

# Periodic Review Report and Corrective Measures Work Plan

## NYSDEC Site #C851049

-May 21, 2021 to October 31, 2023

### Location:

Former Corning Hospital  
176 Denison Parkway East & 171 & 201 East First Street  
Corning, New York

### Prepared for:

Riedman Companies  
45 East Avenue, 6<sup>th</sup> Floor  
Rochester, New York 14604

LaBella Project No. 2234011

October 31, 2023



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## 1.0 INTRODUCTION

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LaBella Associates, D.P.C. (LaBella) is pleased to submit this Periodic Review Report (PRR) for the Former Corning Hospital Site located at 176 Denison Parkway East and 171 and 201 East First Street, Corning, New York, herein after referred to as the “Site”. The report details the monitoring period from May 21, 2021 to October 31, 2023. The Site is identified as New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site #C851049. A Site Location Map is included as Figure 1.

The site is located in Corning, Steuben County, New York and is identified as 176 Denison Parkway East (Tax Map No. 318.09-01-018.100), 171 East First Street (Tax Map No. 318.09-01-018.200) and 201 East First Street (Tax Map No. 318.09-01-013.000) (see Figure 2). During the BCP project, the 176 Denison Parkway East parcel was subdivided into the current 176 Denison Parkway East parcel and 171 East First Street parcel. The current 176 Denison Parkway East and 171 East First Street Parcels also now includes the former Pearl Street; however, that is not part of the BCP. Figure 2 illustrates the BCP limits and current parcel boundaries.

The site is an approximately 4.77-acre area and is bounded by Denison Parkway East to the north, East First Street to the south, commercial buildings to the east, and Chemung Street to the west (see Figure 2). The 176 Denison Parkway East parcel is improved with a 40,000 square foot apartment building (i.e. Building 1), 171 East First Street is improved with a 22,000 square foot apartment building (i.e. Building 2), and 201 East First Street is improved with an asphalt paved parking lot.

LaBella was retained by Riedeman Companies to assist in the monitoring and reporting requirements associated with the Site Management Plan (SMP) prepared for the Site.

## 2.0 BACKGROUND

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Remedial actions were performed at the Site from March 2018 through October 2018, which included the removal of impacted historical fill material from the subsurface and the construction of a clean cover (or cap) system. These remedial actions were performed in accordance with an NYSDEC approved Remedial Action Work Plan (RAWP) dated February 16, 2018 and NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation dated May 2010. A Certificate of Completion (COC) was issued for the Site on December 21, 2018.

## 3.0 INSTITUTIONAL AND ENGINEERING CONTROLS (IC/EC)

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### 3.1 IC/EC Certification

IC/EC certifications are provided by a designated representative of Riedman Companies, and a Qualified Environmental Professional in the State of New York working for on behalf of Riedman Companies. Refer to Appendix 1 for a copy of the certification forms.



### **3.2 Institutional Controls**

The Institutional Controls for the Site are described as follows:

1. The property may be used for Restricted Residential (per 6 NYCRR Part 375- 1.8(g)(2)(ii)), Commercial (per 6 NYCRR Part 375-1.8(g)(2)(iii)) and Industrial (per 6 NYCRR Part 375- 1.8(g)(2)(iv));
2. All ECs must be operated and maintained as specified in this SMP;
3. All ECs must be inspected at a frequency and in a manner defined in the SMP.
4. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Steuben County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
5. Environmental or public health monitoring must be performed as defined in this SMP;
6. Data and information pertinent to site management must be reported at the frequency and in a manner as defined in this SMP;
7. All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
8. Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
9. Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
10. Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
11. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries, and any potential impacts that are identified must be monitored or mitigated. SSD systems may be installed and activated in lieu of a soil vapor intrusion evaluation;
12. Vegetable gardens and farming on the site are prohibited.

### **3.3 Engineering Controls**

The Engineering Controls for the Site are described as follows:

1. Vapor Mitigation System
2. Cover System





## 4.0 ANNUAL MONITORING

The current monitoring program is summarized in the following table:

**TABLE 1 - Monitoring/Inspection Schedule**

Monitoring Program	Frequency	Matrix	Status
Site Wide Inspection	Annually	Site Use	Ongoing
SSDS	Annually or as needed	Operation, Condition	Ongoing

A summary of the monitoring work completed is provided below.

### 4.1 Sub Slab Depressurization System Monitoring

The sub-slab depressurization systems (SSDS) were inspected on October 9, 2023 in order to verify proper operation of the system. There are four (4) fans that operate the 40,000 square foot apartment building (i.e. Building 1) and there are two fans that operate the 22,000 square foot apartment building (i.e. Building 2) as shown on Figure 2. The following inspections were made:

- the in-line U-tube manometer on the suction side of the piping system was observed to determine a pressure differential that would indicate the fan was operating properly.
- the piping condition was observed to determine if any portion of the piping required repair;
- labeling of the system was intact;
- The audible alarm was operational., and,
- descriptions of actions taken to address any concerns of the SSDS (if applicable).

The pressure differential readings are for each building are summarized in Table 2 below.

**TABLE 2 – Pressure Field Extension Readings**

Building	Date	Sample Point ID	Manometer Reading (Inches of Water Column)
Building 1 - addressed as 176 Dennison Parkway	10/9/2023	1	-0.010
	10/9/2023	2	-0.003
	10/9/2023	3	-0.016
	10/9/2023	4	-0.019
	10/9/2023	5	0.009
	10/9/2023	6	0.006
	10/9/2023	7	-0.001
	10/9/2023	8	-0.005
	10/9/2023	9	-0.013
Building 2 - addressed as 171 East 1 <sup>st</sup> Street	10/9/2023	1	-0.023
	10/9/2023	2	-0.042
	10/9/2023	3	-0.072
	10/9/2023	4	-0.019



Note: The monitoring points IDS 1, 2, . . are from north to south.

As indicated in Table 2, monitoring points 5 and 6 had positive readings. This is believed due to potential damaged piping and not an issue with the operations of the SSDS. Typically the installation of a SSDS with new construction is if effective with depressurizing the slab.

The U-tube pressure differential readings and alarm check for each SSDS are summarized in Table 3 below.

**TABLE 3 – U-Tube Manometer and Audible Alarm Inspection**

Building	Date	SSD System ID	Manometer Reading (Inches of Water Column)	Audible Alarm Checked and Operation
Building 1 - addressed as 176 Dennison Parkway	10/9/2023	1	-0.117	Yes
	10/9/2023	2	-0.667	Yes
	10/9/2023	3	-0.483	Yes
	10/9/2023	4	-0.315	Yes
Building 2 - addressed as 171 East 1 <sup>st</sup> Street	10/9/2023	1	-0.492	Yes
	10/9/2023	2	-0.371	Yes

Based on the inspection, the SSDS appeared to be in good working order. Copies of the photographs of pertinent portions of the system and site cover are included in Appendix B.

The design of the SSDS for each building are included in Appendix C. The as-built drawings of the SSDS installation will be provided to the NYSDEC in a Construction Completion Report (CCR) to be completed subsequent to the completion of this report..

#### **4.2 Site Cover and Use Inspection**

A site-wide inspection of the property was conducted on October 9, 2023 to assess the general condition and use of the Site . Based on the results of the general site conditions inspection, the Site cover remains in good condition and the Site is occupied as bank and residential apartment buildings. Photos of the site are included in Appendix B.

## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Compliance**

The requirements dictated in the SMP regarding IC/EC's and the Monitoring Plan were generally met during the reporting period. As such, no steps are currently deemed necessary to correct areas of non-compliance.

### **5.2 Performance and Effectiveness of Remedy**

An evaluation of the components of the SMP during this reporting period indicates that the IC/EC controls appear to be protective of human health and the environment. The monitoring plan sufficiently monitored the performance of the remedy.



### 5.3 Recommendations

Since residual contamination remains at the Site, applicable site management requirements should be continued.

## 6.0 CORRECTIVE MEASURES WORK PLAN

### 6.1 Introduction

The NYSDEC requested a Corrective Measures Work Plan (CMWP) be developed that was provided in an email to LaBella on dated October 25, 2023 to address the following:

1. *A corrective measures letter work plan, that will include at a minimum:*
  - a. *Inspection of the entire cover system,*
  - b. *Inspection of the entire SSDS (for all buildings) and confirmation that the slab is adequately depressurized,*
  - c. *Submittal of a corrective measures report/PRR documenting the inspections and certifying compliance in accordance with DER-10 from 5/21 to that date, and*
  - d. *A schedule for completion of work in the corrective measures work plan.*
2. *A CCR (Construction Completion Report) for the SSDS as described in Labella's 12/04/2019 SSDS design work plan.*
3. *An updated Site management Plan (SMP) using the Departments newest template, available online. The current SMP, from 2018, still discussed proposed SSDS and soil vapor intrusion evaluations. The SMP should be updated to reflect current conditions at the site, current requirements and include CCRs for the systems installed.*

### 6.2 Corrective Measures Work Plan

To address the NYSDEC comments, the following measures will be completed.

NYSDEC Comment	Corrective Measures
1. <i>A corrective measures letter work plan, that will include at a minimum:</i> <ol style="list-style-type: none"><li>a. <i>Inspection of the entire cover system,</i></li><li>b. <i>Inspection of the entire SSDS (for all buildings) and confirmation that the slab is adequately depressurized,</i></li><li>c. <i>Submittal of a corrective measures report/PRR documenting the inspections and certifying compliance in accordance with DER-10 from 5/21 to that date, and</i></li><li>d. <i>A schedule for completion of work in the corrective measures work plan.</i></li></ol>	LaBella completed a site inspection of the cover system and SSDS for all buildings on October 9, 2023. The observations of the inspections are summarized in this Periodic Review Report.
2. <i>A CCR (Construction Completion Report) for the SSDS as described in LaBella's 12/04/2019 SSDS design work plan.</i>	LaBella has been retained by the Site owner to complete a Construction Completion Report for the Site.



