NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5353 I F: (585) 226-8139
www.dec.ny.gov

December 7, 2018

Ms. Sally Lu
WBS Capital Inc
136-20 38th Ave, Suite 9J
Flushing, NY 11354

Re: Hawkeye Trade Center and Residences, 1A, and 1B (C828203, C828207, and C828208)
1405 and 1447 St. Paul Street, Rochester, Monroe County
Revised Sub-Slab Depressurization System Design and Work Plan, November 2018

Dear Ms. Lu;

The New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH; collectively referred to as the Departments) have completed their review of the document entitled *"Sub-Slab Depressurization System Design and Work Plan"* (the Work Plan) dated November 2018 and prepared by Envirosafe Inspections & Consulting. In accordance with 6 NYCRR Part 375-1.6, the Departments have determined that the Work Plan, with the following modifications, substantially addresses the requirements of the Brownfield Cleanup Program:

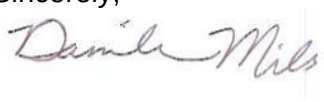
1. Based on Figure 2, it appears that the South side of Building 4 may not be mitigated during the IRM. Subsequent to installation of the sub-slab depressurization system, mitigation of the entire building will need to be verified and/or post-mitigation sub-slab soil vapor and indoor air sample results from outside of the pressure field will need to indicate there are no potential impacts or concerns to public health.
2. Related to Comment #1, although the communication test indicates some areas that may not receive adequate vacuum, the suction and test point locations as shown on Figure 4 are acceptable for the initial evaluation. However, additional test point locations may be needed during system startup to demonstrate adequate vacuum is achieved under the entire building and if adequate vacuum is not achieved, additional work will be required.
3. An Interim Site Management Plan in accordance with DER-10 Section 6.1(b) will be submitted within 30 days after receiving post mitigation sample results. The Construction Completion Report will also be submitted within 30 days after receiving post mitigation sample results. In addition, the schedule within the work plan only refers to Building 5. Please submit, in the next monthly progress report, a more detailed schedule for completion of work within the remaining buildings at the sites.
4. Figure 4: To clarify, test points 23 and 24 are mislabeled and are existing test points from the investigations.
5. Section 3.1: It is the Departments' understanding that there will be 10 suction points and 42 test points.

With the understanding that the modified Work Plan is agreed to, the Sub-Slab Depressurization System Design and Work Plan is hereby approved. By **December 21, 2018**, please distribute final copies of the work plan and associated figures as follows:

- Danielle Miles (NYSDEC – Avon, electronic file and 1 bound hard copy);
- Harolyn Hood (NYSDOH – Albany, electronic file/CD).
- The document repository at the Lincoln Branch Library located at 851 Joseph Ave, Rochester, NY 14621 (1 bound hard copy); and,

If you have any questions or concerns, please contact me at (585) 226-5349 or danielle.miles@dec.ny.gov.

Sincerely,



Danielle Miles, EIT
Assistant Engineer

ec: Jason Brydges, BE3 Corp Panamerican
Alex Brennen, BE3 Corp Panamerican
Francis Gorman, Harris Beach
Frank Sowers, NYSDEC
Bernette Schilling, NYSDEC
Dusty Tinsley, NYSDEC
Harolyn Hood, NYSDOH
Justin Deming, NYSDOH

Sub-Slab Depressurization System Design and Work Plan

Site:

Hawkeye Trade Center and Residences
BCP Parcels 3, 1A and 1B
1405 and 1447 St Paul Street
Rochester, NY 14650
NYSDEC SITES C828203, C82807 and C82808

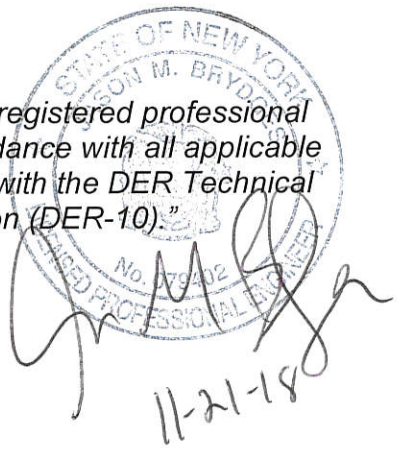
Prepared For: WBS Capital Inc.
136-20 38th Avenue Suite 9J
Flushing, New York 11354

Completed By: ENVIROSAFE Inspections

PO Box 671
Honeoye, NY 14471

November 2018

"I, Jason M. Brydges, certifies that I am currently a NYS registered professional engineer and that this IRM Report 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)."



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1.0 Introduction

Envirosafe Inspections & Consulting has performed a complete visual inspection, researched existing plans, and performed sub slab vacuum diagnostics at buildings; 12A, 12, 5, 10, 11, 11A, 6 and 4 of the Hawkeye Facility located at 1447 St Paul Street Rochester, NY 14621. Based on all the data obtained various Sub-Slab Depressurization Systems (SSDS) have been deigned to prevent suspect air contaminants from entering the buildings via soil vapor intrusion.

