soil vapor, indoor air and ambient air samples will be analyzed for volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method TO-15/TO-15 SIM. Results of the confirmatory indoor air sampling will be included in the FER.

Should you have any questions or require further information regarding this Workplan, please do not hesitate to contact us.

Sincerely,

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.

David Kaiser, P.E. (NY)
Senior Engineer

Noelle Clarke, P.E. (NY)
Principal Engineer

Christopher Proce, C.S.P., P.G. (NY)
Principal Hydrogeologist/Vice President

ATTACHMENT 1

New York State Department of Health Indoor Air Quality Questionnaire and Building Inventory Center for Environmental Health

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	School	Commercial/Multi-use
Industrial	Church	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	crawlspace	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

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
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.

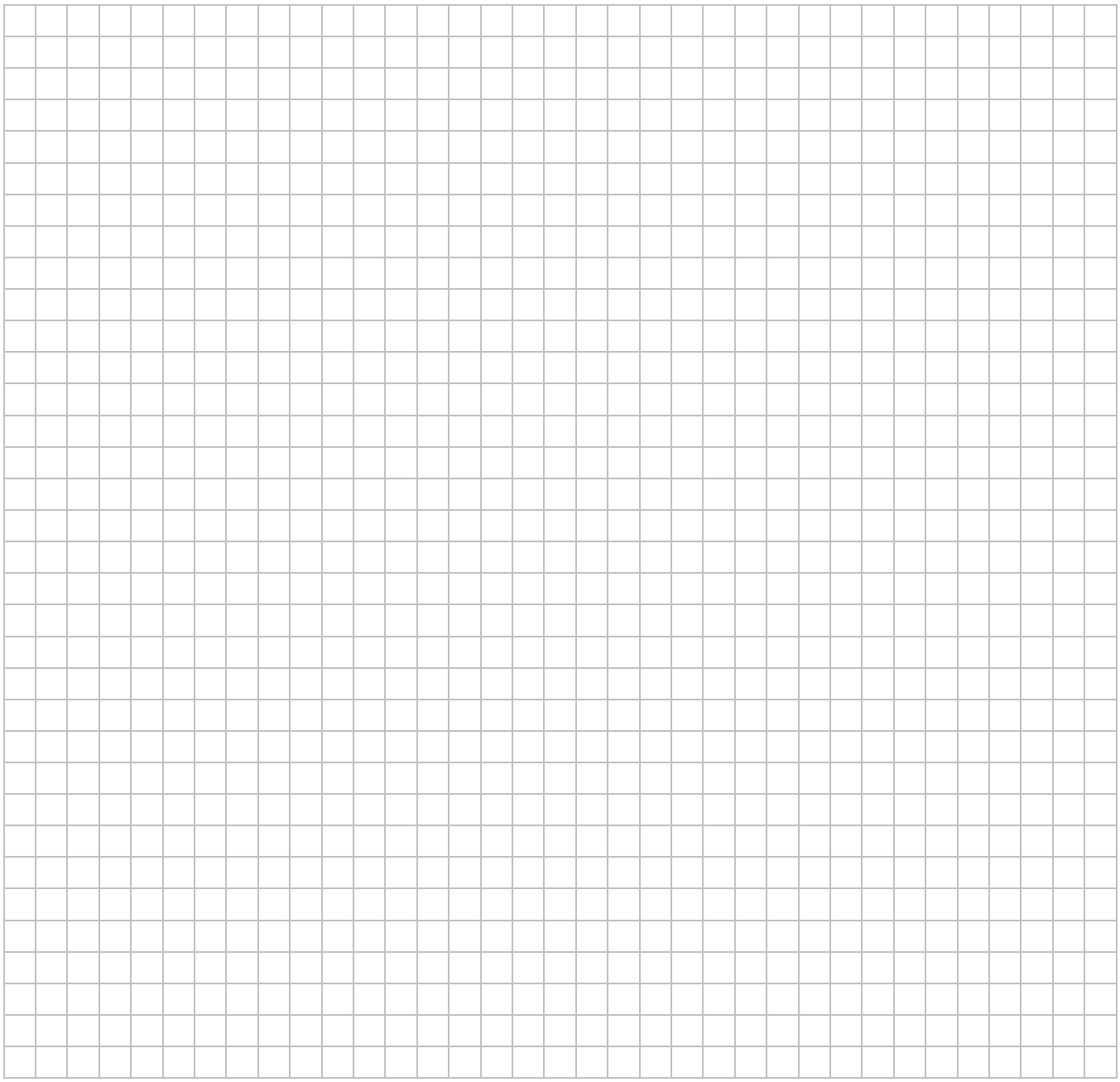
Basement:

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: _____

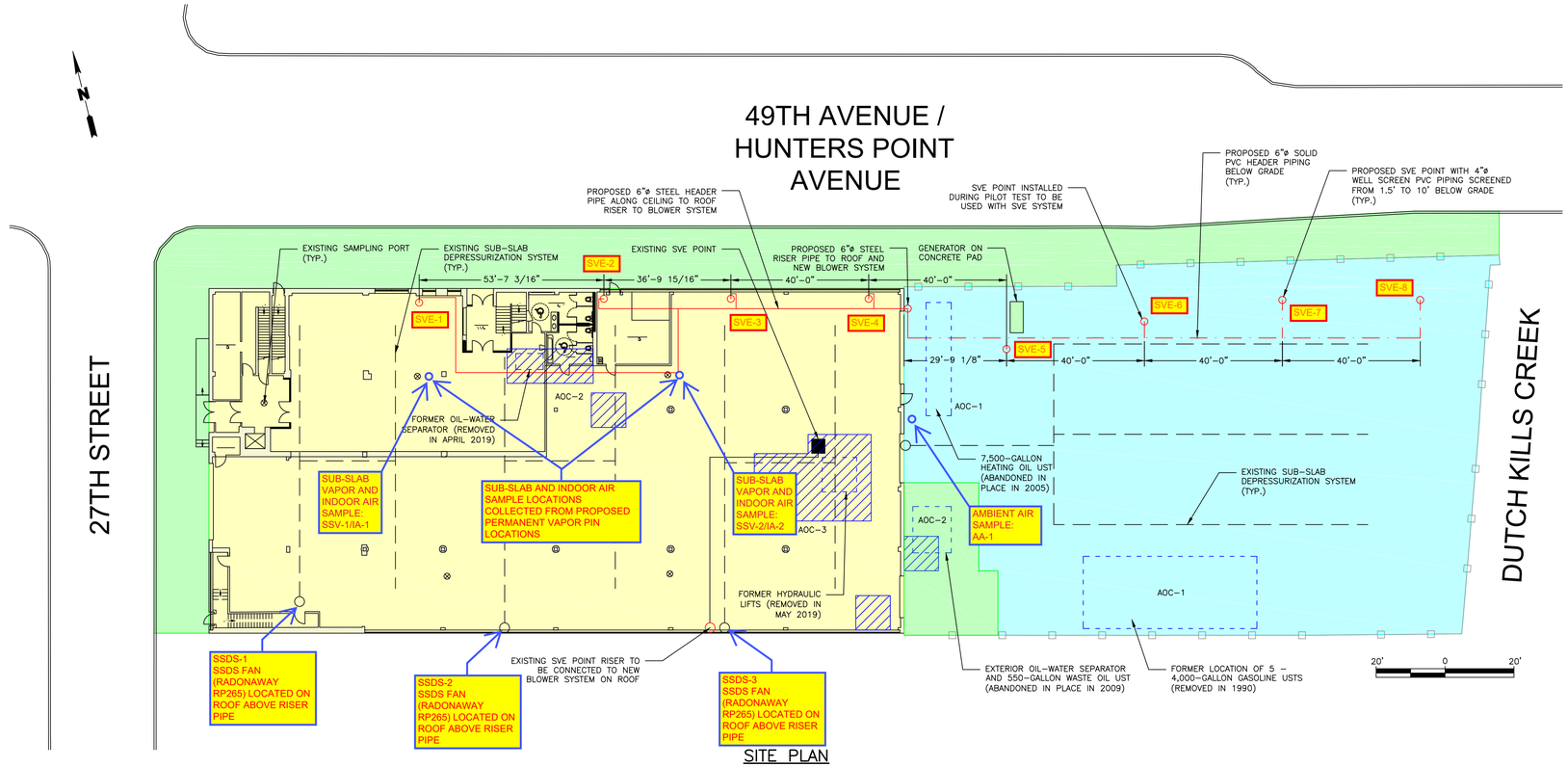
List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N

* 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.