NYSDEC Comment	Corrective Measures
<p>3. <i>An updated Site management Plan (SMP) using the Departments newest template, available online. The current SMP, from 2018, still discussed proposed SSDS and soil vapor intrusion evaluations. The SMP should be updated to reflect current conditions at the site, current requirements and include CCRs for the systems installed.</i></p>	<p>LaBella has been retained by the Site owner to complete a Site Management Plan for the Site.</p>

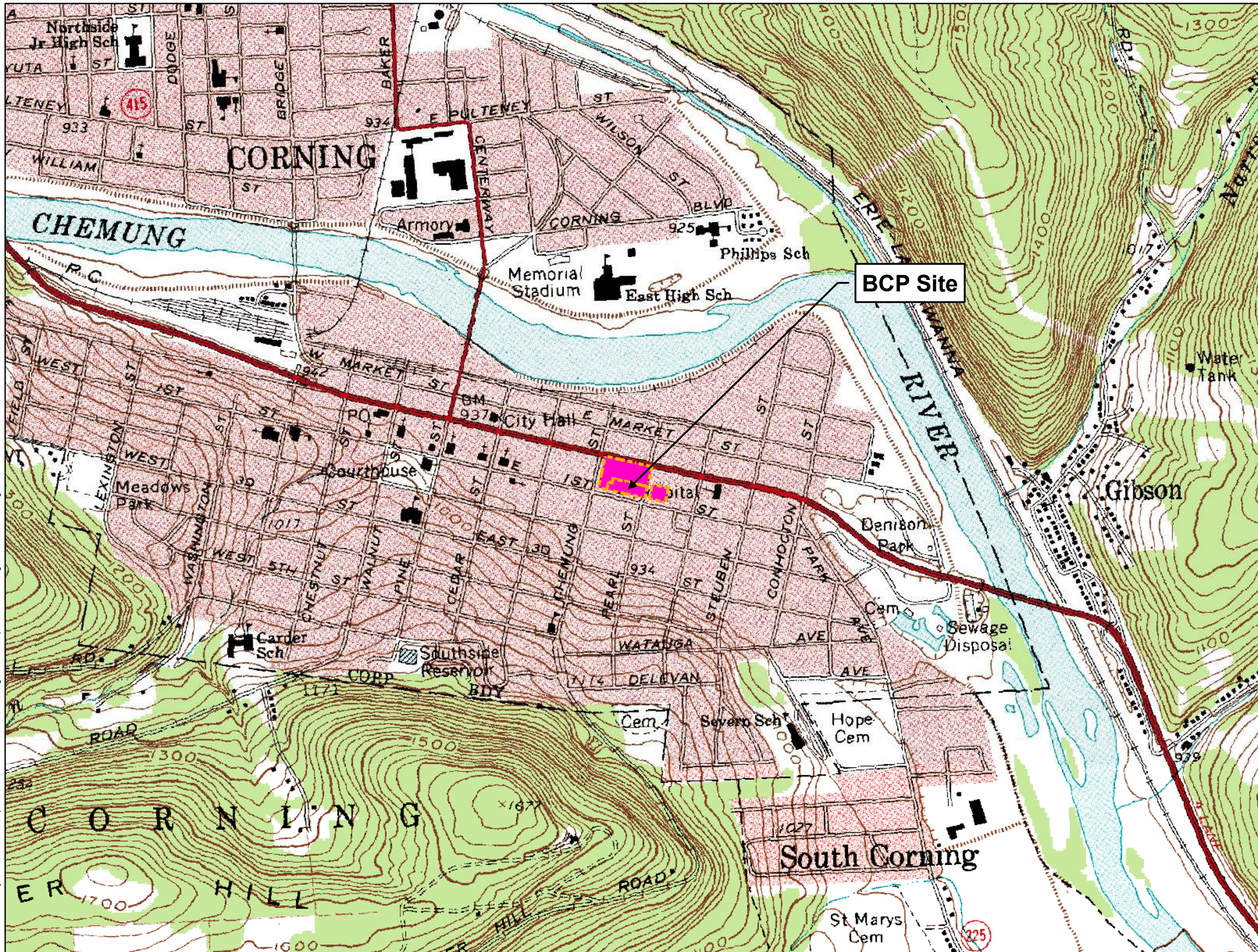
B:\GLOBAL\PROJECTS\RIEDMAN COMPANIES\2234011 - ANNUAL MONITORING AND SMP UPDATE\11\_REPORTS\PRRS\2023 PRR\RPT.2023-10.30.C851049.2023 PRR FORMER CORNING HOSPITAL.DOCX



# FIGURES

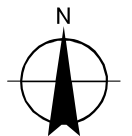


B:\GLOBAL\Projects\riedman companies\2234011 - Annual Monitoring and SMP Update\06\_Drawings\Environmental\Figure 1 - Site Location.mxd



## RIEDMAN COMPANIES

Former Corning Hospital  
176 Denison Parkway East  
171 and 201 East First Street  
Corning, New York



0 500 1,000 Feet

1 inch = 1,000 feet

### Legend

 Approximate BCP Boundary

### Sources/Notes:

- 1) USGS image obtained from NYS GIS Clearinghouse.
- 2) All locations should be considered approximate.

LaBella Project No: 2234011  
Date: 10/31/2023

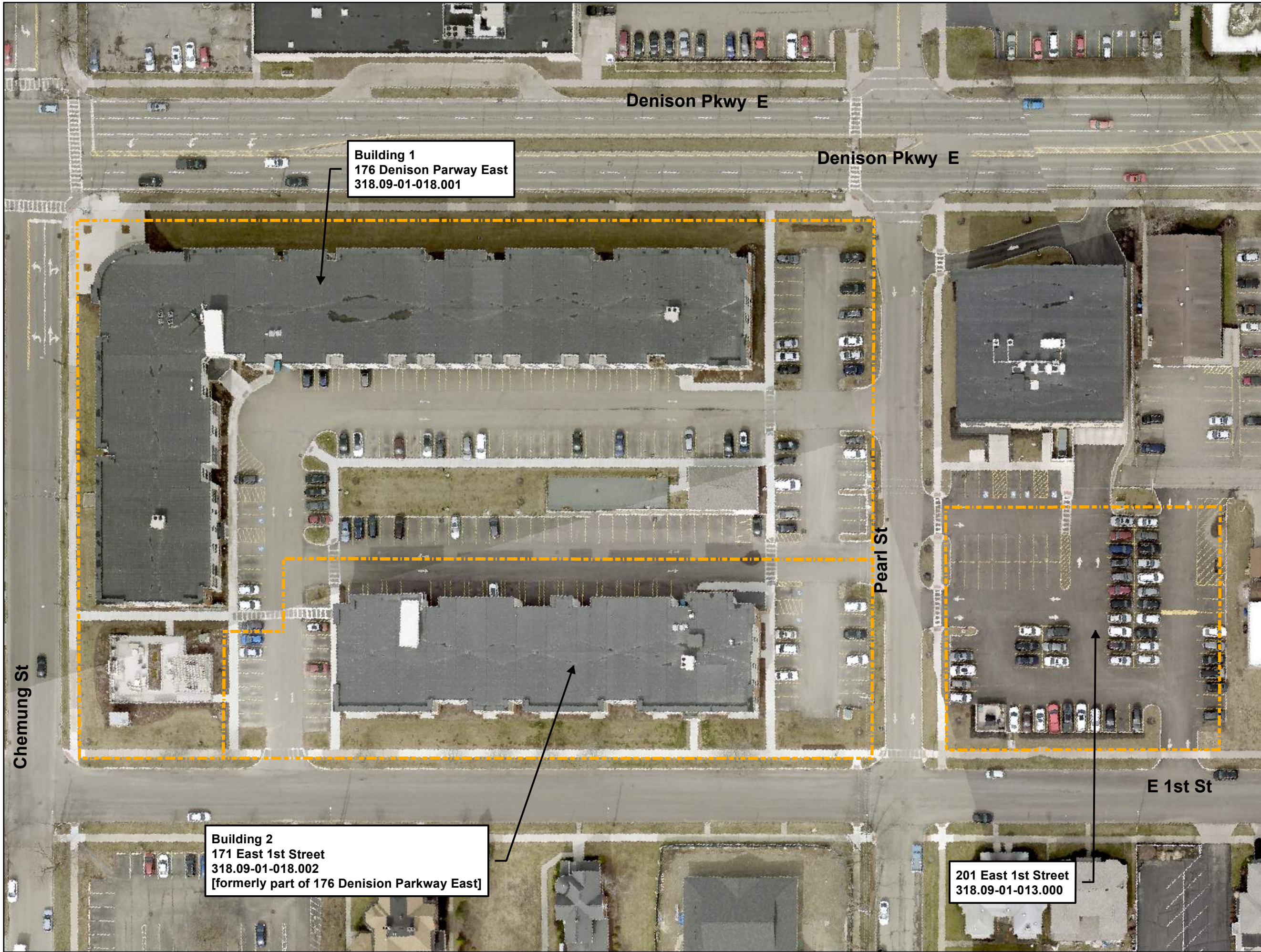
## SITE LOCATION

## FIGURE 1

INTENDED TO PRINT AS: 11" X 17"

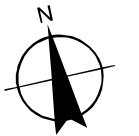


B:\GLOBAL\Projects\riedman companies\2234011 - Annual Monitoring and SMP Update\06\_Drawings\Environmental\Figure 2 - Corning Hospital.mxd



## RIEDMAN COMPANIES

Former Corning Hospital  
176 Denison Parkway East  
171 and 201 East First Street  
Corning, New York



0 30 60 Feet  
1 inch = 60 feet

### Legend

Approximate BCP Boundary

### Sources/Notes:

- 1) Aerial image obtained from Eagleview, Inc. and may not represent current conditions.
- 2) All locations should be considered approximate.

LaBella Project No: 2234011  
Date: 10/31/2023

## BCP SITE BOUNDARY

## FIGURE 2

INTENDED TO PRINT AS: 11" X 17"





# APPENDIX 1

ICEC Form





Enclosure 2  
**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**  
**Site Management Periodic Review Report Notice**  
**Institutional and Engineering Controls Certification Form**



**Site No.**                      **C851049**                      **Site Details**                      **Box 1**

**Site Name** Former Corning Hospital and Related Parcels

Site Address: 176 East Denison Pkwy.      Zip Code: 14830  
City/Town: Corning  
County: Steuben  
Site Acreage: 4.771

Reporting Period: May 21, 2021 to October 31, 2023

- |  | YES                                 | NO                                  |
|--|-------------------------------------|-------------------------------------|
| 1. Is the information above correct?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| If NO, include handwritten above or on a separate sheet.   |                                     |                                     |
| 2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?                              | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?                      | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| <b>If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.</b> |                                     |                                     |
| 5. Is the site currently undergoing development?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

- |   | <b>Box 2</b>                        |                          |
|---|-------------------------------------|--------------------------|
|   | YES                                 | NO                       |
| 6. Is the current site use consistent with the use(s) listed below?<br>Restricted-Residential, Commercial, and Industrial | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. Are all ICs in place and functioning as designed?  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and  
DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

**A Corrective Measures Work Plan must be submitted along with this form to address these issues.**

\_\_\_\_\_  
Signature of Owner, Remedial Party or Designated Representative

\_\_\_\_\_  
Date

**Box 2A**

YES NO

8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?

☐☒

**If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.**

9. Are the assumptions in the Qualitative Exposure Assessment still valid?  
(The Qualitative Exposure Assessment must be certified every five years)

☒☐

**If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.**

**SITE NO. C851049****Box 3****Description of Institutional Controls**ParcelOwnerInstitutional Control**318.09-01-013.000**

Riedman Purcell CH I LLC

Ground Water Use Restriction  
Soil Management Plan  
Site Management Plan  
IC/EC Plan

## Landuse Restriction

An Environmental Easement (EE) limits the site to Restricted Residential use and prohibits the use of groundwater. In addition, the EE references a Site Management Plan, inclusive of an IC/EC Plan and Soil Management Plan necessary to ensure the remedy remains protective of human health and the environment.

**318.09-01-018.001**

Riedman Purcell CH II LLC

Landuse Restriction  
Site Management Plan

Ground Water Use Restriction  
Soil Management Plan

## IC/EC Plan

An Environmental Easement (EE) limits the site to Restricted Residential use and prohibits the use of groundwater. In addition, the EE references a Site Management Plan, inclusive of an IC/EC Plan and Soil Management Plan necessary to ensure the remedy remains protective of human health and the environment.