2.0 Objective

The overall objective of the installation of the sub slab depressurization systems is to obtain a negative sub slab vacuum pressure of - 0.004" of water column under the concrete slab of the first floor or basement level. This will extract suspect vapors and discharge the vapors to the exterior of the buildings, preventing the vapors from migrating into the buildings. A Sub Slab Depressurization System can be utilized for extraction of radon and other volatile organic vapors. The systems are similar in construction and all consist of the same objective in obtaining a negative vacuum pressure under the concrete slab. The installation of the Sub Slab Depressurization Systems will conform to the most recent standards of the Radon Mitigation Standards ASTM E2121, the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006, and the ASTM D3034 Standard Specification for Type PSM Poly (Vinyl Chloride) PVC Pipe and Fittings.

3.0 Sub-Slab Depressurization Design

3.1 SSDS Diagnostics

Suctions points were installed by coring through the concrete floor with a 7" concrete core drill. Various "test points" 0.5" holes were installed at various locations from each suction point. Prior to all coring and drilling, the locations were scanned with Ground Penetrating Radar (GPR) in efforts to locate any utilities or anomalies in or under the concrete floor. Various fans were utilized measuring air flow (CFM) and Static Pressure. Using a digital micromanometer at each test point, readings were documented. The information collected was utilized to design the proposed SSD Systems including suction point location, quantity of suction points, pipe size, fan size, etc. It should be noted that the design is subject to changes during actual installation based on building layout and objective to maintain adequate negative vacuum.

3.2 Suction Points

Suction points will be installed by coring through the concrete floor and removing at least 1 cubic ft of soil from beneath the suction point. Washed #2 round stone will replace the excavated soil.

3.3 Trenching

Due to reduced air flow detected during diagnostics in Buildings 12, 5 and 6, it is proposed to install trench systems in efforts to gain the adequate vacuum. Concrete cutting, excavation of existing soil, installation of 4" Perforated PVC Piping encapsulated with washed #2 round stone, capped with 6ml Poly Plastic and new concrete is proposed. It is recommended to install one system and perform sub slab vacuum diagnostics to determine the systems influence to determine the exact quantity of trench systems necessary (Refer to Trench Detail in **Figure 6**).

3.4 Piping

Each suction point will consist of a vertical riser of 4" PVC Pipe that will connect various suction points together forming a manifold system using 4" PVC pipe. Each manifold system will exit the building between the first and second floor. A riser 4" PVC pipe will be mounted on the exterior of the building and discharge above the roof line. The inline fan will be installed near the top of the riser pipe below the roof. All piping will be installed and anchored in accordance to standards (Refer to fan and vent details in **Figure 5**).

3.5 Inline Fans

Inline fans will be installed on the exterior of the buildings below the roof top and discharge at least 12" above the roof or 30' above ground level on buildings with non-operational windows. Discharge points will be at least 2' above operations windows, openings, etc., that are within ten feet of the discharge pipe. Fans will be wired with switches at fan locations and wired into the nearest electric panels on a dedicated circuit. Alarms will be installed on the vacuum side of the fans and be wired into a separate dedicated circuit.

3.6 Sub Slab Pressure Testing after System Installations

After all systems are installed a pilot test study will be completed to verify negative vacuum under all concrete slabs of at least -0.004" of wc.

3.7 Health and Safety Work Plan

It is required that a private Environmental Consultant provide an onsite representative to perform background readings for VOCs. Dust control and work plan safety meetings will be held by the contractor prior to the start of work each day. An onsite supervisor will be designated as the safety officer. All workers will be directed to perform work in a safe manner and notify site safety officer of any potential hazards. BE3corp/Panamerican as the private Environmental Engineer/Consultant will provide oversight during all IRM activities that will include tasks such as indoor post mitigation sampling, interface with Region 8 DEC, reporting.

4.0 Post Mitigation Sampling

In general, post mitigation sampling will be completed during the heating season between 30 and 45 days after an SSDS is installed. All post-mitigation testing will be documented, and results provided to Region 8 DEC. Actions will be taken to taken to identify leaks, such as using smoke tubes or digital micromanometer (or similar) to test concrete cracks, floor joints, and suction points, and any leaks identified are sealed.

More specifically, Envirosafe will conduct a pressure field extension test that measures the distance of a pressure change in the sub-slab area. For example, with the SSDS in operation the movement of smoke downward is observed into test points (or a micromanometer is used). Test points are presented in **Figure 4**. In addition to this testing, BE3corp will perform indoor and outdoor air sampling in buildings with the new SSDS installed. The sampling locations will mimic as best as possible the locations performed during the previous Phase II ESA while also considering the field extension testing locations. Regardless, adequate indoor locations and potentially multiple outdoor locations will be selected to ensure each SSDS is performing effectively. If post-mitigation sampling results do not indicate a significant decrease in the concentrations of volatile chemicals in the indoor air, the reason will be identified and corrected as appropriate.

