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

June 25, 2024

Dan Noll
Labella
300 State Street, Suite 201
Rochester, New York 14614

Re: Passive Sub-Slab Depressurization System and
Soil Vapor Intrusion Work Plan
Former Penn Yan Marine
Site Number: C862005
Milo (T), Yates (C)

Dear Mr. Noll:

The New York State Department of Environmental Conservation (Department) in conjunction with the New York State Department of Health (NYSDOH) have reviewed the Passive Sub-Slab Depressurization System and Soil Vapor Intrusion Work Plan (Work Plan) dated April 15, 2024 for the Former Penn Yan Marine site (Site) located at 15 Waddell Avenue, Penn Yan, Yates County. Based on the information presented in the Work Plan, the Work Plan is conditionally approved with the following modifications and clarifications.

1. The Department understands that the Work Plan dated April 15, 2024 is solely for Lots #302 and 303 at the Site.

2. The Department understands that the residential buildings being constructed are condominiums that are under common ownership or a single owner/managing entity for the Site.

3. The Department understands that if the passive systems become operational an Operation and Maintenance (O&M) Plan will be developed in accordance with DER-10, the Site's approved Site Management Plan, and NYSDOH guidance.

4. The Department understands that an ambient/outdoor air sample will be collected for each post-installation soil vapor intrusion sampling event.

5. The Department understands that a product inventory will be completed at each sampling location.

6. Given the elevated concentrations of VOCs within the groundwater in portions of the site, consideration should be given to the installation of active SSDSs in the building.

7. In order to verify the effectiveness of the SSDS at preventing exposure to site contaminants via the soil vapor intrusion pathway, post mitigation pressure field extension testing is needed to verify the extent of the building footprint is depressurized, and additionally, indoor air analytical sampling is needed to verify that the SSDS is functioning effectively and that contaminants in indoor air are

within background. Also, additional indoor air sampling will be required during the next heating season.

8. Please note that in addition to the SVI Matrices A, B and C; Matrices D, E and F have been added to the list for additional contaminants. These Matrices should be used and referenced where needed in the document.

9. The Department understands that a Construction Completion Report (CCR) will be prepared in accordance with DER-10 and Part 375 documenting the installation of the systems. The CCR will have all supporting documentation, certification language, and as-builts drawings. The CCR will be submitted to the Department and the NYSDOH project managers for review.

Within fifteen (15) days of the date of this letter the Applicant must elect in writing (electronic notification is acceptable) one of the following options:

- Option A: Accept the modified work plan;
- Option B: Invoke dispute resolution as set forth in 6 NYCRR Part 35-1.5(b)(2); or
- Option C: Terminate the Brownfield Cleanup Agreement in accordance with 6 NYCRR Part 375-3.5.

If the Applicant chooses to accept Option A, this letter becomes part of the conditionally approved Passive Sub-Slab Depressurization System and Soil Vapor Intrusion Work Plan dated April 15, 2024. If Option A is chosen then a copy of the conditionally approved Passive Sub-Slab Depressurization System and Soil Vapor Intrusion Work Plan, along with this letter attached must be placed in the document repository within 1 week of accepting Option A and prior to any sampling events. Please provide notification to the Department that the conditionally approved Passive Sub-Slab Depressurization System and Soil Vapor Intrusion Work Plan, and a copy of this letter have been placed in the document repository (electronic notification is acceptable).

The State seeks to resolve the outstanding differences in a mutually agreeable manner, which addresses the requirements of the Brownfield Cleanup Agreement and associated work plans. If the Site's technical team has any questions or concerns regarding this letter or need further assistance with the Site, please feel free to contact me at 585-226-5354 or via e-mail charlotte.theobald@dec.ny.gov. If the Site's legal team has any questions or concerns regarding this letter or need further assistance with the Site, please feel free to contact Dudley Loew at 585-226-5368 or via e-mail at Dudley.loew@dec.ny.gov

Sincerely,

Charlotte B. Theobald
Assistant Engineer

ecs:
Michael Pelychaty (Labella)
Chris Iverson (Iverson Construction)
John Waugh (Chrisanntha Inc.)