**318.09-01-018.002**

Riedman Purcell CH II LLC

Ground Water Use Restriction  
Soil Management Plan  
Site Management Plan  
IC/EC Plan

## Landuse Restriction

An Environmental Easement (EE) limits the site to Restricted Residential use and prohibits the use of groundwater. In addition, the EE references a Site Management Plan, inclusive of an IC/EC Plan and Soil Management Plan necessary to ensure the remedy remains protective of human health and the environment.

**Box 4****Description of Engineering Controls**

Parcel

Engineering Control

**318.09-01-013.000**

Cover System

Track 4 cleanup requires maintenance of cover systems consistent with restricted residential site use. Provisions for soil vapor intrusion evaluation and the installation of mitigation systems are required for all new occupied buildings.

**318.09-01-018.001**

Vapor Mitigation  
Cover System

Track 4 cleanup requires maintenance of cover systems consistent with restricted residential site use. Provisions for soil vapor intrusion evaluation and the installation of mitigation systems are required for all new occupied buildings.

**318.09-01-018.002**

Vapor Mitigation  
Cover System

Track 4 cleanup requires maintenance of cover systems consistent with restricted residential site use. Provisions for soil vapor intrusion evaluation and the installation of mitigation systems are required for all new occupied buildings.

**Periodic Review Report (PRR) Certification Statements**

1. I certify by checking "YES" below that:

- a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the Engineering Control certification;
- b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and complete.

YES NO

☒ ☐

2. For each Engineering control listed in Box 4, I certify by checking "YES" below that all of the following statements are true:

- (a) The Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;
- (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;
- (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;
- (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and
- (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

☒ ☐

**IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and  
DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.**

**A Corrective Measures Work Plan must be submitted along with this form to address these issues.**

\_\_\_\_\_  
Signature of Owner, Remedial Party or Designated Representative

\_\_\_\_\_  
Date

IC CERTIFICATIONS  
SITE NO. C851049

Box 6

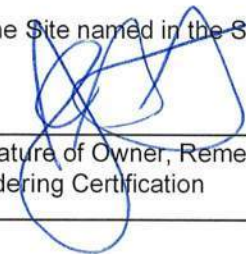
**SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE**

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Jervold D. Watkins at 45 East Ave, Rochester, NY 14604  
print name print business address

am certifying as Designated Representative (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

  
Signature of Owner, Remedial Party, or Designated Representative  
Rendering Certification

10-31-23  
Date

## EC CERTIFICATIONS

Box 7

### Professional Engineer Signature

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Daniel Noll at LaBella Associates, DPC  
300 State Street, Rochester, NY,  
print name print business address

am certifying as a Professional Engineer for the Owner  
(Owner or Remedial Party)



10/31/2023

Signature of Professional Engineer, for the Owner or  
Remedial Party, Rendering Certification

Stamp  
(Required for PE)

Date



# APPENDIX 2

SSDS Work Plan Design Drawings



November 2, 2018

Timothy A. Schneider, PE  
New York State Department of Environmental Conservation  
6274 East Avon-Lima Road  
Avon, New York 14414

**RE: Former Corning Hospital - NYSDEC BCP Site #C851049  
Sub-Slab Depressurization System Designs  
176 Denison Parkway East  
Corning, New York  
LaBella Project #2190002**

Dear Mr. Schneider,

LaBella Associates, D.P.C. ("LaBella") is pleased to submit this sub-slab depressurization system (SSDS) design on behalf of Riedman Acquisitions, LLC for a new building at the Former Corning Hospital Site located at 176 Denison Parkway East, City of Corning, Steuben County, New York, hereinafter referred to as the "Site." The Site is in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) (Site #C851049).

An approximate 40,000 square foot residential apartment building is currently being constructed at the Site. This SSDS design is for the 40,000 square foot building at 176 Denison Parkway East with frontage on Denison Parkway East. Additional designs will be submitted for other buildings in the future.

## **SUB-SLAB DEPRESSURIZATION SYSTEM COMPONENTS**

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Four (4) sub-slab systems will be installed within the 40,000 square foot building (approximately 1 per 10,000 square feet). It should be noted eighteen (18) individual garages will be constructed on the ground level of the building; the garages have direct access to the building and will be mitigated.

The systems will consist of perforated HDPE piping installed within a peastone trench connected to a schedule 40 PVC header pipe. All sub-slab piping will be 4-inch diameter. Each of the four (4) header pipes will be routed to the Electric Room and will penetrate the floor slab against the interior wall of the Electric Room. The vertical risers will be routed to above the roof and an in-line fan (RadonAway® GP-501), or similar, will be installed above the roofline. Fans will be installed a minimum of 25 feet from any air intake. A 10-mil vapor barrier will be installed beneath the slab. All penetrations through the floor slab will be sealed.

Eight (8) monitoring points (2 per system; approximately 1 per 5,000 square feet) consisting of 1/4 inch stainless steel tubing will be installed above the compacted sub-base, beneath the vapor barrier, and daylight in the Electric Room for sub-slab pressure monitoring.

A visual and audible alarm will be installed on each riser pipe to alert maintenance staff if any system loses vacuum. Each alarm will be installed on a separate circuit from its associated fan. A U-tube manometer will be installed on each riser pipe to demonstrate that pressure within the pipe is below atmospheric.





Refer to the attached drawings (G0.01 and G0.02) for SSDS layout and details. Also attached is an interior layout with Electric Room depicted, and a specification. As-built drawings of the installed systems will be developed and provided upon completion.

## **CERTIFICATION**

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I Daniel P. Noll certify that I am currently a NYS registered professional engineer and that this design 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).



If you have any questions please do not hesitate to call me at 585-295-6611 or email me at [dnoll@labellapc.com](mailto:dnoll@labellapc.com).

Respectfully submitted,

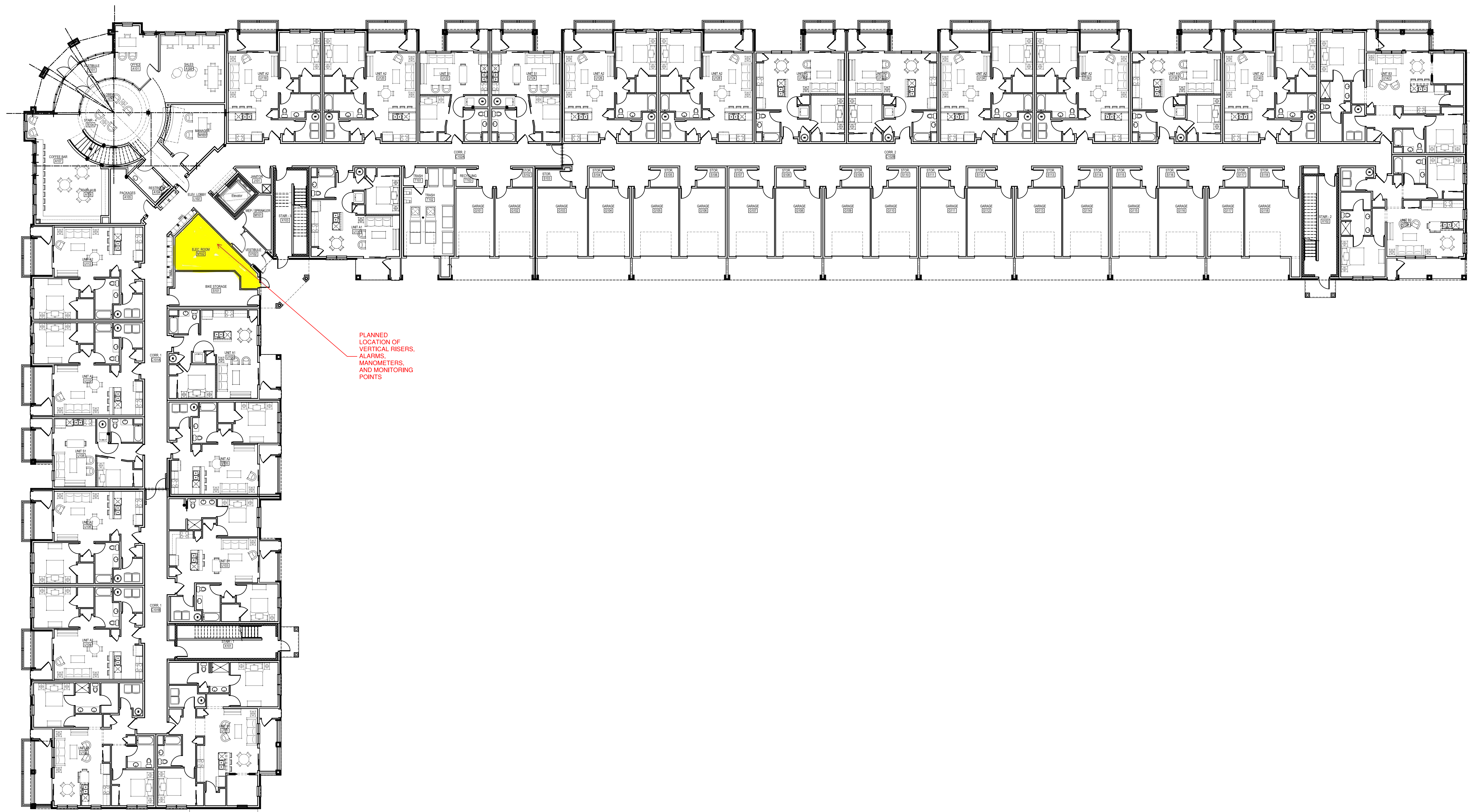
**LaBella Associates, D.P.C.**

Daniel P. Noll, P.E.  
Project Manager

### Attachments

cc: Mark Sergott (NYSDOH)  
Jerry Watkins (Riedman Acquisitions, LLC)

## DRAWINGS







1. 1/4 INCH STAINLESS STEEL MONITORING POINTS MOUNTED APPROXIMATELY 2 FEET ABOVE FINISHED FLOOR AGAINST AN INTERIOR WALL WITHIN ELECTRIC ROOM. REFER TO DETAIL 3: PROFILE AT GAUGE POINT.
2. 1/4 STAINLESS STEEL TUBING TERMINATED ABOVE SUB-BASE WITH FABRIC WRAPPED END. REFER TO DETAIL 6: MATERIAL PROFILE.
3. 4 INCH SCHEDULE 40 PVC RISER TO BE LOCATED 6 INCHES FROM WALL AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
4. INSTALL ALARM ON EACH RISER PIPE WITHIN ELECTRIC ROOM. REFER TO DETAIL 4: SUB-SLAB DEPRESSURIZATION ALARM SYSTEM.
5. 4 INCH SCHEDULE 40 PVC TO 4 INCH HDPE PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER.
6. 4 INCH HDPE PIPE WRAPPED IN FABRIC AND PLACED IN PEA STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE
7. 4 INCH SOLID PVC EXTENDING MAXIMUM 2 FEET AND ON EITHER SIDE OF WALL, GROUTED IN PLACE TO FORM WATER TIGHT CONNECTION. REFER TO DETAIL 7: PROFILE AT PENETRATION.
8. MOVE PIPING AS NEEDED IN FIELD TO AVOID PLUMBING.
9. INSTALL 4" CAP AT EACH VAPOR COLLECTION PIPE TERMINATION.
10. ALL SUB-SLAB VAPOR COLLECTION PIPING TO BE GEOTEXTILE-WRAPPED 4 INCH PERFORATED DUAL-WALLED CORRUGATED EXTERIOR SMOOTH INTERIOR HDPE.
11. HEADER PIPING TO BE 4 INCH SCHEDULE 40 PVC.
12. PEA STONE SHALL CONSIST OF WASHED MATERIAL THAT WILL PASS THROUGH A 2 INCH SIEVE AND BE RETAINED BY A 1/4 INCH SIEVE.
13. TO PROTECT THE VAPOR BARRIER, ALL PENETRATIONS MADE AFTER POURING OF THE SLAB, SUCH AS JOINTS, ETC, SHALL BE CUT IN A MANNER TO AVOID PENETRATING THE VAPOR BARRIER.
14. SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
15. THIS DRAWING IS NOT TO INTEND TO PROVIDE STRUCTURAL INFORMATION. REFER TO STRUCTURAL DRAWINGS.
16. CONTRACTOR TO CONFIRM NO AIR INTAKE IS WITHIN 25' FROM FAN EXHAUST.
17. SYSTEM 1, 2, 3, AND 4 INSTALL RADON AWAY GP-501 FAN OR EQUIVALENT.