5.0 Quantitative Emissions Estimate

Based upon the previous SVI investigation during the Phase II in 2017 and the fan manufacturer's flow rates, the following estimates were calculated for TCE emissions. The fans anticipated to be used in the trench systems, and thus representative of the potential flow from the subsurface, is the Festa Force (FF) that has a design flow rate of 240 cfm. Additional fans are proposed for removing the vapors from the system to the atmosphere at suction/emission points, which is more representative of the potential loading rate of TCE. These fans are anticipated to be the HS-3000 (HS), which provide a design flowrate of 35 cfm. The following conservative estimates for emission rates of TCE to the atmosphere on a per building basis are listed below:

- Building 4 has 1 emission point with TCE = 3.0 $\mu g/m^3$
  - 3 $\mu g/m^3$ * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm = 3.9E-7 lbs/hr
- Building 5 has 3 emission points with TCE = 260 $\mu g/m^3$
  - 260 $\mu g/m^3$ * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm * 3 = 1.02E-4 lbs/hr
- Building 6 has 1 emission point with TCE = 11 $\mu g/m^3$
  - 11 $\mu g/m^3$ * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm = 1.4E-6 lbs/hr
- Building 10 has 1 emission point with TCE = 74 $\mu g/m^3$
  - 74 $\mu g/m^3$ * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm = 9.7E-6 lbs/hr
- Building 11 has 2 emission points with TCE = 180 $\mu g/m^3$
  - 180 $\mu g/m^3$ * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm * 2 = 4.71E-5 lbs/hr
- Building 11A has 1 emission point with TCE = 190 $\mu g/m^3$
  - 190 $\mu g/m^3$ * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm = 2.49E-5 lbs/hr

- Building 12 has 2 emission points with TCE = 310 µg/m^3
    - 310 µg/m^3 * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm * 2 = 8.11E-5 lbs/hr
- Building 12A has 3 emission points with TCE = 2900 µg/m^3
    - 2900 µg/m^3 * 2.2E-9 lbs/µg * 1.7 m^3/hr/cfm * 35 cfm * 3 = 1.139E-3 lbs/hr

6.0 Scheduling and Reporting

Scheduling of the SSDS proposed for the 8 buildings is going to be dependent upon occupancy of the various structures. In general, the schedule for each building will be similar from mobilization to final testing. Since Building 5 in Parcel 3 is most important with respect to occupancy, a generic schedule for a single system within this structure is listed below. Initiating the schedule is dependent upon approval of the IRM, notice to proceed from the Owner/Client, and 7 calendar notification provided to DEC prior to mobilization.

Task/Activity	Duration
Mobilization/Cut Trench/Remove Debris	1 week
Install Subsurface Piping/Backfill Stone	1 week
Perform Pressure Testing/Install Overhead Piping	1 week
Install Electric	1 week
Perform Vacuum Testing	1 week

Buildings with multiple “systems/arteries” (e.g., Building 5 has 3 independent systems), the approximate 5-week schedule can be administered in parallel or in series based upon client schedule to occupy structure. For example, all systems within Building 5 can be schedule for 5 weeks where multiple work crews would be required to install each system in parallel.

Per DER-10, documentation of the IRM for SSDS installation requires the production of a construction completion report (CCR) since this action is not the final activity under the BCP. The CCR will be incorporated into the final engineering report (FER) for each BCP (e.g., Parcels 3, 1A and 1B). In general, the CCR will describe the activities completed during the IRM and provide data generated during SSDS installation and testing. Specifically, the CCR will contain the following at a minimum:

1. Engineer’s certification
2. A description of the installation of the SSDSs per the work plan;
3. A summary of activities including problems, resolutions, design changes, quantities of waste streams, disposal facility documentation, site plans/drawings, restoration, etc.
4. A list of the remedial action objectives
5. Tables and figures, as applicable, of pre- and post-remedial data including waste data from certified laboratories
6. "As-built" drawings with NYS professional engineer stamp and signature
7. If applicable, identification of institutional controls with a copy of the environmental easement

8. Fully executed manifests documenting any off-site transport of waste material

7.0 Waste Management

SSDS installation within the Hawkeye buildings will not generate significant quantities of waste material. It is anticipated that only the buildings with systems requiring trenching will generate subsurface material. Based upon the previous Phase II investigations, the waste material encountered could include sub-base stone, urban backfill, debris, and native materials. All waste generated at a result of the SSDS installation throughout the facility will be managed in accordance with the following:

1. All material from the subsurface will be placed on poly sheeting as it is removed from any trench, test pits, pipe chases, etc.
2. Waste material will be sampled per waste disposal facility acceptance criteria, which includes required frequencies.
3. Waste material will be analyzed per waste disposal facility acceptance criteria, which includes required analytes.
4. As directed by NYSDEC, other contaminants may be analyzed, such as Part 375 parameters; however, this will not be performed unless mandated by DEC or a desire of the project team to obtain more information for characterization purposes.
5. Despite most of the waste material being generated indoors, no waste material will be staged overnight without being covered by poly.
6. Once approved for disposal, waste material will be loaded, transported and disposed using requisite shipping papers, which will be documented per Section 6.0.
7. Information gleaned during the removal of waste material from the subsurface will also be documented per Section 6.0 including visual observations, PID measurements, etc.
8. If a hot spot, spill or grossly contaminated material is encountered during SSDS installation, this information will be document and DEC will be notified per the State’s Spill Regulations.

