DECISION DOCUMENT

11-20 46th Road Site
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241242
December 2021

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

11-20 46th Road Site
Brownfield Cleanup Program
Long Island City, Queens County
Site No. C241242
December 2021

Statement of Purpose and Basis

This document presents the remedy for the 11-20 46th Road Site a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the 11-20 46th Road Site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Green Remediation

Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste. Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. No Further Action

Based on the results of the investigations at the site, the Interim Remedial Measure (IRM) that has been performed, and the evaluation presented here, the Department has selected No Further Action as the remedy for the site. This No Further Action remedy includes continued operation, maintenance and monitoring of the active Sub-slab Depressurization System (SSDS) and the

implementation of Institutional Controls/Engineering Controls (ICs/ECs) including an Environmental Easement, Site Management Plan, and a Cover System. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed are listed below:

3. Cover System

A site cover currently exists across the entirety of the site and will be maintained to allow for restricted residential use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper two feet of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

4. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system (SSDS) or other acceptable measures, to mitigate the migration of vapors into the building from soil and groundwater. An SSDS was installed on the current on-site building as an IRM.

5. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan

A Site Management Plan is required, which includes the following:

a) an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

- Institutional Controls: The Environmental Easement discussed in Paragraph 5.
- Engineering Controls: The cover system discussed in Paragraph 3 and the sub-slab depressurization system discussed in Paragraph 4.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and

groundwater use restrictions;

- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - a schedule for monitoring and frequency of submittals to the Department; and
   - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c) an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system(s). The plan includes, but is not limited to:
   - procedures for operating and maintaining the system(s); and
   - compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

December 21, 2021

Date

Gerard Burke, Director
Remedial Bureau B

DECISION DOCUMENT

11-20 46th Road Site
Long Island City, Queens County
Site No. C241242
December 2021

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repositories:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C241242

Queens Library Long Island City
37-44 21st Street
Long Island City, NY 11101
Phone: (718) 752-3700

Queens Community Board No. 2
43-22 50th Street, Room 2B
Woodside, NY 11377
Phone: (718) 533-8773

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Site Location:
The site is located at 11-20 46th Rd, Queens, NY and is identified as Block 56 and lot 36. The site is 0.229-acres and is bounded by 11th Street and 46th Road to the northwest, 11th Street and 47th Avenue to the southwest, Jackson Avenue and 21st Street and 47th Avenue to the southeast, and 21st Street and 46th Road to the northeast.

Site Features:
The site is occupied by a commercial building that contains a subgrade cellar and three upper levels above grade.

Current Zoning and Land Use:
The site is currently located in the M1-4/R6B District, which allows for manufacturing/residential/commercial uses. The building is currently occupied by Theracare of New York which operates the site as an office and as an educational facility for children with special needs.

Past Use of the Site:
The site was previously occupied by multiple commercial entities including Color Graphics Press, Lillian Graphics, Wayne Graphic Prod, Zenith Graphic Supply, and W&W Jewelers and Zenith Graphics Supply from 1962 to 2015.

Site Geology and Hydrogeology:
Soils at the site consist of historic fill characterized by loose fine to coarse sand mixed with varying amounts of silt, gravel, bricks, wood and ash. Organic plant material has been identified at the fill/native soil boundary. Native soil consists of stratified sand and silt. Bedrock is located between 12 and 28 feet below grade based upon boring refusal.

Groundwater is present at depths of 0.60 feet to 4.50 feet below the basement foundation slab. Groundwater generally flows to the west toward the East River in 2019 and flows to the south

towards Newtown Creek in 2020. Groundwater in this area of Queens is not used a source of potable water.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Participant. The Applicant has an obligation to address on-site and off-site contamination. Accordingly, no enforcement actions are necessary.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- air
- groundwater
- soil
- indoor air
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

benzo(a)anthracene	lead
benzo(a)pyrene	acenaphthene
benzo(b)fluoranthene	antimony
benzo(k)fluoranthene	perfluorooctane sulfonic acid
chrysene	perfluorooctanoic acid
dibenz[a,h]anthracene	cis-1,2-dichloroethene
indeno(1,2,3-cd)pyrene	trichloroethene (TCE)
arsenic	tetrachloroethene (PCE)
cadmium	vinyl chloride
copper	phenol

The contaminant(s) of concern exceed the applicable SCGs for:

- groundwater
- soil
- soil vapor intrusion

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Sub-Slab Depressurization System (SSDS) and Cover System

Based on the initial results of the RI it was determined that an off-site source of Volatile Organic Compounds (VOCs) was contributing to sub-slab soil vapor and indoor air concentrations requiring mitigation. An IRM was conducted in 2021 which included installation of an active SSDS, repair of the site cover system consisting of a new 8-inch-thick concrete slab, and application of epoxy sealant to the floor slab and sub-grade interior walls. The SSDS installation and startup was documented in an approved Construction Completion Report in July 2021.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Soil and groundwater were analyzed for VOCs, semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Soil and groundwater samples collected in 2020 were also analyzed for per- and polyfluoroalkyl substances (PFAS). Sub-slab soil vapor, indoor air, and ambient air was sampled for VOCs. Based on the investigations conducted to date, the primary contaminants of concern are SVOCs, PCBs, and metals in soil, VOCs, SVOCs, and metals in groundwater, and VOCs in soil vapor.