FABRIC WRAPPED 4 INCH HDPE PERFORATED PIPE PLACED WITHIN MIDDLE OF  
PEA STONE TRENCH

4 INCH SOLID SCH 40 PVC PIPE PLACED WITHIN MIDDLE OF PEA STONE TRENCH  
SLOPED AWAY FROM VERTICAL RISER AT 1/4 INCH PER FOOT TO ALLOW FOR  
DRAINAGE.

1/4 INCH STAINLESS STEEL MONITORING POINTS PLACED ABOVE COMPACTED  
SUB-BASE MATERIAL, FABRIC WRAPPED AT END.

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation altered by their signature and date of such alteration,



176 DENISON PARKWAY EAST  
CORNING, NEW YORK 14830

ISSUED FOR  
CONSTRUCTION

**CONSTRUCTION**

DESIGNED BY: \_\_\_\_\_

DRAWN BY: \_\_\_\_\_

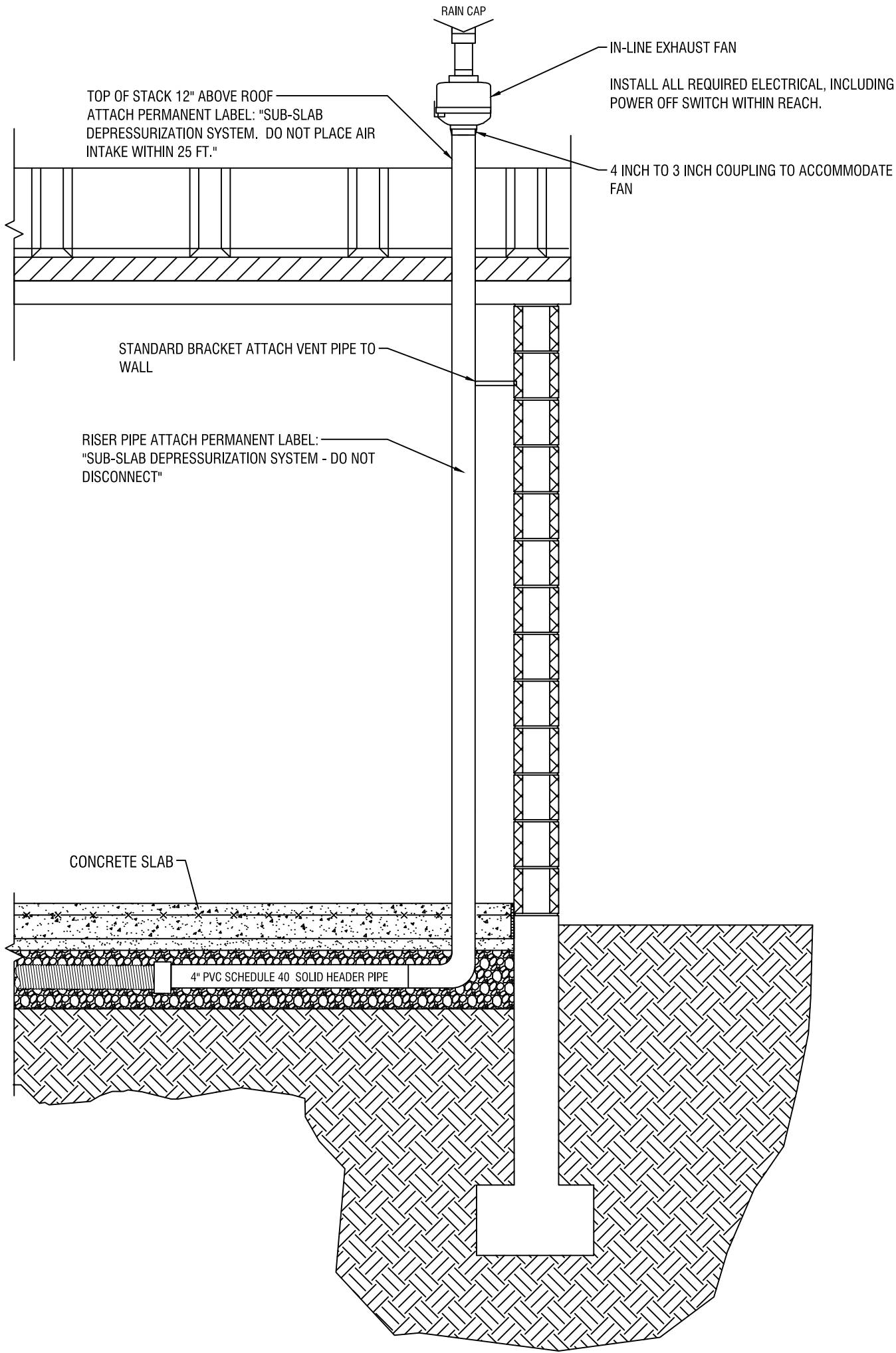
REVIEWED BY: \_\_\_\_\_

DATE: NOVEMBER, 2018

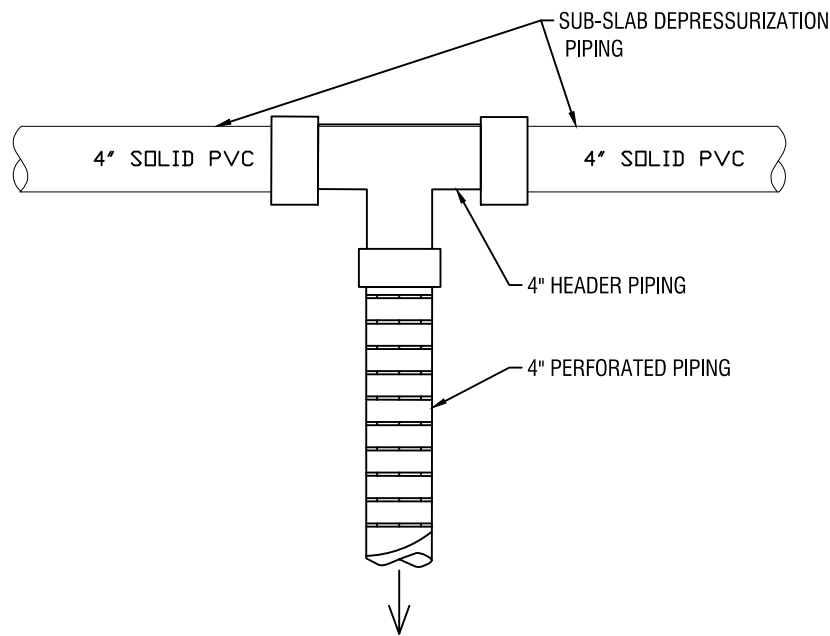
DATE: NOVEMBER, 2018

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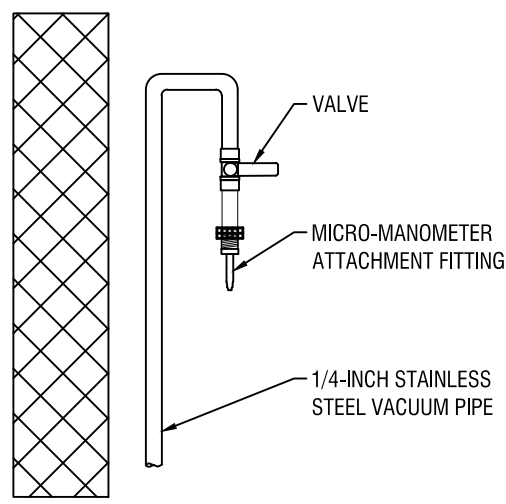
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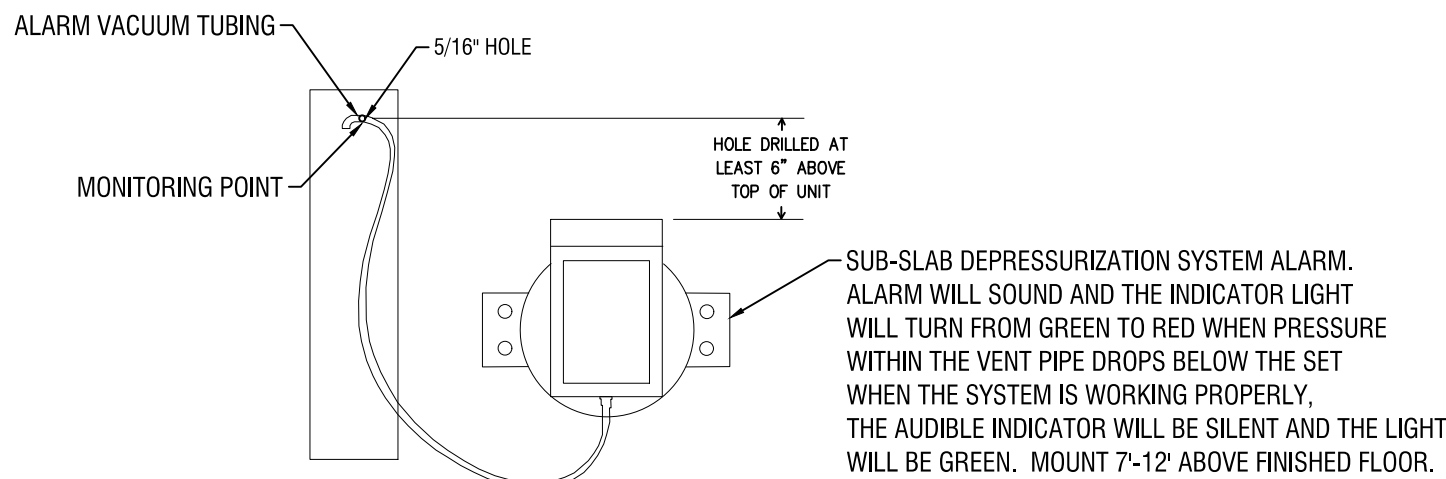
1 REAR END WALL  
SCALE: NONE