ATTACHMENT

Hawkeye Subslab Vacuum Test Results

SP1	**Festa Force WC=5.0"**		**HS 3000 above 8"**	
TP 5		0	0.001	
TP 6	(+0.001 to -0.003)		0.001	
TP 7	0.000 to -0.001		-0.001	
TP 8	(-0.000 to -0.001)		-0.003	
SP2	**FF WC=4.6"**		**HP 220 WC= 2.3"**	**FR 250 WC= ?**
TP 9		-0.021	-0.006	-0.009
TP 10		-0.028	-0.013	-0.014
TP 11		-0.002		
SP 3	**FF WC= 4.0"**			
TP 1	(+0.002 to -0.002)			
TP 2		-0.008		
TP 3	(+0.001 to -0.001)			
SP 4			**HS 3000 WC= Above 8"**	
TP 12			-0.675	
TP 13			-0.012	
SP 5	**FF WC= 4.8"**			
TP 4	(+0.002 to -0.005)			
TP 16		-0.023		
SP 6	**FF WC= 3.6"**			**HP 220 WC= 1.9"**
TP 17		-0.204		-0.124
TP 18		-0.015		-0.009
TP 19		-0.166		-0.112
SP 7	**FF WC= 4.8"**		**HS 3000 WC= Above 8"**	
TP 14			0	
TP 15		-0.002	-0.003	
SP 8			**HS 3000 WC= Above 8"**	
TP 7			-0.003	
TP 8			-0.002	
TP 20			-0.125	
SP 1			0	

SP 9	**FF WC=2.4"**		**FR 250 WC=2.0"**
TP 2		0	0
TP 3	(+0.001 to -0.001)		(+0.001 to -0.001)
TP 21		0.003	0.003
TP 22		-0.001	-0.001

KODAK HAWKEYE PLANT
FIRST FLOOR

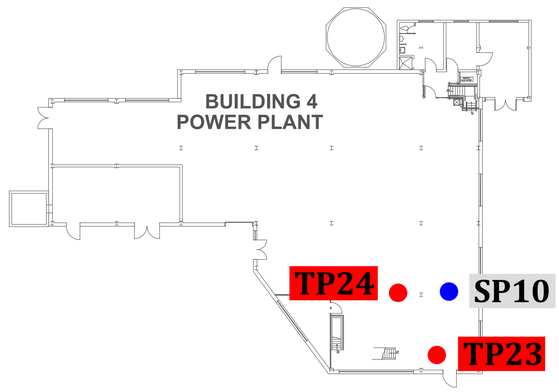
N

LEGEND:

- SP# SUCTION POINT
- TP# TEST POINT

NOTES:

-SUCTION POINT: 7.5" CORED/CLEANED EXTRACTION POINT
-TEST POINT: 1/2" PILOT HOLE
-PILLAR DISTANCE APPROX. 20'



GENESEE RIVER

LOT 1

DRIVING PARK BLVD

BUILDING 12A

BUILDING 12

COURTYARD

BUILDING 5

BUILDING 10

BUILDING 11

BUILDING 11A

BUILDING 6

LOT 2

ST. PAUL BLVD

SP1 TP8 SP8 TP7 TP5 TP6 TP20 TP10 TP9 SP2 TP11 TP21 SP9 TP2 SP3 TP22 TP3 TP1 TP13 SP5 TP12 SP4 TP16 TP17 TP18 SP6 TP19 TP4 TP14 TP15 SP7

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FIGURE 1 - INVESTIGATION TEST AND SUCTION POINT LAYOUT

WBS CAPITAL, INC. - HAWKEYE
1405/1447 ST. PAUL STREET
ROCHESTER, NY 14650

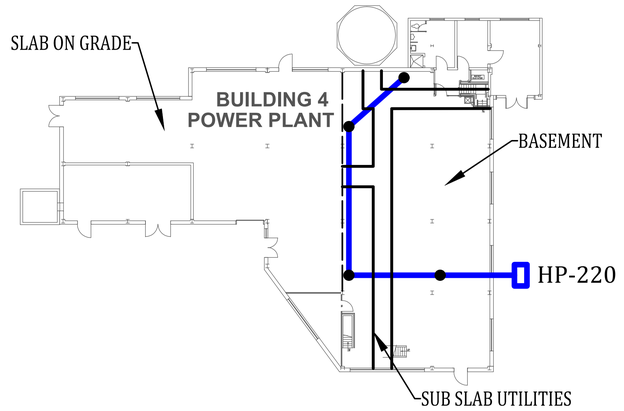
11-16-2018 | SCALE: 1" = 20' | SHEET 1 OF 6