Thomas Walsh (Barclay Damon)
Kevin McAuliffe (Barclay Damon)
Justin Deming (NYSDOH)
Sarita Wagh (NYSDOH)
Dudley Loew (NYSDEC)
David Pratt (NYSDEC)

April 15, 2024

Charlotte Theobald
NYS Department of Environmental Conservation
6274 East Avon-Lima Road
Avon, New York 14414

RE: Passive Sub-Slab Depressurization System and Soil Vapor Intrusion Work Plan
Lots #302 and #303
Former Penn Yan Marine – NYSDEC Site C862005
15 Waddell Ave, Penn Yan, New York
LaBella Project No. 2211256

Dear Ms. Theobald,

LaBella Associates, D.P.C. ("LaBella") is pleased to submit this Sub-Slab Depressurization System (SSDS) and Soil Vapor Intrusion (SVI) Work Plan associated with the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site (BCP ID No. C826005) located at 15 Waddell Ave, Penn Yan, New York, hereinafter referred to as the "Site." This letter work plan is to seek approval on the design of the SSDS and SVI sampling plans for the buildings located on Lot #302 and Lot #303 at the Site.

PROJECT BACKGROUND

The Site is approximately 9.638-acres and currently undergoing development with residential dwellings consisting of single family and duplex style condominiums that are managed under an association. The specifications are intended to apply to buildings at Lots #302 and Lot #303 at the Site. For each new building, a layout of the SSDS for each individual building will be provided in separate work plans. Each building is constructed with a concrete slab-on-grade floor.

Due to the presence of low concentrations of volatile organic compounds (VOCs) in the subsurface at the Site, a passive vents system will be installed to mitigate potential soil vapor intrusion (SVI) concerns. The passive vent system will be designed in a manner that it can be converted to an active system pending SVI testing results.
.
Following installation of the passive system, a soil vapor intrusion (SVI) samples will be collected to confirm successful mitigation.

PASSIVE SSDS DESIGN

Design drawings and specifications for the SSDS are attached. If any alterations to building plans result from permit approvals, etc. that warrant substantial changes to the SSDS, an amendment will be made to this document detailing necessary changes based on any architectural/ structural changes.

One (1) system is planned to be installed for the building on Lot #302 and two (2) systems are planned for Lot #303. Two (2) systems are planned for Lot #303 as there are two (2) separate living spaces. Note that only the western living space of Lot #303 is planned to be occupied in July 2024 and the eastern living space has been constructed, minus the interior furnishing and will be occupied at a later date once the space has been sold.

Each system will consist of a series of 4-inch diameter perforated HDPE pipes connected to a solid schedule 40 PVC header pipe. The header pipes will penetrate the floor slab in the mechanical/utility room the building and be routed through the building to above the roofline. All piping will be installed within the washed stone sub-base. A minimum 10-mil vapor barrier will be installed directly beneath the floor slab.

Monitoring points consisting of ¼ inch diameter stainless steel tubing or equivalent will be routed beneath the floor slab to various locations throughout the building to monitor sub-slab pressure, if required. The monitoring points will also penetrate the floor slab in the mechanical/utility rooms where they will be accessible for pressure field extension (PFE) monitoring, if required.

Follow up SVI testing (see scope of work below) will be completed for each individual living space to assess whether the passive vent system will need to be converted to an active system.

Active SSDS Design

If required by the NYSDEC, the passive system will be converted to an active sub-slab depressurization system (SSDS). The passive system has been designed so that it can be readily converted to an active system. The modifications of the existing passive SSDS are described below.

- The SSDS is designed to create a minimum 0.004 inches of water column (IWC) pressure differential beneath the entire floor slab.
- A RADONAWAY RP-145 fan or equivalent will be installed for each system.
- The system will have monitoring via a U-Tube style manometer and an audible alarm system. The monitoring location will be approximately 5-ft above the ground surface on each of the vertical header pipe consisting of an approximate 5/16-inch hole with ¼-inch ID tubing inserted into the vertical portion of the header piping. The tubing will be connected to a U-tube style manometer to monitor the vacuum created by the fan. In addition, a visible and audible alarm to alert building occupants if the system loses vacuum will also be connected to the tubing. The manometer will be mounted on the vertical pipe.
- Labels will be attached to the vertical risers indicating the piping is for a SSDS.
- Following SSDS installation and activation of the building's HVAC, pressure readings will be collected from the pressure monitoring points to confirm -0.004 IWC is achieved.