2 DETAIL AT HEADER  
SCALE: NONE

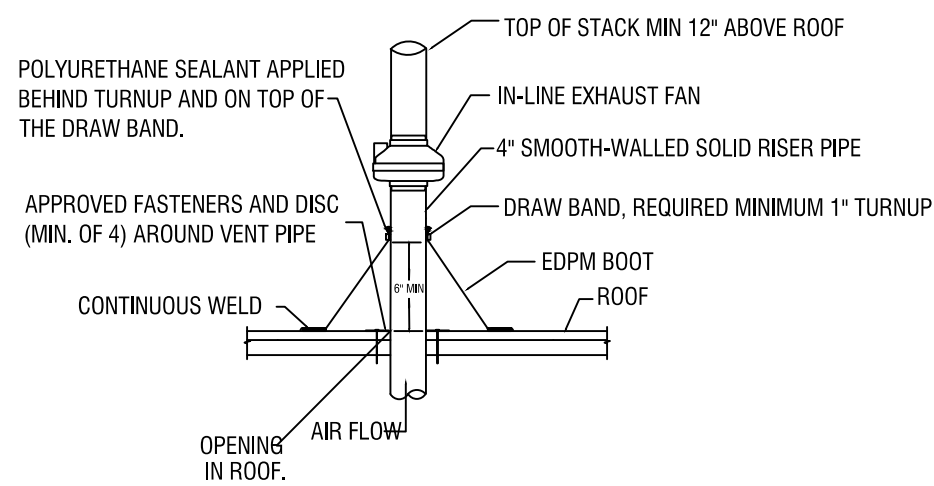


3 PROFILE AT GAUGE POINT  
SCALE: NONE

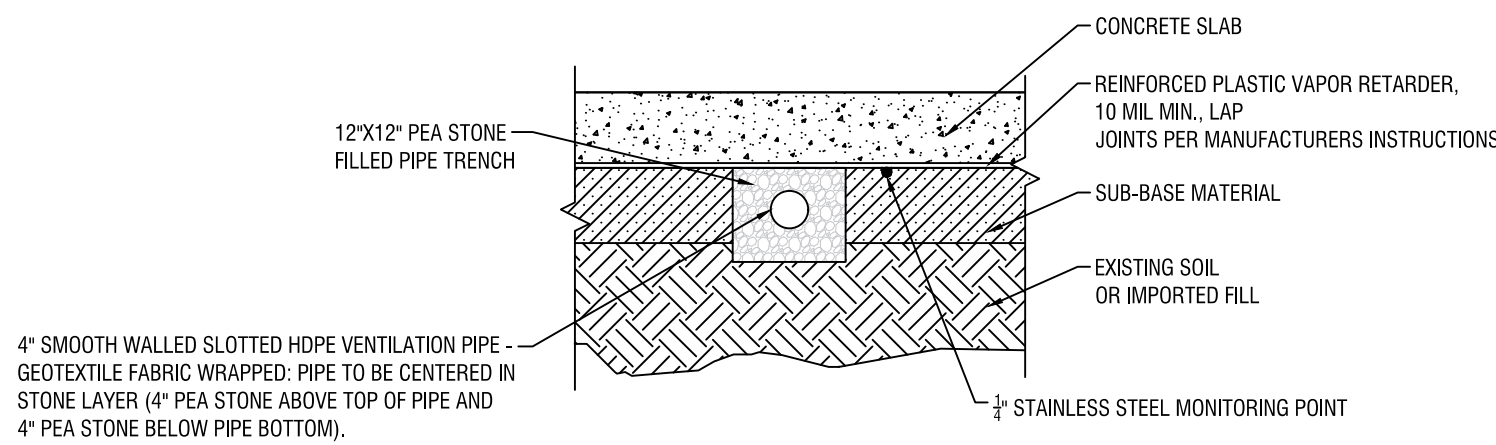


- NOTES:
- CONTRACTOR TO INSTALL ALARM ON SEPARATE CIRCUIT.

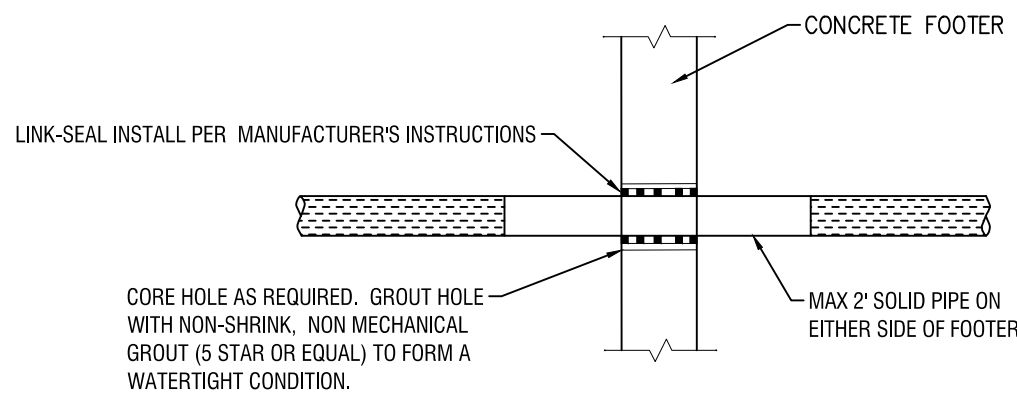
4 SUB-SLAB DEPRESSURIZATION SYSTEM ALARM  
SCALE: NONE



5 DETAIL AT ROOF  
SCALE: NONE



6 MATERIAL PROFILE  
SCALE: NONE



7 PROFILE AT PENETRATION  
SCALE: NONE

- NOTES:
- 1/4 INCH STAINLESS STEEL MONITORING POINTS MOUNTED APPROXIMATELY 2 FEET ABOVE FINISHED FLOOR AGAINST AN INTERIOR WALL. REFER TO DETAIL 3: PROFILE AT GAUGE POINT.
  - 1/4 STAINLESS STEEL TUBING TERMINATED ABOVE SUB-BASE WITH FABRIC WRAPPED END. REFER TO DETAIL 6: MATERIAL PROFILE.
  - 4 INCH SCHEDULE 40 PVC RISER TO BE LOCATED 6 INCHES FROM WALL AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
  - INSTALL ALARM ON EACH RISER PIPE WITHIN ELECTRIC ROOM. REFER TO DETAIL 4: SUB-SLAB DEPRESSURIZATION ALARM SYSTEM.
  - 4 INCH SCHEDULE 40 PVC TO 4 INCH HDPE PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER.
  - 4 INCH HDPE PIPE WRAPPED IN FABRIC AND PLACED IN PEA STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE.
  - 4 INCH SOLID PVC EXTENDING MAXIMUM 2 FEET AND ON EITHER SIDE OF WALL, GROUTED IN PLACE TO FORM WATER TIGHT CONNECTION. REFER TO DETAIL 7: PROFILE AT PENETRATION.
  - MOVE PIPING AS NEEDED IN FIELD TO AVOID PLUMBING.
  - INSTALL 4" CAP AT EACH VAPOR COLLECTION PIPE TERMINATION.
  - ALL SUB-SLAB VAPOR COLLECTION PIPING IS GEOTEXTILE-WRAPPED 4 INCH PERFORATED DUAL-WALLED CORRUGATED EXTERIOR SMOOTH INTERIOR HDPE.
  - HEADER PIPING SHOWN IS 4 INCH SCHEDULE 40 PVC.
  - PEA STONE SHALL CONSIST OF WASHED MATERIAL THAT WILL PASS THROUGH A 2 INCH SIEVE AND BE RETAINED BY A 1/4 INCH SIEVE.
  - TO PROTECT THE VAPOR BARRIER, ALL PENETRATIONS MADE AFTER POURING OF THE SLAB, SUCH AS JOINTS, ETC, SHALL BE CUT IN A MANNER TO AVOID PENETRATING THE VAPOR BARRIER.
  - SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
  - THIS DRAWING IS NOT INTENDED TO PROVIDE STRUCTURAL INFORMATION. REFER TO STRUCTURAL DRAWING.
  - CONTRACTOR TO CONFIRM NO AIR INTAKE IS WITHIN 25' FROM FANS.
  - SYSTEM 1, 2, 3, AND 4 INSTALL RADON AWAY GP-501 FAN, OR EQUIVALENT.

NO.	REVISION	BY	DATE
1			
2			
3			
4			
5			
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It is a violation of the New York Education Law Article 148, Sec. 2709b, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to prepare, or cause to be prepared, any drawing, specification, or report, or any part thereof, for a project of construction, or any part thereof, which is to be used in the construction of a building, or any part thereof, or for any other purpose, unless the person is a duly licensed architect, professional engineer, or land surveyor, and the drawing, specification, or report, or any part thereof, is signed and sealed by the person, and a specific designation of the profession.



**LaBella**  
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PROJECT CLIENT

176 DENISON PARKWAY EAST  
CORNING, NEW YORK 14830

DRAWING TITLE

SUB-SLAB DEPRESSURIZATION  
SYSTEM DETAILS

ISSUED FOR

CONSTRUCTION

DESIGNED BY

---

DRAWN BY

DJP

DATE

NOVEMBER, 2018

REVIEWED BY

---

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PROJECT/DRAWING NUMBER

2190002

**GO.02**

## **SPECIFICATION**



## SECTION 026216 – SUB-SLAB VAPOR MITIGATION SYSTEM

### PART 1 - VAPOR BARRIER

#### 1.1 GAS PERMEABLE LAYER

- A. A layer of gas permeable material shall be placed under all concrete floor slabs and other floor systems that directly contact the ground and are within the walls of the interior spaces of the building, to facilitate installation of a Sub-Slab Depressurization System (SSDS). The gas permeable material shall consist of a uniform layer of clean aggregate, a minimum of 6-inches thick. The aggregate shall meet the requirements of NYSDOT Bedding Material 733-23 or equivalent.

#### 1.2 VAPOR RETARDER

- A. A minimum 10-mil polyethylene or approved equivalent flexible sheeting material shall be placed above the crushed stone layer to serve as a soil-gas-barrier by bridging any cracks that develop in the slab or floor assembly. The sheeting should cover the entire floor area, and separate sections of sheeting should be overlapped at least 12 inches and sealed at these seams according to the manufacturer's instructions. The sheeting shall be sealed around any pipe, wire or other penetrations of the material, per the manufacturer's instructions. All punctures or tears in the material shall be repaired according to the manufacturer's instructions. The sheeting shall meet the following requirements (Stego Wrap 10-mil Class A Vapor Retarder or approved equivalent)

Property and ASTM Standard	Performance Standard
Underslab Vapor Retarders, ASTM E 1745 Class A, B, & C	Exceeds Class A, B, & C
Water Vapor Permeance, ASTM F1249	0.0254 perms
Tensile Strength, ASTM D 882	50.60 lbf./in.
Puncture Resistance, ASTM D1709	3006 grams

- B. Seams in the vapor barrier shall be sealed with a product designed to be compatible with the vapor barrier (e.g., Stego Tape for Stego Wrap products).