KODAK HAWKEYE PLANT
FIRST FLOOR

N

LEGEND:

———	TRENCH SYSTEM
———	OVERHEAD PIPING
•	SUCTION POINT
HS	HS 3000 RADON AWAY INLINE FAN
FF	FESTA FORCE INLINE FAN
HP-220	FANTECH HP-220 INLINE FAN
TBD	TO BE DETERMINED



TYPICAL: 18"X18" WITH STONE AND 4" PVC PIPE - SEE TRENCH DETAIL

GENESEE RIVER

LOT 1

DRIVING PARK BLVD

BUILDING 12A

BUILDING 12

COURTYARD

BUILDING 5
THREE TRENCH SYSTEMS

BUILDING 11

BUILDING 11A

BUILDING 10

COURTYARD

COURTYARD

BUILDING 6

LOT 2

ST. PAUL BLVD

HS

FF

TBD

EXISTING SUMP CROCK
ADD VACUUM TO SEALED COVES

EXISTING SUMP CROCK
ADD VACUUM VIA OVERHEAD PIPING

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FIGURE 2 - PROPOSED SSDS LAYOUT

WBS CAPITAL, INC. - HAWKEYE
1405/1447 ST. PAUL STREET
ROCHESTER, NY 14650

11-16-2018 | SCALE: 1" = 20' | SHEET 2 OF 6

KODAK HAWKEYE PLANT
FIRST FLOOR

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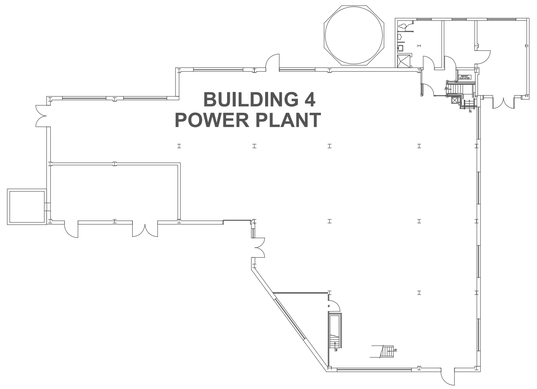
LEGEND:
FOOTINGS/FOUNDATION



GENESEE RIVER

LOT 1

DRIVING PARK BLVD

BUILDING 12A

BUILDING 12

COURTYARD

BUILDING 11

BUILDING 10

COURTYARD

BUILDING 11A

PIPE SHAFT

LOT 2

BUILDING 5

COURTYARD

BUILDING 6

ST. PAUL BLVD

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FIGURE 3 - FOUNDATION PLAN

WBS CAPITAL, INC. - HAWKEYE
1405/1447 ST. PAUL STREET
ROCHESTER, NY 14650

11-16-2018 | SCALE: 1" = 20' | SHEET 3 OF 6

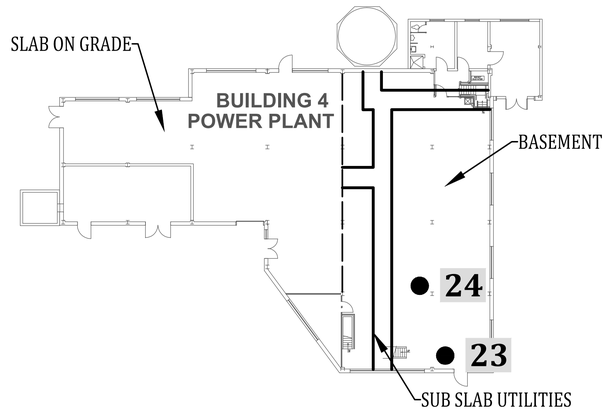
KODAK HAWKEYE PLANT
FIRST FLOOR

N

LEGEND:

■ # EXISTING TEST POINTS FROM INVESTIGATIONS

● # NEW TEST POINTS ADDED TO FINAL INSTALLATION



GENESEE RIVER

LOT 1

DRIVING PARK BLVD

BUILDING 12A

BUILDING 12

COURTYARD

BUILDING 5
THREE TRENCH SYSTEMS

BUILDING 10

BUILDING 11

BUILDING 11A

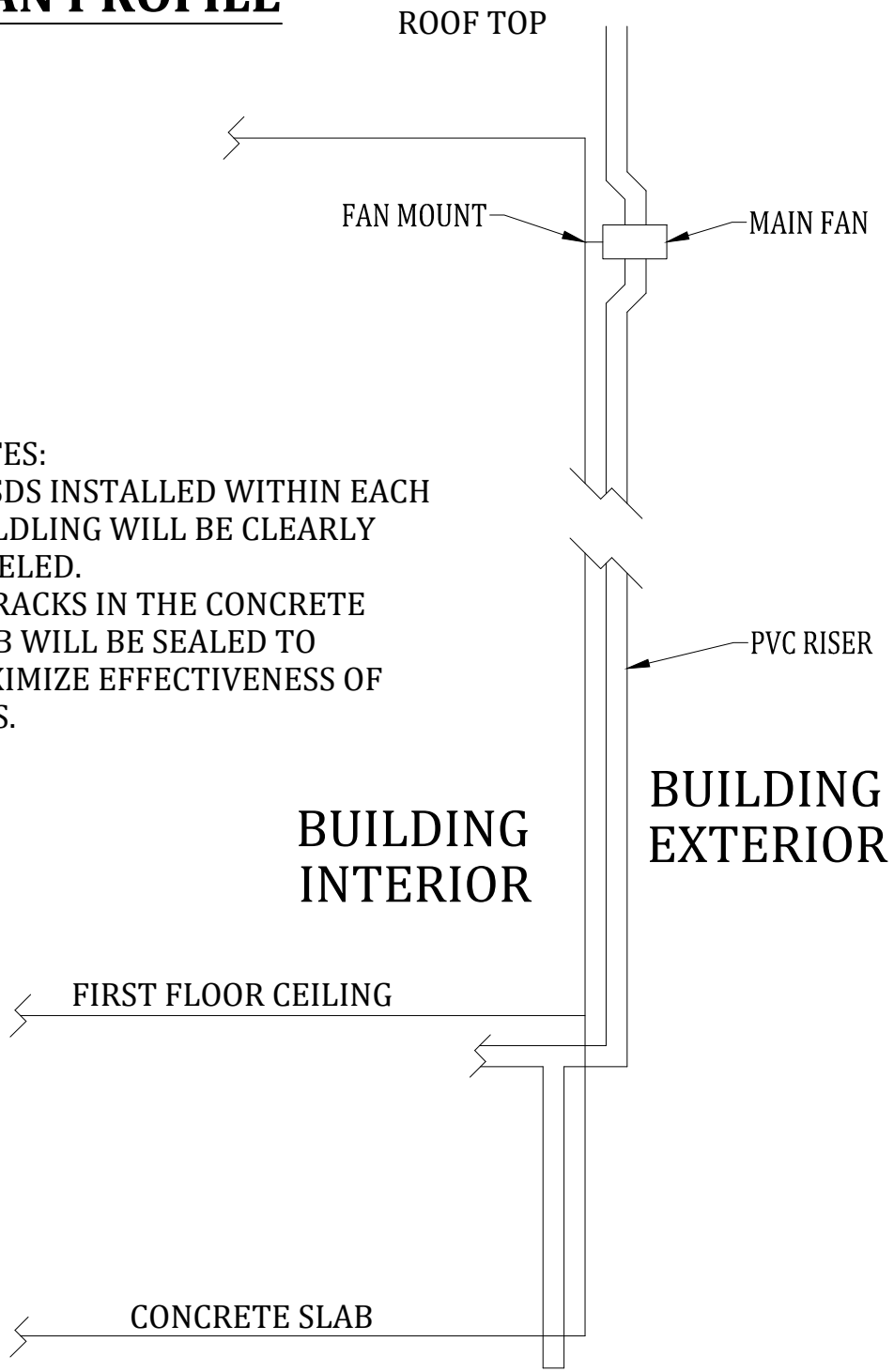
BUILDING 6

LOT 2

ST. PAUL BLVD

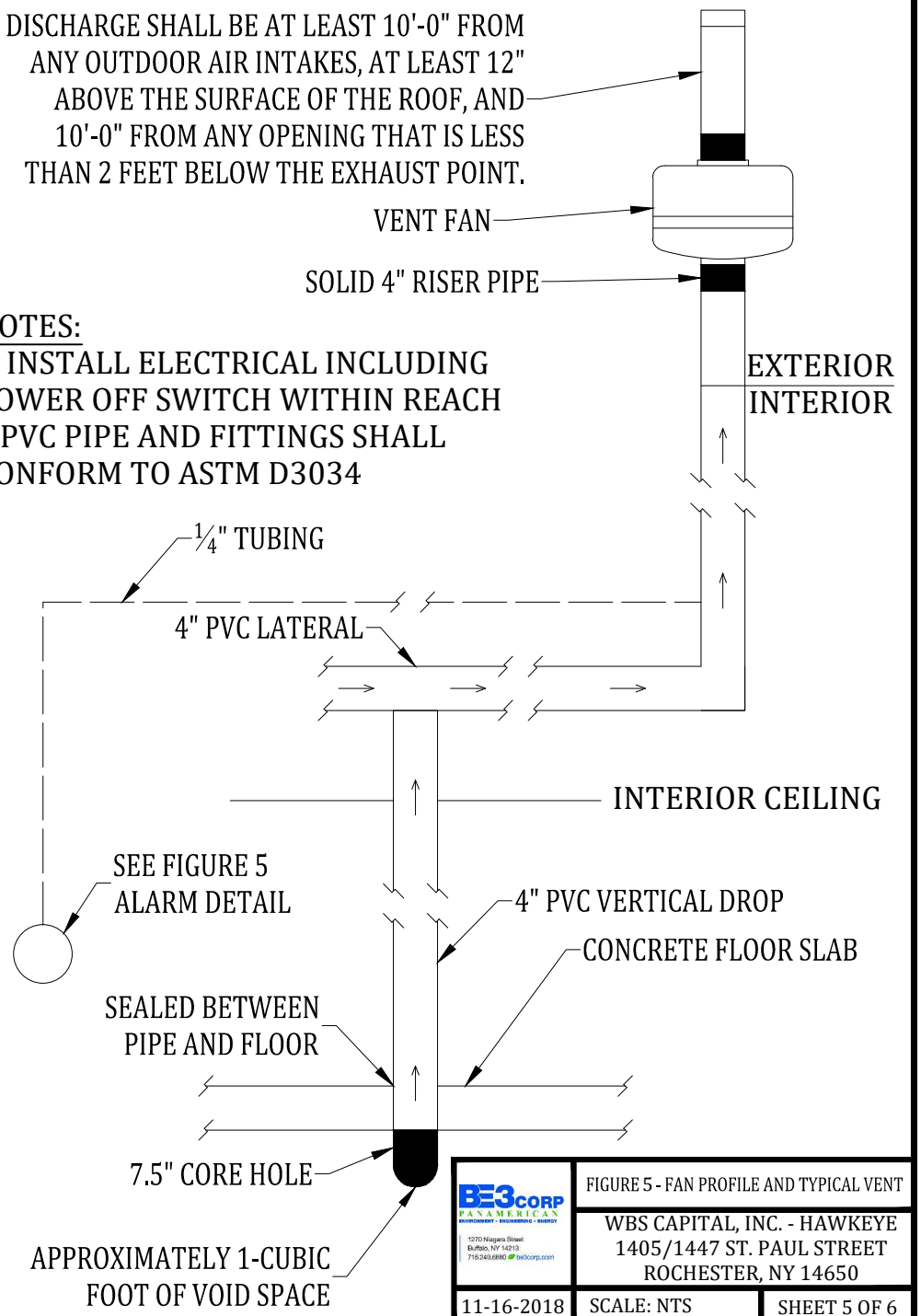
BE3CORP PANAMERICAN ENVIRONMENT • ENGINEERING • ENERGY 1270 Niagara Street Buffalo, NY 14213 716.249.6880 be3corp.com	FIGURE 4 - PROPOSED FINAL TEST POINITS
	WBS CAPITAL, INC. - HAWKEYE 1405/1447 ST. PAUL STREET ROCHESTER, NY 14650
11-20-2018	SCALE: 1" = 20' / SHEET 4 OF 6

FAN PROFILE



NOTES:
1. SSDS INSTALLED WITHIN EACH BUILDLING WILL BE CLEARLY LABELED.
2. CRACKS IN THE CONCRETE SLAB WILL BE SEALED TO MAXIMIZE EFFECTIVENESS OF SSDS.