If an SSDS is installed, the SMP will be updated.

POST-INSTALLATION SVI SAMPLING

To complete this sampling, one (1) set of sub-slab vapor and co-located indoor air samples will be collected from the lowest level of the building and building space from the approximate center of each individual unit/living space. Approximate sample locations are depicted on attached Drawings R-302 and R-303, and specifically at the following monitoring points.

- R-302 - Monitoring Point 3
- R-303 - Monitoring Point 1B (western living space)
- R-303 - Monitoring Point 1A (eastern living space)

Note that SVI sample locations are subject to change pending final building construction. Any significant changes will be discussed with the Department prior to sample collection.

One (1) outdoor air sample will also be collected as part of each sampling event for control purposes; the location of the outdoor air sample will be dependent on wind direction on the day of sampling. Pending results, these samples will act as "endpoint" samples to confirm "the effectiveness of remedial measures" per the NYSDOH Guidance.

The SVI sampling will be completed in substantial accordance with the procedures provided in the Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York dated October 2006. The applicable procedures to be implemented as part of this investigation are summarized below:

- The preinstalled monitoring points will be used to sample sub-slab vapor at the following locations:
    - R-302 - Monitoring Point 3
    - R-303 – Monitoring Point 1B
    - R-303 - Monitoring Point 1A

  If the monitoring points are not a viable to collect the sub-slab vapor sample, the sub-slab vapor samples will be collected from beneath the floor slab by coring an approximately 5/8 inch diameter hole through the floor slab using a rotary hammer drill to a depth of no more than 2-inches below the bottom of the concrete slab. The sample point will be constructed by inserting a 5/8-inch diameter polyethylene tube and barbed fitting (Vapor Pin®) into the drilled hole. Tubing with a 1/8-inch inside diameter will be used to connect to a Summa® canister with a pre-set regulator set to 24-hours to the barbed fitting for sub-slab soil vapor collection. Prior to sampling from the test point, the volume of air in the monitoring point/stainless steel tubing will be purged to allow for collection of air from beneath the slab. The Summa Canister will then be used to draw a sample for 24-hours.

Prior to sampling each drilled sub-slab point, a tracer gas (helium) will be placed over each sampling point to ensure that ambient air is not being pulled into the Summa canister (i.e., sampling vessel) during sampling. This will be accomplished by placing a clean, stainless-steel enclosure (or equivalent) over the sub-slab sampling points. Non-emitting VOC modeling clay or equivalent (e.g., hydrated bentonite) will be placed on the ground surface around the edge of the enclosure where it contacts the ground to make an air-tight seal. Prior to the purging and sampling activities, a helium tracer gas will be released via a small diameter tube, placed through a port on the exterior side of the enclosure. The vapor pin connected to tubing that extends out of the sealed enclosure will be connected to a helium detector to determine the presence of helium gas and purge the sample point. If helium is detected at a concentration of 10% or greater, the sample point will be resealed and retested prior to purging and sampling. If a preinstalled monitoring point is utilized for sample collection, no helium test will be completed.

- The SVI samples will be collected over the same general time period and in the same manner at all locations to minimize possible discrepancies. Samples will be collected using Summa Canisters® equipped with pre-calibrated laboratory supplied flow regulators. The regulators will be calibrated by the laboratory for a sampling time of twenty-four (24) hours. The Summa Canisters® will be certified clean by the laboratory. Indoor air and outdoor air samples will be collected approximately 3-5 feet above the ground surface.
- An outdoor air sample will be collected at an upwind location.

Subsequent to completing the SVI sampling, the samples will be sent under standard COC procedures to the laboratory for testing. The samples will be analyzed for VOCs by a New York State Environmental Laboratory Accreditation Program (ELAP) certified laboratory using USEPA Method TO-15 with a minimum detection limit of 1 µg/m^3 with 0.25 µg/m^3 for TCE and vinyl chloride. An "ASP-Category B-like" deliverables package will be generated by the laboratory and a DUSR will be completed.

The completed air sampling results will be provided in report. The report will include field documentation and observations, and summary tables for the analytical data obtained from the sampling work. Supporting documentation will include sampling logs, laboratory reports and chains of custody, the DUSR, and figure showing sampling locations. In addition, an electronic data deliverable will be provided subsequent to the validation of the data.