Soil - Several SVOCs were detected in exceedance of Restricted Residential Soil Cleanup Objectives (RRSCOs) throughout the site at 0-6 feet. These SVOCs include benzo(a)anthracene (max of 10 parts per million (ppm), RRSCO of 1 ppm), benzo(a)pyrene (max of 18 ppm, RRSCO of 1 ppm), benzo(b)fluoranthene (max of 17 ppm, RRSCO of 1 ppm), benzo(k)fluoranthene (max of 5.1 ppm, RRSCO of 3.9 ppm), chrysene (max of 9.5 ppm, RRSCO of 3.9 ppm), dibenz(a,h)anthracene (max of 2.9 ppm, RRSCO of 0.33 ppm), and indeno(1,2,3-c,d)pyrene (max of 12 ppm, RRSCO of 0.5 ppm). Several metals were detected in exceedance of RRSCOs throughout the site at 0-6 feet. These metals include arsenic (max of 25.7 ppm, RRSCO of 16 ppm), cadmium (max of 10.9 ppm, RRSCO of 4.3 ppm), copper (max of 880 ppm, RRSCO of 270 ppm), and lead (max of 2,780 ppm, RRSCO of 400). PFAS were detected at trace concentrations below the restricted residential guidance values. No VOCs, PCBs or pesticides were detected at concentrations exceeding the RRSCOs. Data does not indicate any off-site impacts in soil related to this site.

Groundwater - Multiple VOCs, SVOCs and metals were detected in wells located throughout the site exceeding ambient water quality standards (AWQS). VOCs detected include 1,2,4,5-

tetramethylbenzene (max of 14 parts per billion (ppb); AWQS of 5 ppb), 1,2-dichloroethene (total) (max of 14 ppb; AWQS of 5 ppb), cis-1,2-dichloroethene (max of 14 ppb; AWQS of 5 ppb), benzene (max of 8 ppb; AWQS of 1 ppb), isopropylbenzene (Cumene) (max of 5.2 ppb; AWQS of 5 ppb), naphthalene (max of 290 ppb; AWQS of 10 ppb), n-propylbenzene (max of 8 ppb; AWQS of 5 ppb), and vinyl chloride (max of 8 ppb; AWQS of 5 ppb). SVOCs detected include acenaphthene (max of 53 ppb; AWQS of 20 ppb), benzo(a)anthracene (max of 6 ppb; AWQS of 0.002 ppb), benzo(a)pyrene (max of 11 ppb; AWQS of ND), benzo(b)fluoranthene (max of 8 ppb; AWQS of 0.002 ppb), benzo(k)fluoranthene (max of 2 ppb; AWQS of 0.002 ppb), chrysene (max of 6.8 ppb; AWQS of 0.002 ppb), indeno(1,2,3-c,d)pyrene (max of 15 ppb; AWQS of 0.002 ppb), and phenol (max of 24 ppb; AWQS of 1 ppb). Dissolved metals detected include antimony (max of 7.99 ppb; AWQS of 3 ppb) and arsenic (max of 28.99 ppb; AWQS of 25 ppb). PFAS detections in exceedance of NYSDEC Maximum Contaminant Levels (MCLs) include perfluorooctane sulfonic acid (PFOS) (max of 351 parts per trillion (ppt); MCL of 10 ppt) and perfluorooctanoic acid (PFOA) (max of 64.3 ppt; MCL of 10 ppt). There are no public supply wells within a half mile and there is a municipal prohibition for use of groundwater at this site. Data does not indicate any off-site impacts in groundwater related to this site.