TYPICAL VENT



NOTES:
1. INSTALL ELECTRICAL INCLUDING POWER OFF SWITCH WITHIN REACH
2.PVC PIPE AND FITTINGS SHALL CONFORM TO ASTM D3034

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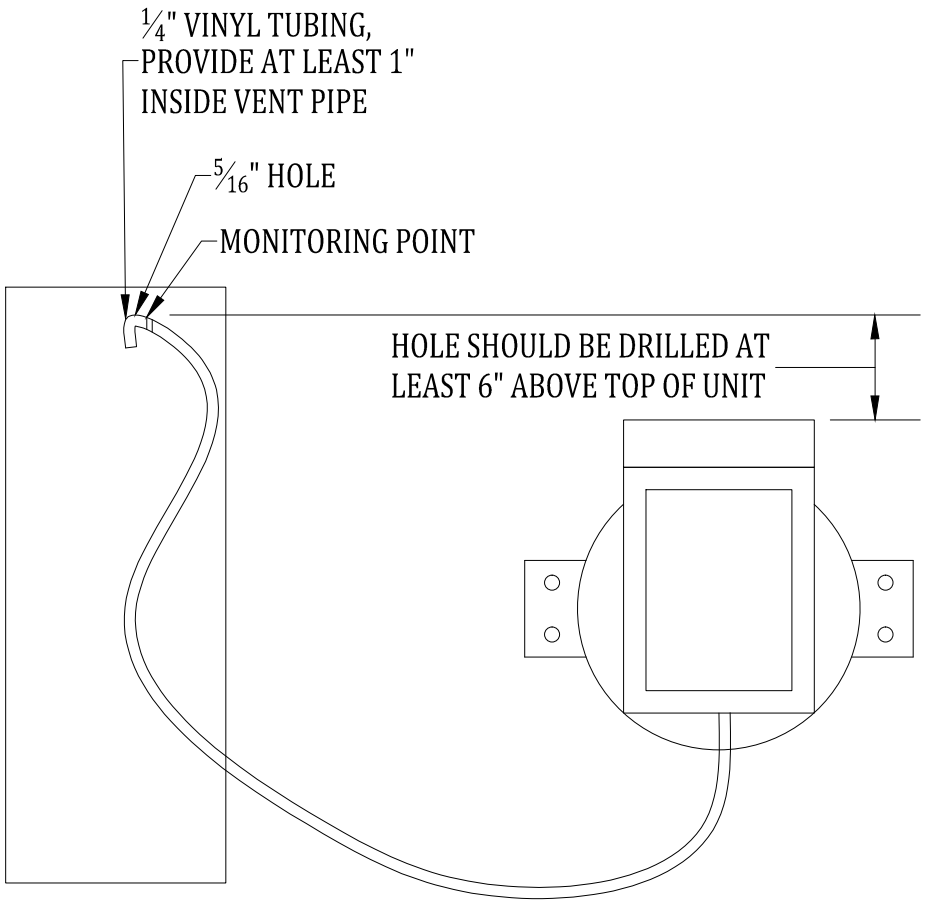
FIGURE 5 - FAN PROFILE AND TYPICAL VENT

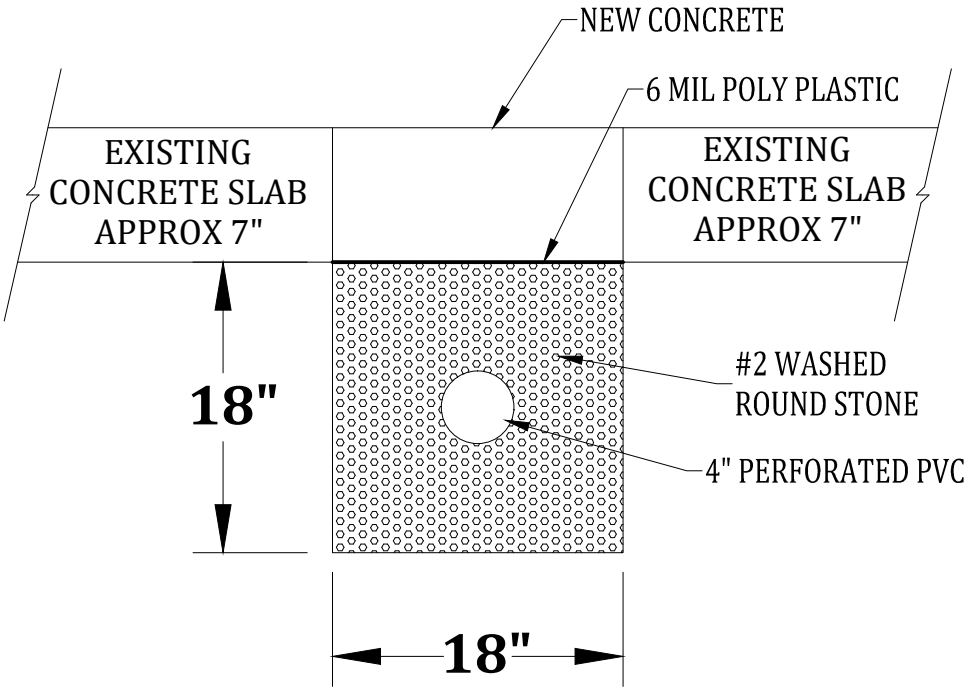
WBS CAPITAL, INC. - HAWKEYE
1405/1447 ST. PAUL STREET
ROCHESTER, NY 14650

11-16-2018 | SCALE: NTS | SHEET 5 OF 6

ALARM DETAIL



TRENCH DETAIL



NOTES:

1. PRESSURE SET POINT: -0.25 INCHES WC.
2. PROVIDE ALARM COMPANY LABEL AND CONTACT INFORMATION
3. LOCATE DEVICE WHERE IT CAN BE SEEN AND HEARD
4. CONNECT DEVICE TO A SEPARATE CIRCUIT FROM FAN SO THAT IT WILL ACTIVATE IF POWER TO THE FAN IS INTERRUPTED
5. ALARM WILL SOUND WHEN PRESSURE WITHIN THE VENT PIPE DROPS BELOW THE SET POINT

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FIGURE 6 - ALARM/TRENCH DETAIL

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ROCHESTER, NY 14650

11-16-2018 | SCALE: NTS | SHEET 6 OF 6