I Daniel P. Noll certify that I am currently a New York State Licensed Professional Engineer as defined in 6 NYCRR Part 375 and that this Post SSDS Start-up Indoor Air Sampling Results 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) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

If you have any questions or require additional information, please do not hesitate to call me at (585) 295-6611.

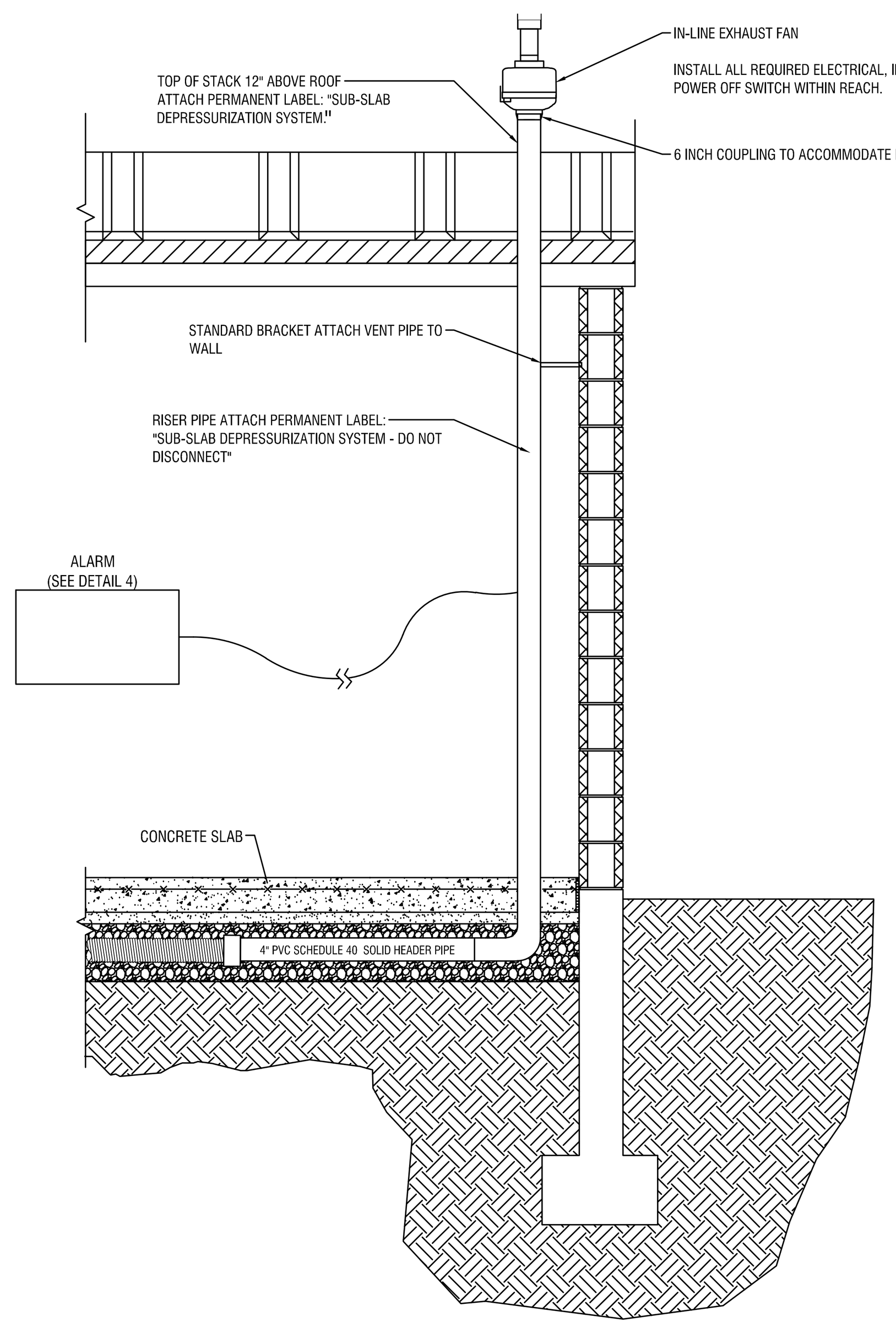
Respectfully submitted,

LABELLA ASSOCIATES, D.P.C.