- C. Follow all manufacturer's instructions and specifications.

#### PREVENTION OF SOIL VAPOR ENTRY

- A. All concrete floor slabs shall be designed, mixed, placed, reinforced, consolidated, finished, and cured to minimize the formation of cracks in accordance with standards set forth in the Model

Building Codes.

- B. Large openings, if any, through the concrete floor slab, grade beams, or other foundation components in contact with the soil (e.g., spaces around storm sewer piping, etc.) shall be filled or closed with materials that provide a permanent airtight seal such as non-shrink mortar, grouts, expanding foam, or similar materials designed for such application.
- C. Smaller gaps around all pipe, wire, or other objects, if any, that penetrate concrete floor slab or other floor assemblies shall be made air-tight with an elastomeric joint sealant, as defined in ASTM C920-87, and applied in accordance with the manufacturer's recommendations.
- D. All control joints, isolation joints, construction joints, and any other joints in the concrete floor slab or between the floor slab and the building's walls shall be sealed. A continuous formed gap (for example, a "tooled edge") which allows the application of a sealant that will provide a continuous, airtight seal shall be created along all joints. When the slab has cured, the gap shall be cleared of loose material and filled with an elastomeric joint sealant, as defined in ASTM C920-97, and applied in accordance with the manufacturer's recommendations.
- E. Joints, cracks, or other openings around all penetrations of both exterior and interior surfaces of masonry block or poured concrete foundation components below the ground surface shall be sealed with an elastomeric sealant that provides an air-tight seal. Penetrations of poured concrete walls should also be sealed on the exterior surface. This includes sealing of wall tie penetrations, if applicable.

PART 2 – VAPOR COLLECTION AND VENT SYSTEM

- A. Lengths of sub-slab vapor collection piping shall be installed beneath the vapor barrier as depicted on drawing G0.01. Sub-slab vapor collection piping shall be geotextile-wrapped, 4-inch diameter, perforated, dual-walled, corrugated exterior, smooth interior high density polyethylene (HDPE).
- B. Vapor collection piping shall be installed in the center of 12" x 12" pipe trenches as depicted on drawing G0.02. Pipe trenches shall be backfilled with PEA STONE, which shall consist of material that will pass through a 2-inch sieve and be retained by a 1/4-inch sieve.
- C. Install perforated cap at each vapor collection pipe termination, and slope header pipe up 1/4-inch per foot from connection with vapor collection piping.
- D. The collection piping shall be connected via the appropriate fittings to 4-inch, schedule 40, polyvinyl chloride (PVC) header pipe. The header pipes shall penetrate the building envelope, through the concrete floor slab within Electric Room, as depicted on drawings G0.01 and G0.02.
- E. The header pipes shall terminate at vertical standpipes at least 12 inches above the surface of the roof, in a location that is: at least 25 feet from any air intakes; at least 10 feet away from any window, air intake, or other opening into the conditioned spaces of the building that is less than 2 feet below the exhaust point; and at least 10 feet from any adjoining or adjacent buildings.
- F. All exposed and visible interior and exterior vent pipes shall be identified with labels placed at least every 25 feet. The labels shall read: "Sub-Slab Depressurization System – Do Not Disconnect."



- G. Vent pipes shall be installed in a configuration and supported in a manner that ensures that any rain water or condensation accumulating within the pipes drains downward into the ground beneath the vapor barrier.
- H. Completion is subject to owner/environmental consultant approval. The owner and environmental consultant shall be provided 48-hour notice to inspect the system prior to any portion being covered. Inspections will include at least (but not limited to) the following:
- a. Below Grade Portions of Sub-Slab Depressurization System Piping and Monitoring Piping – prior to covering with stone
  - b. Soil Vapor Barrier – after sealing all penetrations, foundations edges and seams and prior to pouring of concrete
  - c. Above Grade Portions of Sub-Slab Depressurization System – Prior to any portions being sealed behind walls, pipe chases, etc.
- I. Contractor shall provide photos of piping, trenches, etc.

### PART 3 – FANS

#### 3.1 GENERAL

- A. “Activation” of the SSDS shall be completed by adding exhaust fans in the vertical stand pipes on the roof, as shown on drawing G0.02.
- B. The fans shall meet the following requirements (in-line exhaust fans, such as the “RadonAway GP-501”, or approved equivalent).

Watts	Max Pres. "wc	Typical flow [ft <sup>3</sup> /min (cfm)] vs. static pressure [water column inches ("wc)]								
60-140	4.2	0.0" wc	0.5" wc	1.0" wc	1.5" wc	2.0" wc	2.5" wc	3.0" wc	3.5" wc	4.0" wc
		-- cfm	-- cfm	95 cfm	87 cfm	80 cfm	70 cfm	57 cfm	30 cfm	10 cfm

- C. The fans in the vent pipes and all positively-pressurized portions of the vent pipes shall be located outside the habitable space of the building or within interior mechanical pipe chases if open to the atmosphere and closed to interior spaces.
- D. The fans in the vent pipes shall be installed in vertical runs of the vent pipes, at an approximate height of at least 1-ft. above the roofline to facilitate maintenance and repair.

#### 3.2 WARNING SYSTEMS

- A. Each vertical standpipe shall be equipped with a U-tube type manometer or approved equivalent below the fan and within the Electric Room in a visible location, to demonstrate that pressure within the pipe is below atmospheric pressure.
- B. Each fan shall be equipped with a prominently positioned visible or audible warning system (e.g., RadonAway Checkpoint IIA Mitigation Alarm or approved equivalent) to alert the building occupant if there is loss of pressure or air flow in the vent pipe, or if the fan ceases operation. Location of the warning system shall be subject to owner/Environmental Project Monitor approval.

The Contractor will connect the alarm and fan on separate breakers and provide that information to the Environmental Project Monitor. The fans and alarms shall be labeled with a distinct number in order to identify each fan and associated alarm system. The breakers shall also be labeled with fan number and alarm number. The breaker information will be provided to the Engineer.

#### PART 4 – TEST POINTS

- A. Test Points, consisting of an open length of stainless steel vacuum tubing, shall be installed beneath the slab as depicted on drawing G0.01. The open end of the stainless steel vacuum tubing shall be fabric-wrapped at its sub-slab termination as located as shown on drawing G0.02. The vacuum tubing shall be routed as shown on drawings G0.01 and G0.02 and terminate in a barbed ¼-inch hose fitting. The terminations shall be mounted at an approximate height of three (3) feet above the local grade within the Electric Room and fitted with a stop valve beneath the barbed fitting as depicted in drawing G0.01. The contractor shall label each test point at the termination point and provide labeling to the Engineer along with a figure illustrating the full route of the test point and the associated label.
- B. If located in a high-traffic area, each gauge/test point will be protected by the Contractor.

#### PART 5 – MISCELLANEOUS

- A. Heating, Ventilating, and Air Conditioning (HVAC) systems shall be designed and installed to avoid depressurization of the building relative to underlying and surrounding soil. Specifically, joints in air ducts and plenums passing through unconditioned spaces shall be sealed.
- B. The Contractor shall conduct a backdraft test to ensure the operation of the SSDS system does not create backdraft when the HVAC system is in operation. The Contractor will complete the backdraft test per the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2016. The Contractor will provide a letter or report documenting the backdraft test to the Environmental Project Monitor within 14 days of completing the backdraft test.
- C. Contractor shall label each monitoring point and system riser numerically in a visible location above the floor slab within Electric Room.

END OF SECTION 026216



March 6, 2020

Timothy A. Schneider, PE  
New York State Department of Environmental Conservation  
6274 East Avon-Lima Road  
Avon, New York 14414

Re: **Former Corning Hospital – NYSDEC BCP Site #C851049**  
**Sub-Slab Depressurization System Design**  
**176 Dennison Parkway & 201 East 1<sup>st</sup> Street, Corning, New York**  
**LaBella Project No. 2190002**

Dear Mr. Schneider,

LaBella Associates, D.P.C. (“LaBella”) is pleased to submit this updated sub-slab depressurization system (SSDS) design on behalf of Riedman Acquisitions, LLC for a new building at the Former Corning Hospital Site located at 176 Dennison Parkway & 201 East 1<sup>st</sup> Street, City of Corning, Steuben County, New York, hereinafter referred to as the “Site.” The Site is in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) (Site #C851049). These updates are based on comments received from NYSDEC on January 16, 2020.

An approximate 22,000 square foot (SF) residential apartment building is currently planned for the Site. This SSDS design is for the 22,000 SF building at 176 Dennison Parkway with frontage on East 1<sup>st</sup> Street (see attached Figure 1). This SSDS system is separate from the northern building currently in place on the Site.

This SSDS design was designed in accordance with the New York State Department of Health’s (NYSDOH) “Guidance for Evaluating Soil Vapor Intrusion in the State of New York,” dated October 2006.

#### **SUB-SLAB DEPRESSURIZATION SYSTEM COMPONENTS**

Two (2) sub-slab systems will be installed within the 22,000 SF building (approximately 1 per 11,000 SF). It should be noted sixteen (16) individual garages will be constructed on the ground level of the building; the garages have direct access to the building and will be mitigated.

The systems will consist of perforated HDPE piping installed within a peastone trench connected to a schedule 40 PVC header pipe. All sub-slab piping will be 4-inch diameter. Each of the two (2) header pipes will be routed to the Trash Collection room and will penetrate the floor slab against the interior wall of the Trash Collection room adjacent to the Elevator Shaft. The vertical risers will be routed to above the roof and an in-line fan (RadonAway® GP-501), or similar, will be installed above the roofline. Fans will be installed a minimum of 25 feet from any air intake. A 10-mil vapor barrier will be installed beneath the slab. All penetrations through the floor slab will be sealed.

Four (4) monitoring points (2 per system; approximately 1 per 5,500 SF) consisting of ¼ inch stainless steel tubing will be installed above the compacted sub-base, beneath the vapor barrier, and daylight in the Electrical Room for sub-slab pressure monitoring.



A visual and audible alarm will be installed on each riser pipe to alert maintenance staff if any system loses vacuum. Each alarm will be installed on a separate circuit from its associated fan. A U-tube manometer will be installed on each riser pipe to demonstrate that pressure within the pipe is below atmospheric.

Refer to the attached drawings (G0.01 and G0.02) for SSDS layout and details. Also attached is an interior layout with the Trash Collection Room depicted, and a specification. As-built drawings of the installed systems will be developed and provided upon completion and the Site Management Plan (SMP) will be updated.

### **CERTIFICATION**

I, Daniel P. Noll, certify that I am currently a NYS-registered professional engineer and that this design 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).



If you have any questions, please do not hesitate to call me at (585) 295-6611 or email me at [dnoll@labellapc.com](mailto:dnoll@labellapc.com).