Soil Vapor - VOCs were detected at concentrations requiring mitigation in sub-slab soil vapor (SSV) and indoor air (IA) samples throughout the site and were detected at elevated concentrations in the ambient air (AA). These VOCs include carbon tetrachloride (max of 0.503 micrograms per cubic meter (ug/m^3) in IA, and 0.503 ug/m^3 in AA), cis-1,2-dichloroethene (max of 4.12 ug/m^3 in IA, 120 ug/m^3 in SSV, and 1.19 ug/m^3 in AA), TCE (max of 0.704 ug/m^3 in IA, 200 ug/m^3 in SSV, and 0.199 ug/m^3 in AA), PCE (max of 5.93 ug/m^3 in IA and 2,540 ug/m^3 in SSV), methylene chloride (max of 0.194 ug/m^3 in IA, 9.03 ug/m^3 in SSV, and 2.23 ug/m^3 in AA), and vinyl chloride (max of 0.194 ug/m^3 in IA and 111 ug/m^3 in SSV). Data does not indicate any off-site impacts in soil vapor related to the site.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

Direct contact with contaminants in the soil is unlikely because the site is covered by a building and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in soil vapor (air spaces within the soil) may move into buildings and affect indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. A sub-slab depressurization system was installed in the on-site building to prevent vapors from beneath the slab from entering the building. An activated carbon filtration unit has been installed in a basement utility room for additional protection and treatment of potential sub-slab vapors that may enter the building. Environmental sampling indicates soil vapor intrusion is not a concern for off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the Cover System and Vapor Mitigation remedy.

The elements of the selected remedy, as shown in Figure 2, are as follows:

1. Green Remediation

Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gas and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;

- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste. Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings will include, at a minimum, a 20-mil vapor barrier/waterproofing membrane on the foundation to improve energy efficiency as an element of construction.

2. No Further Action

Based on the results of the investigations at the site, the Interim remedial Measure (IRM) that has been performed, and the evaluation presented here, the Department has selected No Further Action as the remedy for the site. This No Further Action remedy includes continued operation, maintenance and monitoring of the active Sub-slab Depressurization System (SSDS) and the implementation of Institutional Controls/Engineering Controls (ICs/ECs) including an Environmental Easement, Site Management Plan, and a Cover System. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed are listed below:

3. Cover System

A site cover currently exists across the entirety of the site and will be maintained to allow for restricted residential use of the site. Any site redevelopment will maintain the existing site cover. The site cover may include paved surface parking areas, sidewalks or soil where the upper two feet of exposed surface soil meets the applicable soil cleanup objectives (SCOs) for restricted residential use. Any fill material brought to the site will meet the requirements for the identified site use as set forth in 6NYCRR part 375-6.7(d).

4. Vapor Mitigation

Any on-site buildings will be required to have a sub-slab depressurization system (SSDS) or other acceptable measures, to mitigate the migration of vapors into the building from soil and groundwater. An SSDS was installed on the current on-site building as an IRM.

5. Institutional Controls

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or NYCDOH; and
- require compliance with the Department approved Site Management Plan.

6. Site Management Plan

A Site Management Plan is required, which includes the following:

a) an Institutional and Engineering Control Plan that identifies all use restrictions and

engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

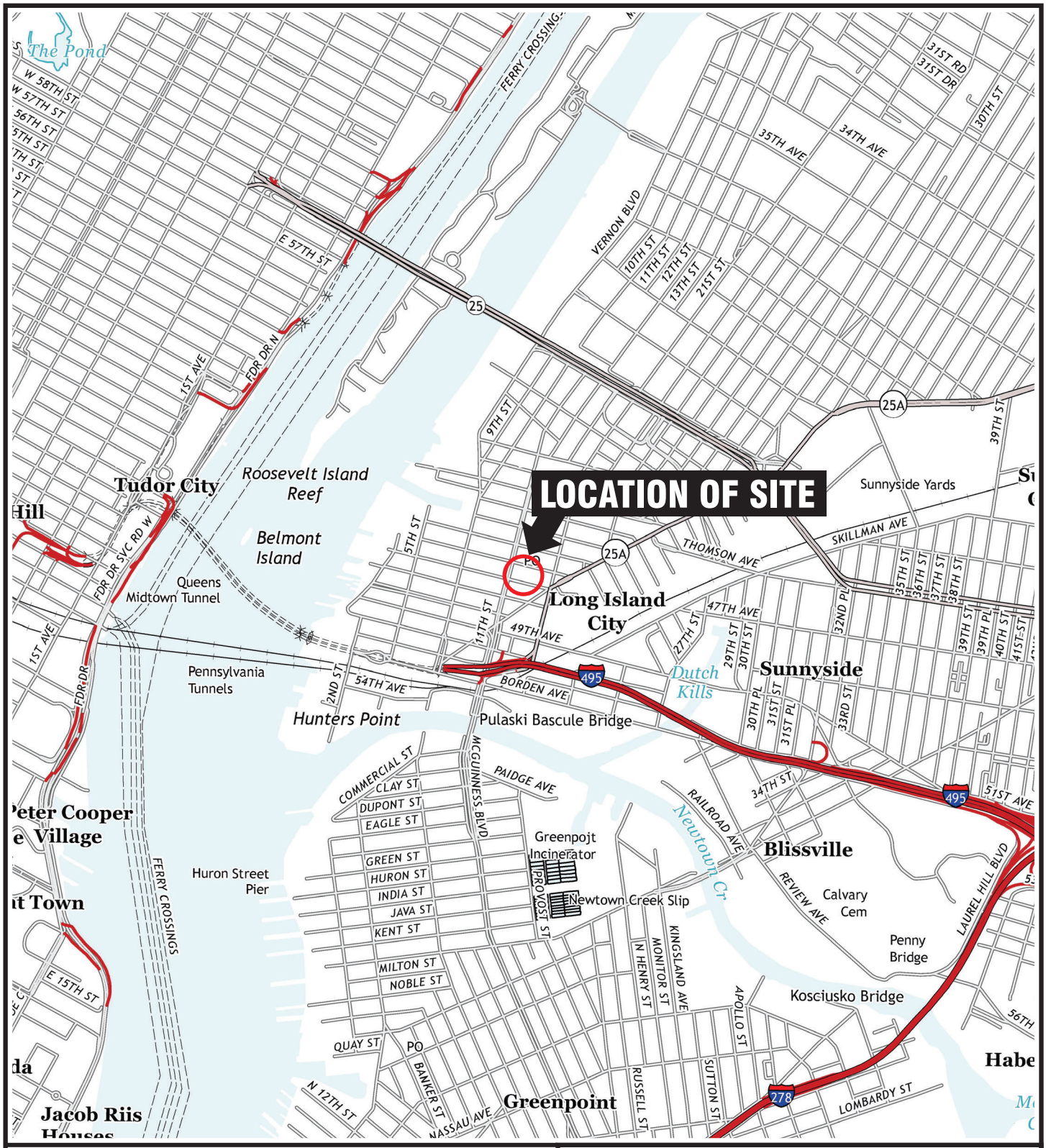
- Institutional Controls: The Environmental Easement discussed in Paragraph 5.
- Engineering Controls: The cover system discussed in Paragraph 3 and the sub-slab depressurization system discussed in Paragraph 4.