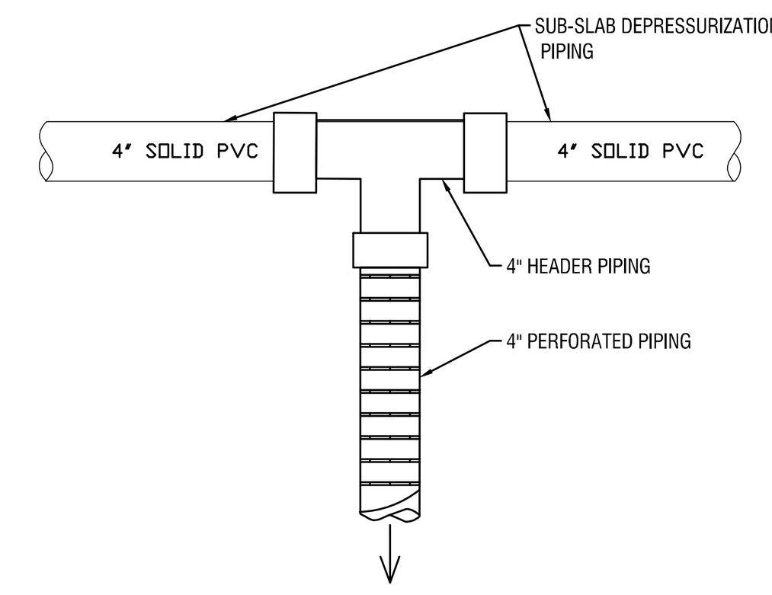
Daniel P. Noll, PE
Vice President

Attachments:
R-200 SSDS Details
R-302, R-303 Sub-Slab Depressurization System Layout
R-200 Sub-Slab Depressurization System Details
Specification Section 071100- Sub-Slab Depressurization System