DRAWING 1

Soil Vapor Extraction System Expansion Plan and Details



SITE PLAN

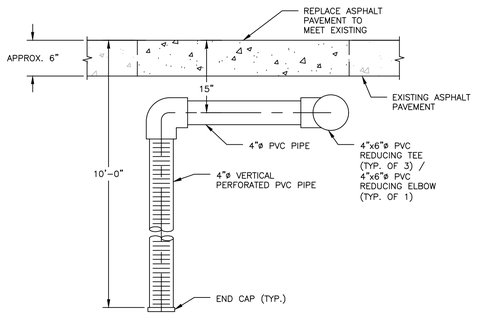
SCALE: 1" = 20'

LEGEND

- BUILDING FOUNDATION
- ASPHALT PARKING LOT
- CONCRETE PAVED AREA
- FENCE
- APPROXIMATE EXCAVATION AREAS (AS PER ATLANTIC ENVIRONMENTAL SOLUTIONS, INC.)
- APPROXIMATE TANK AREAS (AS PER ATLANTIC ENVIRONMENTAL SOLUTIONS, INC.)
- EXISTING SAMPLING PORT
- BUILDING COLUMN

SUB-SLAB DEPRESSURIZATION SYSTEM NOTES

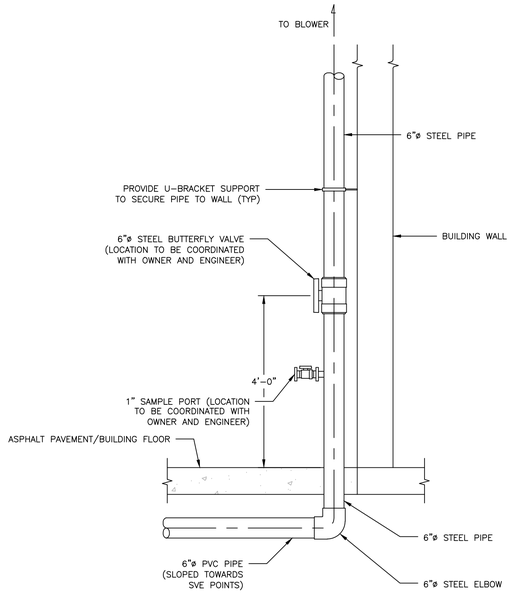
1. CONTRACTOR SHALL COORDINATE WITH PLUMBING, MECHANICAL, CIVIL AND ELECTRICAL CONTRACTORS FOR ALL UTILITY CROSSINGS.
2. THIS SOIL VAPOR EXTRACTION SYSTEM WAS DESIGNED TO MINIMIZE CROSSINGS OF ONSITE FEATURES AND STRUCTURAL FEATURES. FIELD VERIFICATION OF LOCATIONS SHOULD BE MADE TO ENSURE CROSSINGS ARE MINIMIZED.