This plan includes, but may not be limited to:

- an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
- a provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Paragraph 3 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- provisions for the management and inspection of the identified engineering controls;
- maintaining site access controls and Department notification; and
- the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

b) a Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - a schedule for monitoring and frequency of submittals to the Department; and
   - monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

c) an Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, inspection, and reporting of any mechanical or physical components of the active vapor mitigation system(s). The plan includes, but is not limited to:
   - procedures for operating and maintaining the system(s); and
   - compliance inspection of the system(s) to ensure proper O&M as well as providing the data for any necessary reporting.



QUADRANGLE LOCATION

SOURCE:
USGS; 2013, Central Park, NY-NJ
7.5 Minute Topographic Quadrangle

N

0 2000'

Title:

SITE LOCATION MAP

Prepared for:

11-20 46TH ROAD OWNER LLC

ROUX

Compiled by: R.H.	Date: 08SEP21	FIGURE
Prepared by: G.M.	Scale AS SHOWN	1
Project Mgr: R.L.	Project: 3371.0001Y000	
File: 3371.0001Y139.06.CDR		

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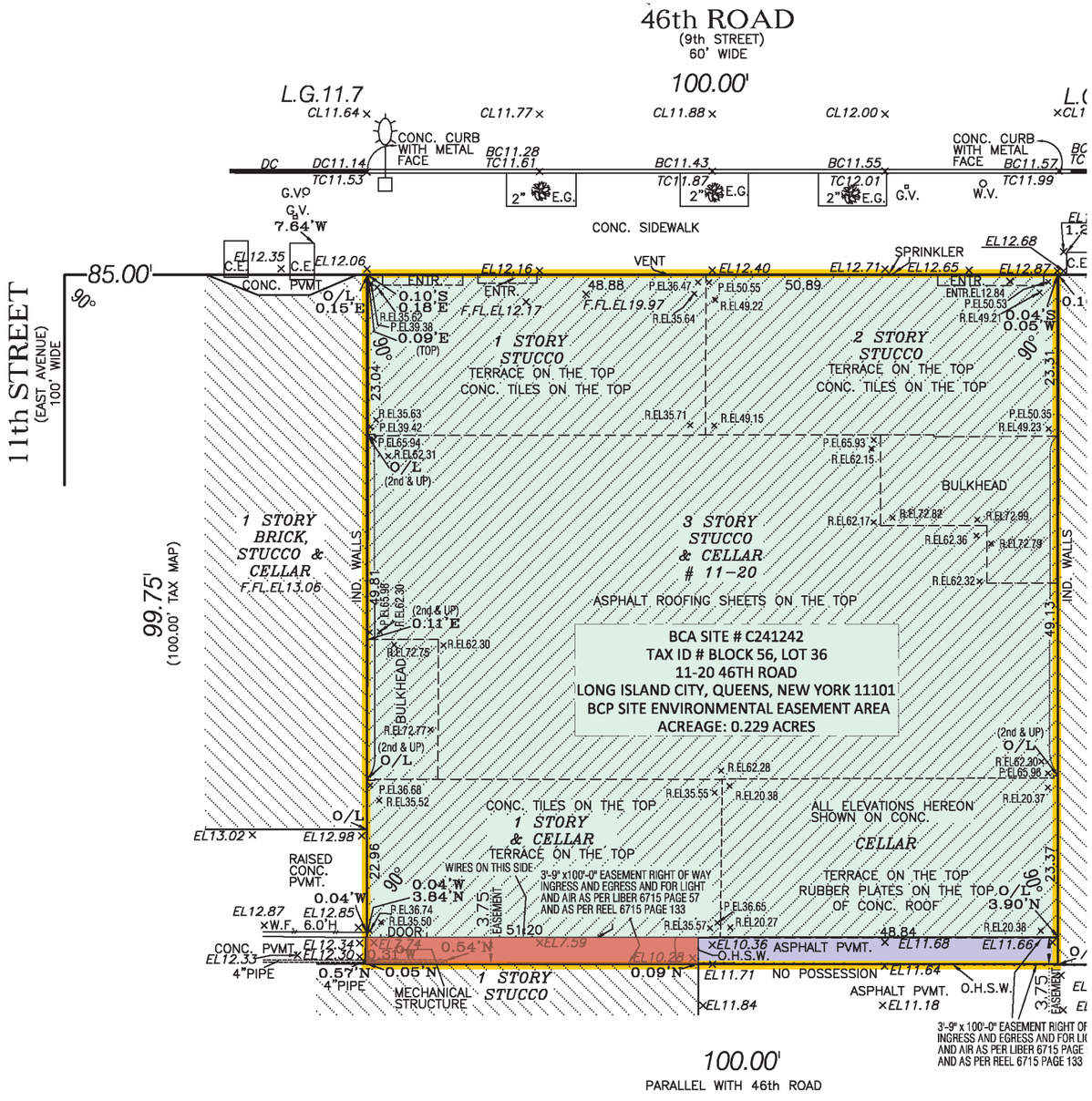
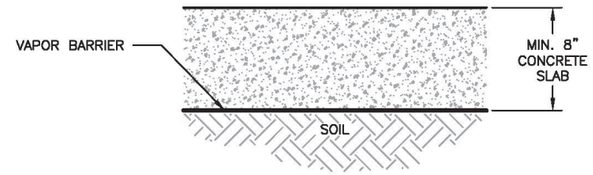
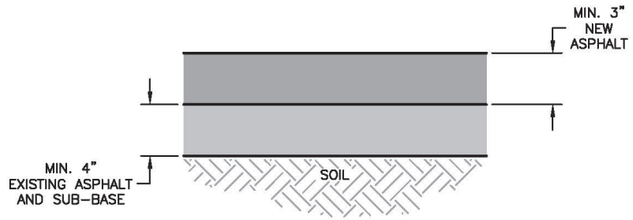


LEGEND

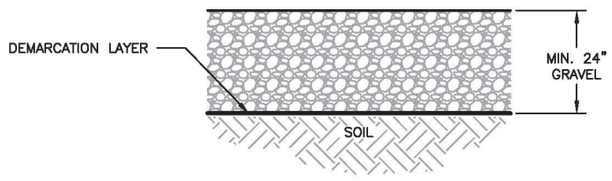
- SITE BOUNDARY
- MINIMUM 8-INCH THICK CONCRETE CELLAR SLAB
- ASPHALT PAVEMENT
- MINIMUM 24-INCH THICK GRAVEL



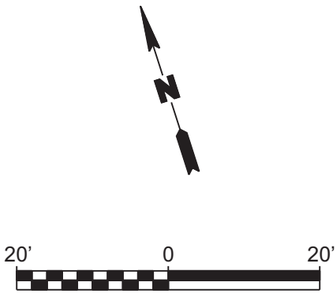
1 TYPICAL SLAB DETAIL
SCALE: NOT TO SCALE



2 TYPICAL SLAB DETAIL
SCALE: NOT TO SCALE



3 TYPICAL GRAVEL DETAIL
SCALE: NOT TO SCALE



Title:

COMPOSITE COVER SYSTEM LAYOUT

Prepared for:

11-20 46TH ROAD OWNER, LLC

ROUX

Compiled by: R.H.	Date: 08SEP21	FIGURE
Prepared by: B.H.C.	Scale: AS SHOWN	2
Project Mgr: R.H.	Project: 3371.0001Y000	
File: 3371.0001Y139.01.CDR		