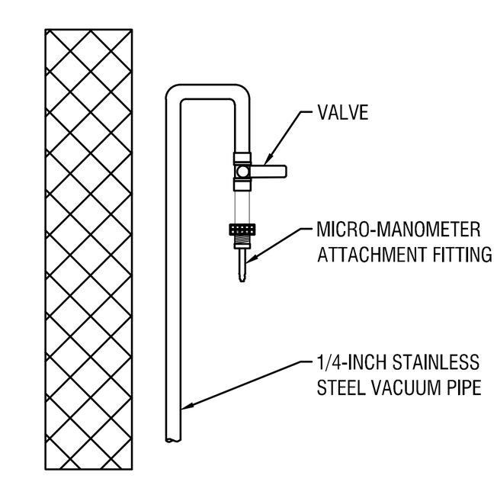
ATTACHMENTS



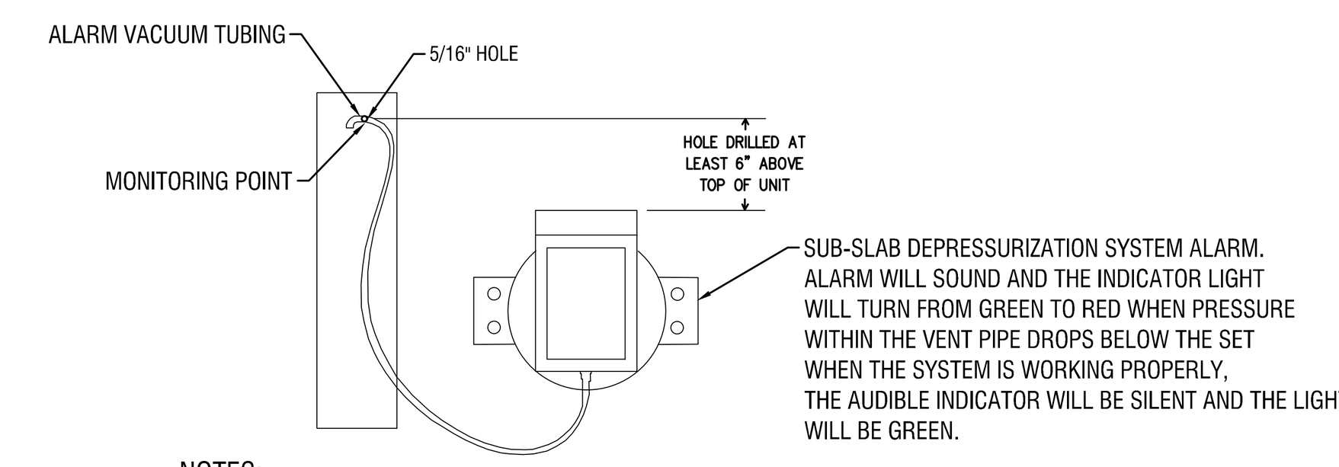
1 REAR END WALL
SCALE: NONE



2 DETAIL AT HEADER
SCALE: NONE

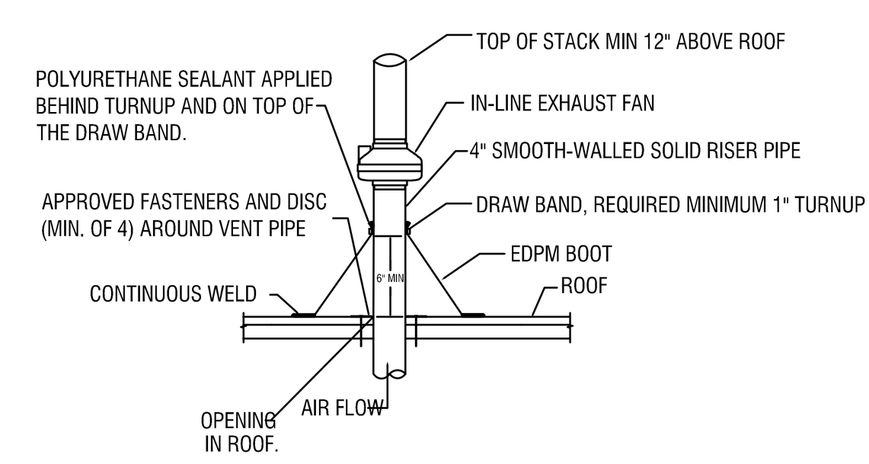


3 PROFILE AT GAUGE POINT
SCALE: NONE

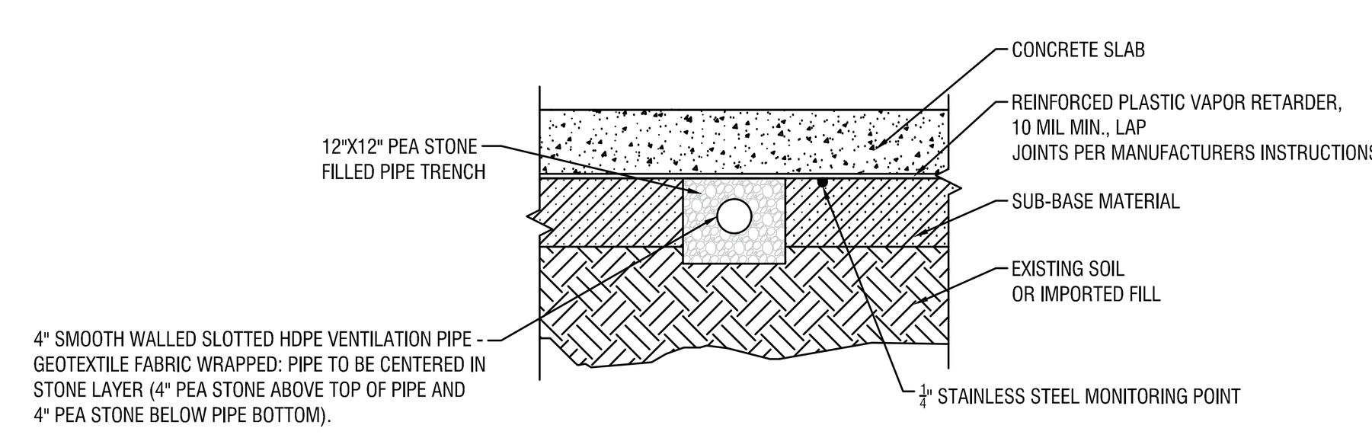


NOTES:
1. CONTRACTOR TO INSTALL ALARM ON SEPARATE CIRCUIT.
2. ALARMS TO BE ROUTED TO OFFICE/MAINTENANCE OFFICE.
3. MOUNT ALARM 4-6-FT ABOVE FINISHED FLOOR