Respectfully submitted,

**LABELLA ASSOCIATES, D.P.C.**

Daniel P. Noll, P.E.  
Project Manager

Attachment

## Drawings





**ACCESSIBLE UNIT CALCULATIONS**

BUILDING TYPE 1  
TOTAL UNITS = 97

BUILDING TYPE 2  
TOTAL UNITS = 35

1. 100% OF UNITS SHALL COMPLY WITH NEW YORK STATE ACCESSIBILITY REQUIREMENTS.

**GENERAL SITE NOTES**

1. THIS ARCHITECTURAL SITE PLAN IS TO BE USED FOR GENERAL INFORMATION, BUILDING IDENTIFICATION, AND RELATIVE POSITIONING OF THE BUILDINGS ONLY. FOR PRECISE SITE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO GEOMETRY, WATER, SEWER, DRAINAGE AND ADA SITE ACCESSIBILITY, REFER TO PLANS BY CIVIL ENGINEER. PERMITS ON SUCH PORTION OF WORK TO BE SUBMITTED SEPARATELY.

2. COORDINATE WITH ALL ELECTRICAL, PLUMBING & MECHANICAL ENGINEERING DOCUMENTS AFFECTING CONSTRUCTION, PRIOR TO FABRICATION, PURCHASE OR INSTALLATION OF ANY EQUIPMENT.

3. SEE CIVIL DRAWINGS FOR SITE ACCESSIBILITY REQUIREMENTS.

4. RETAINING WALLS OVER 30" IN HEIGHT WILL HAVE 42" GUARDRAILS WITH RAIL SPACING OF LESS THAN 4" CLEAR.

5. SEE CIVIL FOR CURB CUTS AND SIDEWALK INFORMATION.

6. PROVIDE SIGNAGE FOR USE BY FIRE DEPARTMENT INDICATING SPRINKLER EQUIPMENT ROOM AND FIRE PROTECTION EQUIPMENT COMPONENTS. SPRINKLER EQUIPMENT ROOM DOOR ASSEMBLIES SHALL BE PROVIDED WITH A SIGN CONFORMING TO THE REQUIREMENTS OF NFPA-13 AND SHALL BE AT LEAST 4" IN HEIGHT AND SHALL READ "SPRINKLER CONTROL VALVES". G.C. TO PROVIDE SHOP DRAWING SUBMITTAL TO ARCHITECT FOR APPROVAL PRIOR TO FABRICATION.

**VICINITY MAP**

**FIRE ACCESS LEGEND**

- FIRE DEPARTMENT PERSONNEL ACCESS POINT
- FIRE DEPARTMENT CONNECTION
- TRAFFIC DIRECTION

PERMIT REVIEW SET: 08-23-2019

**A0.02**

**RIEDMAN PURCELL CH III**  
176 DENISON PARKWAY EAST  
CORNING, NY 14830

**BSB DESIGN**  
bsbdesign.com

220 N. Smith St. Suite 210  
Pawson, IL 60967  
847.702.0200

JOB NO: WRT2025    PROJ MGR: DR  
DRAWING NO:    CHECKED:    SD

ARCHITECTURAL SITE PLAN

**RIEDMAN**

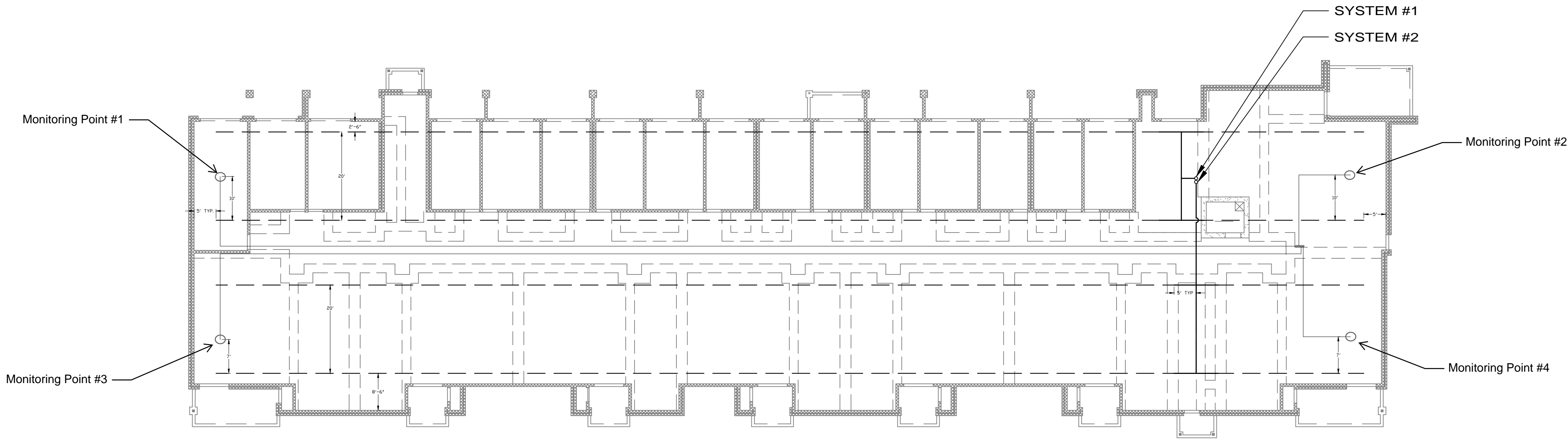
**Purcell**

ISSUE DATE: 07/09/2019

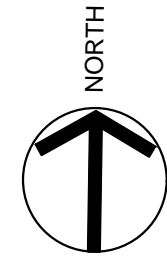
REVISIONS

THIS SET OF DRAWINGS IS THE PROPERTY OF RIEDMAN PURCELL CH III. IT IS TO BE USED FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF RIEDMAN PURCELL CH III.





0000 SUB-SLAB DEPRESSURIZATION SYSTEM  
1/16" = 1'



NOTES:

- 1/4 INCH STAINLESS STEEL MONITORING POINTS MOUNTED APPROXIMATELY 2 FEET ABOVE FINISHED FLOOR AGAINST AN INTERIOR WALL WITHIN ELECTRIC ROOM. REFER TO DETAIL 3: PROFILE AT GAUGE POINT.
- 1/4 STAINLESS STEEL TUBING TERMINATED ABOVE SUB-BASE WITH FABRIC WRAPPED END. REFER TO DETAIL 6: MATERIAL PROFILE.
- 4 INCH SCHEDULE 40 PVC RISER TO BE LOCATED 6 INCHES FROM WALL AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
- INSTALL ALARM ON EACH RISER PIPE WITHIN ELECTRIC ROOM. REFER TO DETAIL 4: SUB-SLAB DEPRESSURIZATION ALARM SYSTEM.
- 4 INCH SCHEDULE 40 PVC TO 4 INCH HDPE PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER.
- 4 INCH HDPE PIPE WRAPPED IN FABRIC AND PLACED IN PEA STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE
- 4 INCH SOLID PVC EXTENDING MAXIMUM 2 FEET AND ON EITHER SIDE OF WALL, GROUTED IN PLACE TO FORM WATER TIGHT CONNECTION. REFER TO DETAIL 7: PROFILE AT PENETRATION.
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- SYSTEM 1, 2, 3, AND 4 INSTALL RADON AWAY GP-501 FAN OR EQUIVALENT.

LEGEND

- FABRIC WRAPPED 4 INCH HDPE PERFORATED PIPE PLACED WITHIN MIDDLE OF PEA STONE TRENCH
- 4 INCH SOLID SCH 40 PVC PIPE PLACED WITHIN MIDDLE OF PEA STONE TRENCH, SLOPED AWAY FROM VERTICAL RISER AT 1/4 INCH PER FOOT TO ALLOW FOR DRAINAGE.
- 1/4 INCH STAINLESS STEEL MONITORING POINTS PLACED ABOVE COMPACTED SUB-BASE MATERIAL, FABRIC WRAPPED AT END.

NO.	REVISION	BY	DATE
It is a violation of the New York Education Law Article 148, Sec. 7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to prepare, or cause to be prepared, any drawing, specification, or report, or any part thereof, which is to be used in connection with any project of construction, or any part thereof, if such person is not a duly licensed architect, professional engineer, or land surveyor and such person's name and a specific designation of the profession, and a specific designation of the profession, is not placed on the drawing, specification, or report.			



PROJECT/CLIENT

176 DENISON PARKWAY EAST  
CORNING, NEW YORK 14830

DRAWING TITLE

SUB-SLAB DEPRESSURIZATION  
SYSTEM LAYOUT

ISSUED FOR  
CONSTRUCTION

DESIGNED BY: ---  
DRAWN BY: DRP  
REVIEWED BY: ---  
DATE: NOVEMBER, 2018

22 Denison Development Corporation 01/000001 - Interior Corning  
Revised: 02/01/2018 Drawings: 02/01/2018

PROJECT/DRAWING NUMBER

2190002

G0.01



1. 1/4 INCH STAINLESS STEEL MONITORING POINTS MOUNTED APPROXIMATELY 2 FEET ABOVE FINISHED FLOOR AGAINST AN INTERIOR WALL. REFER TO DETAIL 3: PROFILE AT GAUGE POINT.
2. 1/4 INCH STAINLESS STEEL TUBING TERMINATED ABOVE SUB-BASE WITH FABRIC WRAPPED END. REFER TO DETAIL 6: MATERIAL PROFILE.
3. 4 INCH SCHEDULE 40 PVC RISER TO BE LOCATED 6 INCHES FROM WALL AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
4. INSTALL ALARM ON EACH RISER PIPE WITHIN TRASH COLLECTION ROOM. REFER TO DETAIL 4: SUB-SLAB DEPRESSURIZATION ALARM SYSTEM.
5. 4 INCH SCHEDULE 40 PVC TO 4 INCH HDPE PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER.
6. 4 INCH HDPE PIPE WRAPPED IN FABRIC AND PLACED IN PEA STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE.
7. 4 INCH SOLID PVC EXTENDING MAXIMUM 2 FEET AND ON EITHER SIDE OF WALL. GROUTED IN PLACE TO FORM WATER TIGHT CONNECTION. REFER TO DETAIL 7: PROFILE AT PENETRATION.
8. MOVE PIPING AS NEEDED IN FIELD TO AVOID PLUMBING.
9. INSTALL 4" CAP AT EACH VAPOR COLLECTION PIPE TERMINATION.
10. ALL SUB-SLAB VAPOR COLLECTION PIPING IS GEOTEXTILE-WRAPPED 4 INCH PERFORATED DUAL-WALLED CORRUGATED EXTERIOR SMOOTH INTERIOR HDPE.
11. HEADER PIPING SHOWN IS 4 INCH SCHEDULE 40 PVC.
12. PEA STONE SHALL CONSIST OF WASHED MATERIAL THAT WILL PASS THROUGH A 2 INCH SIEVE AND BE RETAINED BY A 1/4 INCH SIEVE.
13. TO PROTECT THE VAPOR BARRIER, ALL PENETRATIONS MADE AFTER POURING OF THE SLAB, SUCH AS JOINTS, ETC, SHALL BE CUT IN A MANNER TO AVOID PENETRATING THE VAPOR BARRIER.
14. SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
15. THIS DRAWING IS NOT TO INTENDED TO PROVIDE STRUCTURAL INFORMATION. REFER TO STRUCTURAL DRAWING.
16. CONTRACTOR TO CONFIRM NO AIR INTAKE IS WITHIN 25' FROM FANS.
17. SYSTEM 1 AND 2 INSTALL RADON AWAY GP-501 FAN, OR EQUIVALENT.