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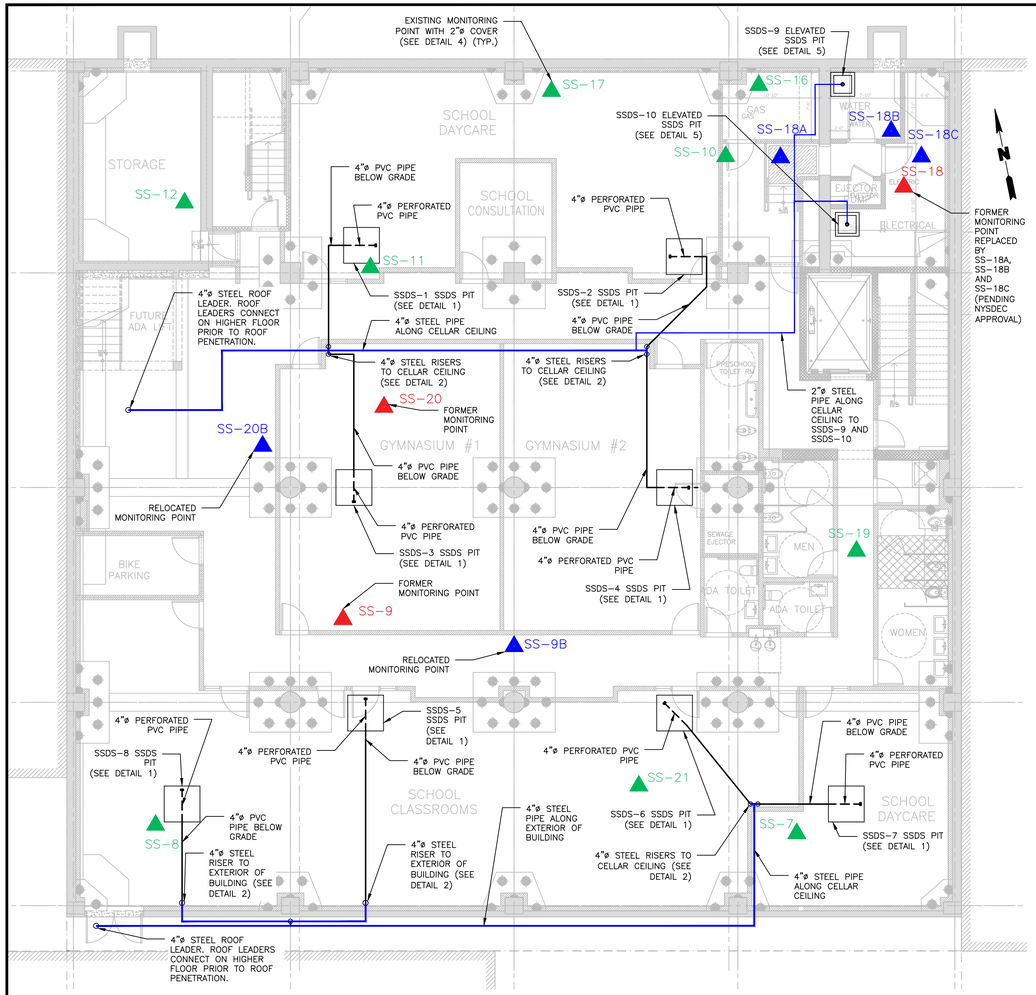


CELLAR FLOOR SITE PLAN

SCALE: 1/8" = 1'

LEGEND

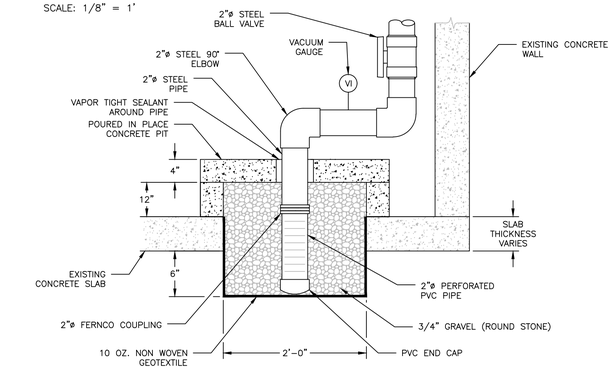
- SS-8 SOIL VAPOR MONITORING POINT
- SS-9 FORMER SOIL VAPOR MONITORING POINT
- SS-9B RELOCATED SOIL VAPOR MONITORING POINT
- 4"ø PERFORATED PVC PIPE BELOW GRADE
- 4"ø PVC PIPE BELOW GRADE
- 4"ø STEEL PIPE ALONG CELLAR CEILING
- 2"ø STEEL PIPE ALONG CELLAR CEILING

SUB-SLAB PLAN NOTES

1. CONTRACTOR COORDINATED INSTALLATION OF SUB-SLAB DEPRESSURIZATION SYSTEM WITH THE FOUNDATION, PLUMBING, MECHANICAL AND ELECTRICAL CONTRACTORS.
2. CONTRACTOR FIELD VERIFIED THE DESIGN INVERT ELEVATIONS (BOTTOM OF PIPING) FOR THE WALL PENETRATIONS. THE CONTRACTOR ALSO FIELD VERIFIED THE HORIZONTAL OFFSETS FOR THE LOCATIONS OF THE VERTICAL RISERS.