4 SUB-SLAB DEPRESSURIZATION SYSTEM ALARM
SCALE: NONE

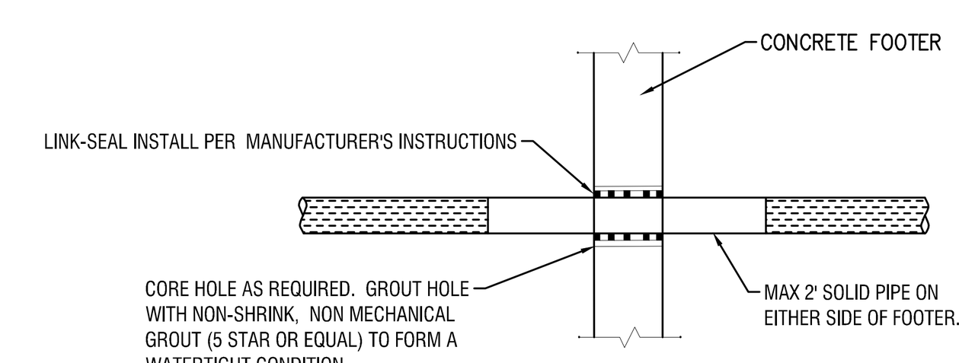


5 DETAIL AT ROOF
SCALE: NONE



NOTES:
1. NOT INTENDED TO PROVIDE STRUCTURAL DETAILS. REFER TO STRUCTURAL DRAWINGS.

6 MATERIAL PROFILE
SCALE: NONE



7 PROFILE AT PENETRATION
SCALE: NONE

NOTES:
1. ¼ INCH STAINLESS STEEL MONITORING POINTS MOUNTED APPROXIMATELY 2 FEET ABOVE FINISHED FLOOR AGAINST AN INTERIOR WALL. REFER TO DETAIL 3: PROFILE AT GUAGE POINT.
2. ¼ 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 AGAINST INTERIOR WALL AND VENTED UP THROUGH THE ROOF. REFER TO DETAIL 1: REAR END WALL.
4. 4 INCH SCHEDULE 40 PVC TO 4 INCH HDPE PERFORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER.
5. 4 INCH HDPE PIPE WRAPPED IN FABRIC AND PLACED IN PEA STONE TRENCH. REFER TO DETAIL 6: MATERIAL PROFILE.
6. MOVE PIPING AS NEEDED IN FIELD TO AVOID PLUMBING.
7. INSTALL 4 INCH CAP AT EACH VAPOR COLLECTION PIPE TERMINATION.
8. ALL SUB-SLAB VAPOR COLLECTION PIPING TO BE GEOTEXTILE-WRAPPED 4 INCH PERFORATED DUEL-WALLED CORRUGATED EXTERIOR SMOOTH INTERIOR HDPE.
9. HEADER PIPING TO BE 4 INCH SCHEDULE 40 PVC.
10. PEA STONE SHALL CONSIST OF WASHED MATERIAL THAT WILL PASS THROUGH A 2 INCH SIEVE AND BE RETAILED BY A ¼ INCH SIEVE.
11. 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.
12. SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
13. THIS DRAWING IS NOT INTEND TO PROVIDE STRUCTURAL INFORMATION. REFER TO STRUCTURAL DRAWINGS.
14. CONTRACTOR TO CONFIRM NO AIR INTAKE OR WINDOWS WITHIN 10 FEET OF VENT STACK.
15. INSTALL RADONAWAY RP-265 FAN ON SYSTEM ABOVE ROOFT AND INSTALL ALARM.

NO.	REVISION	BY	DATE
--			
--			
--			
--			
--			
--			

LaBella
Powered by partnership.