PROFILE VIEW

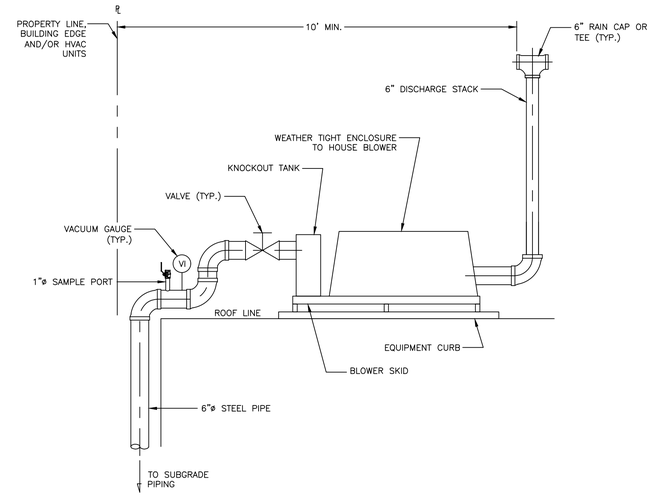
1 SOIL VAPOR EXTRACTION POINT DETAIL

SCALE: NOT TO SCALE



2 RISER DETAIL

SCALE: NOT TO SCALE



BLOWER NOTES

1. PROVIDE ELECTRICAL/CONTROL CONDUIT TO BLOWERS. COORDINATE WITH ELECTRICAL CONTRACTOR.
2. ELECTRICAL CONDUIT SHALL BE SIZED FOR 230/460 VOLT, THREE PHASE, 60 HZ, FOR THE BLOWER MOTOR.
3. SVES VENT EXHAUST SHALL BE OFFSET A MINIMUM OF 10 FEET FROM PROPERTY LINES, BUILDING EDGES, HVAC/AIR INTAKES, OPERABLE OPENINGS AND ANY OUTDOOR RECREATIONAL SPACES IN ACCORDANCE WITH NYC PLUMBING CODE CHAPTER 9 VENTS.
4. THE BLOWER SHALL BE A 10.0 HP, ATLANTIC BLOWERS AB-850 OR APPROVED EQUAL.
5. THE BLOWER SHALL BE PROVIDED WITH A WEATHER TIGHT ALUMINUM CUSTOM ENCLOSURE OR APPROVED EQUAL.
6. THE BLOWER SKID SHALL INCLUDE A WEATHER TIGHT ENCLOSURE, KNOCKOUT TANK (WITH HIGH LEVEL ALARM), VACUUM RELIEF VALVE, LOW VACUUM SWITCH, GAUGES, AND INTERCONNECTING PIPING/FITTINGS.
7. A CONTROL PANEL SHALL BE PROVIDED WITH THE BLOWER SKID. THE CONTROL PANEL SHALL HAVE GREEN OPERATING LIGHTS AND RED ALARM LIGHTS. THE CONTROL PANEL SHALL HAVE AN ALARM FOR WATER LEVEL IN KNOCKOUT TANK, LOW VACUUM AND NO POWER. THE ALARM SIGNAL SHALL BE SENT TO AN APPROPRIATE LOCATION IN THE PROPOSED BUILDING (I.E., SUPERINTENDENT'S OFFICE) AND SHALL ALSO BE AUDIBLE. THE ALARM SHALL BE A MCMASTER-CARR SIGNAL LIGHT WITH AUDIBLE ALARM (PART NO. 5753T71) OR APPROVED EQUAL.
8. PROVIDE ALL NECESSARY PIPE SUPPORTS FOR RISERS FROM THE ASPHALT PAVEMENT AND INSIDE THE BUILDING TO THE BLOWER ON THE ROOF.

3 TYPICAL BLOWER DETAIL

SCALE: NOT TO SCALE

NO.	DATE	REVISION DESCRIPTION	INT.
2	8/21/24	ADD SVE POINTS IN BUILDING	D.E.K.
1	7/29/24	ADD EXCAVATION AREAS, AOCS, LOCATIONS OF TANKS	D.E.K.

PROJ. ENGINEER: D.E.K.	DRAWN BY: D.E.K.
DESIGNED BY: D.E.K.	CHECKED BY: N.C.
DRAWING SCALE: AS SHOWN	PLOT SCALE: 1:1
DRAWING DATE: 8/21/24	PRINT TYPE: COLOR
OFFICE: NY	PAPER SIZE: ARCH D
PROJECT NO.: 3446.0008Y000	
DRAWING FILE: 3446.0008Y106.05-REV2.DWG	

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PROJECT NAME:
27-10 49TH AVENUE, QUEENS, NY
NYSDEC BCP SITE NO. C241219

PROJECT FOR:
HUNTERS POINT SG, LLC
10 W FOREST AVENUE, ENGLEWOOD, NJ

TITLE:
SOIL VAPOR EXTRACTION SYSTEM EXPANSION PLAN AND DETAILS

DRAWING NO.
1
DRAWING 1 OF 1

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