SSDS PIPE NOTES

1. CONTRACTOR COORDINATED WITH PLUMBING, MECHANICAL, CIVIL AND ELECTRICAL CONTRACTORS FOR ALL UTILITY CROSSINGS.
2. ALL SSDS PIPING WAS SLOPED TOWARDS THE PERFORATED PIPE PITS TO PREVENT ANY POTENTIAL MOISTURE BUILD UP AND BLOCKAGES.
3. THE SURFACES LINED WITH GEOTEXTILE WERE FREE OF ALL ROCKS, STONES, SHARP OBJECTS OR CONSTRUCTION DEBRIS OF ANY KIND.
4. INSTALLED GEOTEXTILE NONWOVEN FABRIC DIRECTLY ON FILL. MATERIAL OVERLAPS WERE A MINIMUM OF 12" THE OVERLAPPED SEAMS SEALED WITH TAPE.
5. ALL PENETRATIONS THROUGH THE SLAB ON GRADE (SOG) WERE SEALED USING A SILICONE BASED WATERPROOF SEALANT OR EQUIVALENT.

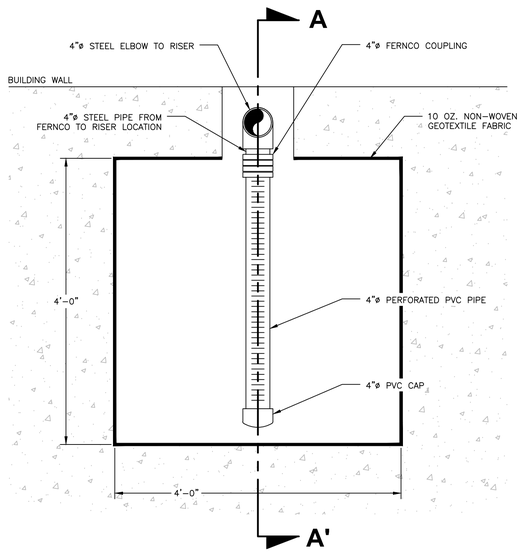


5 ELEVATED SUB-SLAB DEPRESSURIZATION SYSTEM PIT DETAIL

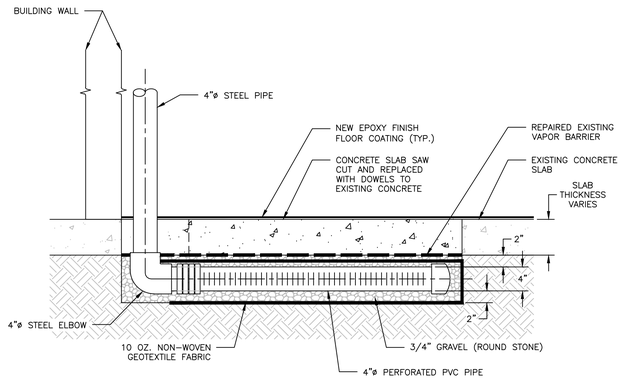
SCALE: N.T.S.

4 EXISTING 2"ø MONITORING POINT COVER

SCALE: N.T.S.



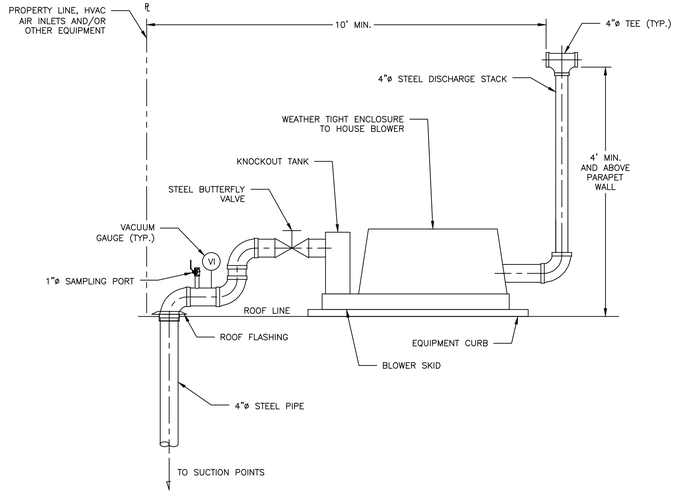
PLAN VIEW



PROFILE VIEW A-A'

1 SUB-SLAB DEPRESSURIZATION SYSTEM PIT DETAIL

SCALE: N.T.S.