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way, if an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered" followed by their signature and date of such alteration.



PROJECT/CLIENT

DESIGNED BY:

NOVEMBER 2018

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2190002

G0.02



## Specification

Section 026216 – SUB-SLAB VAPOR MITIGATION SYSTEM

PART 1 – VAPOR BARRIER

1.1 GAS PERMEABLE layer

- A. A layer of gas permeable material shall be placed under all concrete floor and other floor systems that directly contact the ground and are within the walls of the interior spaces of the building, to facility installation of a Sub-Slab Depressurization System (SSDS). The gas permeable material shall consist of a uniform layer of clean aggregate, a minimum of 6-inches thick. The aggregate shall meet the requirements of NYSDOT Bedding Material 733-23 or equivalent.

1.2 VAPOR RETARDER

- A. A minimum 10-mil polyethylene or approved equivalent flexible sheeting material shall be placed above the crushed stone layer to serve as a soil-gas-barrier by bridging any cracks that develop in the slab or floor assembly. The sheeting should cover the entire floor area, and separate sections of sheeting should be overlapped at least 12 inches and sealed at these seams according to the manufacturer's instructions. The sheeting shall be sealed around any pipe, wire, or other penetrations of the material, per the manufacturer's instructions. All punctures or tears in the material shall be repaired according to the manufacturer's instructions. The sheeting shall meet the following requirements (Stego Wrap 10-mil Class A Vapor Retarder or approved equivalent):\

Property and ASTM Standard	Performance Standard
Underslab Vapor Retarders, ASTM E 1745 Class A, B, & C	Exceeds Class A, B, & C
Water Vapor Permeance, ASTM F1249	0.0254 perms
Tensile Strength, ASTM D 882	50.60 lbf/in
Puncture Resistance, ASTM D1709	3006 grams

- B. Seams in the vapor barrier shall be sealed with a product designed to be compatible with the vapor barrier (e.g. Stego Tape for Stego Wrap products).

- C. Follow all manufacturer's instructions and specifications.

1.3 PREVENTION OF SOIL VAPOR ENTRY

- A. All concrete floor slabs shall be designed, mixed, placed, reinforced, consolidated, finished, and cured to minimize the formation of cracks in accordance with standards set forth in the Model Building Codes.
- B. Large openings, if any, through the concrete floor slab, grade beams, or other foundation components in contact with the soil (e.g. spaces around storm sewer piping, etc.) shall be filled or closed with materials that provide a permanent airtight seal such as non-shrink mortar, grouts, expanding foam, or similar materials designed for such application.

- C. Smaller gaps around all pipe, wire, or other objects, if any, that penetrate concrete floor slab or other floor assemblies shall be made air-tight with an elastomeric joint sealant, as defined in ASTM C920-87, and applied in accordance with the manufacturer's recommendations.
- D. All control joints, isolation joints, and any other joints in the concrete floor slab or between the floor slab and the building's walls shall be sealed. A continuous formed gap (for example, a "tooled edge") which allows the application of a sealant that will provide a continuous, airtight seal shall be created along all joints. When the slab has cured, the gap shall be cleared of loose material and filled with an elastomeric joint sealant, as defined in ASTM C920-97, and applied in accordance with the manufacturer's recommendations.
- E. Joints, cracks, or other openings around all penetrations of both exterior and interior surfaces of masonry block or poured concrete foundation components below the ground surface shall be sealed with an elastomeric sealant that provides an airtight seal. Penetrations of poured concrete walls should also be sealed on the exterior surface. This includes sealing of wall tie penetrations, if applicable.

## PART 2 – VAPOR COLLECTION AND VENT SYSTEM

- A. Lengths of sub-slab vapor collection piping shall be installed beneath the vapor barrier as depicted on drawing G0.01. Sub-slab vapor collection piping shall be geotextile-wrapped, 4-inch diameter, perforated, dual-walled, corrugated exterior, smooth interior high-density polyethylene (HDPE).
- B. Vapor collection piping shall be installed in the center of 12" x 12" pipe trenches as depicted on drawing G0.02. Pipe trenches shall be backfilled with PEA STONE, which shall consist of material that will pass through a 2-inch sieve and be retained by a ¾-inch sieve.
- C. Install perforated cap at each vapor collection pipe termination, and slope header pipe up ¼-inch per foot from connection with vapor collection piping.
- D. The collection piping shall be connected via appropriate fittings to 4-inch, Schedule 40, poly-vinyl chloride (PVC) header pipe. The header pipes shall penetrate the building envelope, through the concrete floor slab within the Trash Collection Room, as depicted on drawings G0.01 and G0.02.
- E. The header pipes shall terminate at vertical standpipes at least 12 inches above the surface of the roof, in a location that is: at least 25 feet from any air intakes; at least 10 feet away from any window, air intake, or other opening into the conditioned spaces of the building that is less than 2 feet below the exhaust point, and at least 10 feet from any adjoining or adjacent buildings.
- F. All exposed and visible interior and exterior vent pipes shall be identified with labels placed at least every 25 feet. The labels shall read: "Sub-Slab Depressurization System – Do Not Disconnect."
- G. Vent pipes shall be installed in a configuration and supported in a manner that ensures that any rain water or condensation accumulating within the pipes drains downward into the ground beneath the vapor barrier.
- H. Completion is subject to owner/environmental consultant approval. The owner and environmental consultant shall be provided 48-hour notice to inspect the system prior to any portion being covered. Inspections will include at least (but not limited to) the following:
  - a. Below Grade Portions of Sub-Slab Depressurization System Piping and Monitoring Piping – prior to covering with stone
  - b. Soil Vapor Barrier – after sealing all penetrations, foundations edges and seams and prior to pouring of concrete

- c. Above Grade Portions of Sub-Slab Depressurization System – Prior to any portions being sealed behind walls, pipe chases, etc.

I. Contractor shall provide photos of piping, trenches, etc.

### PART 3 – FANS

#### 3.1 GENERAL

- A. “Activation” of the SSDS shall be completed by adding exhaust fans in the vertical stand pipes on the roof, as shown on drawing G0.02.
- B. The fans shall meet the following requirements (in-line exhaust fans, such as the “RadonAway GP-501”, or approved equivalent).

Watts	Max Pres. “wc	Typical flow [ft <sup>3</sup> /min (cfm)] vs. static pressure [water column inches (“sc”)]								
60-140	4.2	0.0” wc	0.5” wc	1.0” wc	1.5” wc	2.0” wc	2.5” wc	3.0” wc	3.5” wc	4.0” wc
		--cfm	--cfm	95 cfm	87 cfm	80 cfm	70 cfm	57 cfm	30 cfm	10 cfm

- C. The fans in the vent pipes and all positively-pressurized portions of the vent pipes shall be located outside the habitable space of the building or within interior mechanical pipe chases if open to the atmosphere and closed to interior spaces.
- D. The fans in the vent pipes shall be installed in vertical runs of the vent pipes, at an approximate height of at least 1-ft. above the roofline to facilitate maintenance and repair.

#### 3.2 WARNING SYSTEMS

- A. Each vertical standpipe shall be equipped with a U-tube type manometer or approved equivalent below the fan and within the Trash Collection room in a visible manner, to demonstrate that pressure within the pipe is below atmospheric pressure.
- B. Each fan shall be equipped with a prominently positioned visible or audible warning system (e., RadonAway Checkpoint IIA Mitigation Alarm or approved equivalent) to alter the building occupant is there is loss of pressure or air flow in the vent pipe, or if the fan ceases operation. Location of the warning system shall be subject to owner/Environmental Project Monitor approval. The Contractor will connect the alarm and fan on separate breakers and provide that information to the Environmental Project Monitor. The fans and alarms shall be labeled with a distinct number in order to identify each fan and associated alarm system. The breakers shall also be labeled with fan number and alarm number. The breaker information will be provided to the Engineer.

### PART 4 – TEST POINTS

- A. Test Points, consisting of an open length of stainless steel vacuum tubing, shall be installed beneath the slab as depicted on drawing G0.01. The open end of the stainless steel vacuum tubing shall be fabric-wrapped as its sub-slab termination as shown on drawing G0.02. The vacuum tubing shall be routed as shown on drawings G0.01 and G0.02 and terminate in a barbed ¼-inch hose fitting. The terminations shall be mounted at an approximate height of three (3) feet above the local grade within the Electric Room and fitted with a stop valve beneath the barbed fitting as depicted in drawing G0.01. The contractor shall label each test point at the termination point and provide labeling to the Engineer along with a figure illustrating the full route of the test point and the associated label.
- B. If located in a high-traffic area, each gauge/test point will be protected by the Contractor.

PART 5 – MISCELLANEOUS

- A. Heating, Ventilating, and Air Conditioning (HVAC) systems shall be designed and installed to avoid depressurization of the building relative to the underlying and surrounding soil. Specifically, joints in air ducts and plenums passing through unconditioned spaces shall be sealed.
- B. The Contractor shall conduct a backdraft test to ensure the operation of the SSDS system does not create backdraft when the HVAC system is in operation. The Contractor will complete the backdraft test per the NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2016. The Contractor will provide a letter or report documenting the backdraft test to the Environmental Project Monitor within 14 days of completing the backdraft test.
- C. Contractor shall label each monitoring point and system riser numerically in a visible location above the floor slab within the Electric Room.

END OF SECTION 026216



# APPENDIX 3

## Site Inspection Photographs























24 STRAND  
3RD FLOOR





176



ELECTRICAL

176 DENISON

176Denison.com  
607-654-4400







MAVA TORQUE  
553 m/b 132-1111

2

1

3

4

5

ON 1 BALL VALVE

ON 1 BALL VALVE



**REMOTE ALARM  
RADON REMOVAL SYSTEM**  
A Red Light and Audible Alarm  
Indicates a loss of vacuum pressure  
in your Radon Removal System.  
Locate your Checkpoint (in Alarm  
System Page) Disconnected Power  
from the Checkpoint Alarm and Call  
System Installer for Service.  
RADONWAY  
100% Satisfied or Your Money Back

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**NOTICE**

**Radon System Monitor**  
Green light indicates vacuum pressure in vent line  
(system operating) loss of vacuum pressure  
causes red light to come on. If red light comes on,  
disconnect power from system and call for service.  
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RADONWAY  
100% Satisfied or Your Money Back





























ON  
OFF } BALL VALVE

1/4  
CP3M

# NOTICE

## RADON SYSTEM MONITOR DO NOT ALTER OR DISCONNECT

Green light indicates vacuum pressure in ventline (system operating). A red light and audible alarm indicates a loss of vacuum pressure.

If red light appears/alarm sounds, disconnect power from alarm unit and call system installer for service. The EPA recommends testing Radon levels at least every 2 years.

RadonAware

Checkpoint IIa Alarm

Priority

# NOTICE

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RadonAware

Checkpoint IIa Alarm

Priority