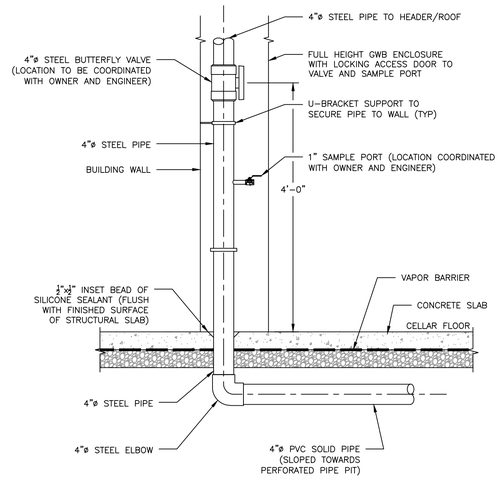


BLOWER NOTES

1. PROVIDED ELECTRICAL/CONTROL CONDUIT TO BLOWER. COORDINATED WITH ELECTRICAL CONTRACTOR.
2. ELECTRICAL CONDUIT SIZED FOR 230/460 VOLT, THREE PHASE, 60 HZ, FOR THE BLOWER MOTOR.
3. THE BLOWER DISCHARGE WAS LOCATED A MINIMUM OF 10 FEET FROM HVAC AIR INLETS, AND PROPERTY LINE.
4. THE BLOWER INSTALLED IS A 2.0 HP, AMETEK ROTRON MODEL EN505AX72ML.
5. THE BLOWER SKID INCLUDES A WEATHER TIGHT ENCLOSURE, PLASTIC KNOCKOUT TANK (WITH HIGH LEVEL ALARM), VACUUM RELIEF VALVE, LOW VACUUM SWITCH, GAUGES, AND INTERCONNECTING PIPING/FITTINGS.
6. A CONTROL PANEL WAS PROVIDED WITH THE BLOWER SKID. THE CONTROL PANEL HAS GREEN OPERATING LIGHTS AND RED ALARM LIGHTS. THE CONTROL PANEL HAS AN ALARM FOR WATER LEVEL IN KNOCKOUT TANK, LOW VACUUM AND NO POWER. THE ALARM SIGNAL IS SENT TO AN APPROPRIATE LOCATION IN THE PROPOSED BUILDING (I.E., SUPERINTENDENT'S OFFICE) AND IS ALSO AUDIBLE.
7. BLOWER WAS PROVIDED WITH A REMOTE ALARM CAPABLE OF ALERTING THE OWNER OF A SYSTEM SHUTDOWN OR LOW VACUUM CONDITION VIA PHONE OR TEXT MESSAGE.
8. BLOWER LOCATION ON ROOF WAS COORDINATED WITH OWNER AND ENGINEER.
9. ALL NECESSARY PIPE SUPPORTS WERE PROVIDED FOR RISERS FROM THE CELLAR SLAB TO THE BLOWER ON THE ROOF.

3 BLOWER DETAIL

SCALE: N.T.S.



2 RISER DETAIL

SCALE: N.T.S.

AS-BUILT DRAWINGS

NO.	DATE	REVISION DESCRIPTION	INT.
3	06NOV20	SSDS AS-BUILT REVISION ADDING SSDS-9 AND SSDS-10	D.E.K.
2	14SEP20	SSDS AS-BUILT	D.E.K.
1	05JUN20	SSDS REVISED AS PER NYSDEC COMMENTS	D.E.K.

PROJ. ENGINEER:	D.K.	DRAWN BY:	G.M.
DESIGNED BY:	D.K.	CHECKED BY:	R.K.
DRAWING SCALE:	AS SHOWN	PLOT SCALE:	1:1
DRAWING DATE:	08SEP21	PRINT TYPE:	B&W
OFFICE:	NY	PAPER SIZE:	ARCH D
PROJECT NO.:	3371.0001Y000		
DRAWING FILE:	3371.0001Y139.01.DWG		

ROUX
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209 SHAFTER STREET ISLANDIA NEW YORK 11749
(631) 232-2600

PROJECT NAME:
11-20 46TH ROAD OWNER, LLC
11-20 46TH ROAD, LONG ISLAND CITY, NY 11101

PROJECT FOR:
11-20 46TH ROAD OWNER, LLC
11-20 46TH ROAD, LONG ISLAND CITY, NY 11101

TITLE:
SUB-SLAB DEPRESSURIZATION SYSTEM PLAN AND DETAILS

DRAWING NO.
3
DRAWING 1 OF 1

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