PROJECT/CLIENT
FORMER PENN YAN MARINE
NYSDEC SITE NO. C826005
15 WADDELL AVE
PENN YAN, NEW YORK

DRAWING TITLE
SUB-SLAB DEPRESSURIZATION SYSTEM DETAILS

ISSUED FOR
--

DATE: FEB 5, 2024

DESIGNED BY: AA
DRAWN BY: DRP
REVIEWED BY: AA

PROJECT/DRAWING NUMBER
2211256

R-200

LEGEND:

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

4-INCH SOLID SCHEDULE 40 PVC PIPE PLACED WITHIN MIDDLE OF PEA STONE TRENCH, SLOPED AWAY FROM VERTICAL RISER AT 1/4-INCH PER FOOT TO ALLOW FOR LANGUAGE

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

(E) – WINDOW SUPPLIER TO VERIFY WINDOW WILL MEET THE FOLLOWING CRITERIA: CLEAR OPENING WIDTH SHALL BE 20" OR GREATER, CLEAR OPENING HEIGHT SHALL BE 24" OR GREATER, AND NET CLEAR OPENING SHALL BE 5.7 SQ. FT OR GREATER.
THE BOTTOM EDGE OF THE CLEAR OPENING SHALL BE NOT GREATER THAN 44" MEASURED FROM THE FLOOR

(F) – DENOTES 50 CFM EXHAUST FAN DUCTED TO EXTERIOR PER SECTION M1506-M1507 CHAPTER 15 OF THE CODE

- UNLESS OTHERWISE NOTED ON PLAN, FIRST FLOOR PLATE HEIGHT SHALL BE 9'-1 1/8" ABOVE TOP OF FDN.
- UNLESS OTHERWISE NOTED ON PLAN, ALL FIRST FLOOR INTERIOR DOOR ROUGH OPENING HEIGHTS SHALL BE 8'-2 1/2" ABOVE TOP OF FDN.
- CONTRACTOR SHALL INSTALL SMOKE, HEAT AND CARBON MONOXIDE DETECTORS TO COMPLY WITH CURRENT NYS CODES
- INSTALL HANDRAIL & GUARDS AT STAIR PER SECTIONS R311.7.8-R311.12.2 AND R-312 OF THE CODE
- LVL AND TJI PRODUCTS, ACCESSORIES, AND CONNECTION DETAILS SHALL CONFORM TO MFR SPECIFICATIONS, AND PRODUCT LITERATURE. (DESIGN "E" = 2,000,000)
- 8 1/4" MAX STEP AT EGRESS DOOR(S) ON THE EXTERIOR SIDE FROM THE THRESHOLD TO THE LANDING OR FLOOR PROVIDED THE DOOR DOES NOT SWING OVER THE LANDING OR FLOOR. PER EXCEPTION SECTION R311.3.1 OF THE CODE & 7 3/4" MAX STEP FROM THRESHOLD TO THE LANDING OR FLOOR ON ALL OTHER EXTERIOR DOORS PER SECTION R311.3.2 OF THE CODE
- PER R312 WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.2.1 AND R312.2.2. WINDOW MANUFACTURER/SUPPLIER & CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMITY

- CONTRACTOR SHALL INSTALL SMOKE, HEAT & CARBON MONOXIDE ALARM / DETECTOR TO COMPLY WITH SECTIONS R314 & R315 OF THE CODE AND 915 OF THE FIRE CODE.

(S) : SMOKE DETECTOR

(CO) : CARBON MONOXIDE DETECTOR

(H) : HEAT DETECTOR

R314.2 HEAT DETECTOR SHALL BE LOCATED CENTRALLY IN THE ATTACHED GARAGE.

R314.3 SMOKE DETECTOR LOCATION:
SMOKE DETECTORS REQUIRED IN EVERY BEDROOM AND OUTSIDE EACH SEPARATE SLEEPING AREA AND AT LEAST ONE ON EACH STORY INCLUDING THE BASEMENT.

R314.4 INTERCONNECTION - EXCEPTION:
INTERCONNECTION OF SMOKE ALARMS IN EXISTING AREAS SHALL NOT BE REQUIRED WHERE ALTERATIONS OR REPAIRS DO NOT RESULT IN REMOVAL OF INTERIOR WALL OR CEILING FINISHES EXPOSING THE STRUCTURE, UNLESS THERE IS AN ATTIC, CRAWL SPACE OR BASEMENT AVAILABLE THAT COULD PROVIDE ACCESS FOR INTERCONNECTION WITHOUT THE REMOVAL OF INTERIOR FINISHES

R315.3 CARBON MONOXIDE ALARM LOCATIONS:
OUTSIDE EA. SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS, WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR IT'S ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM

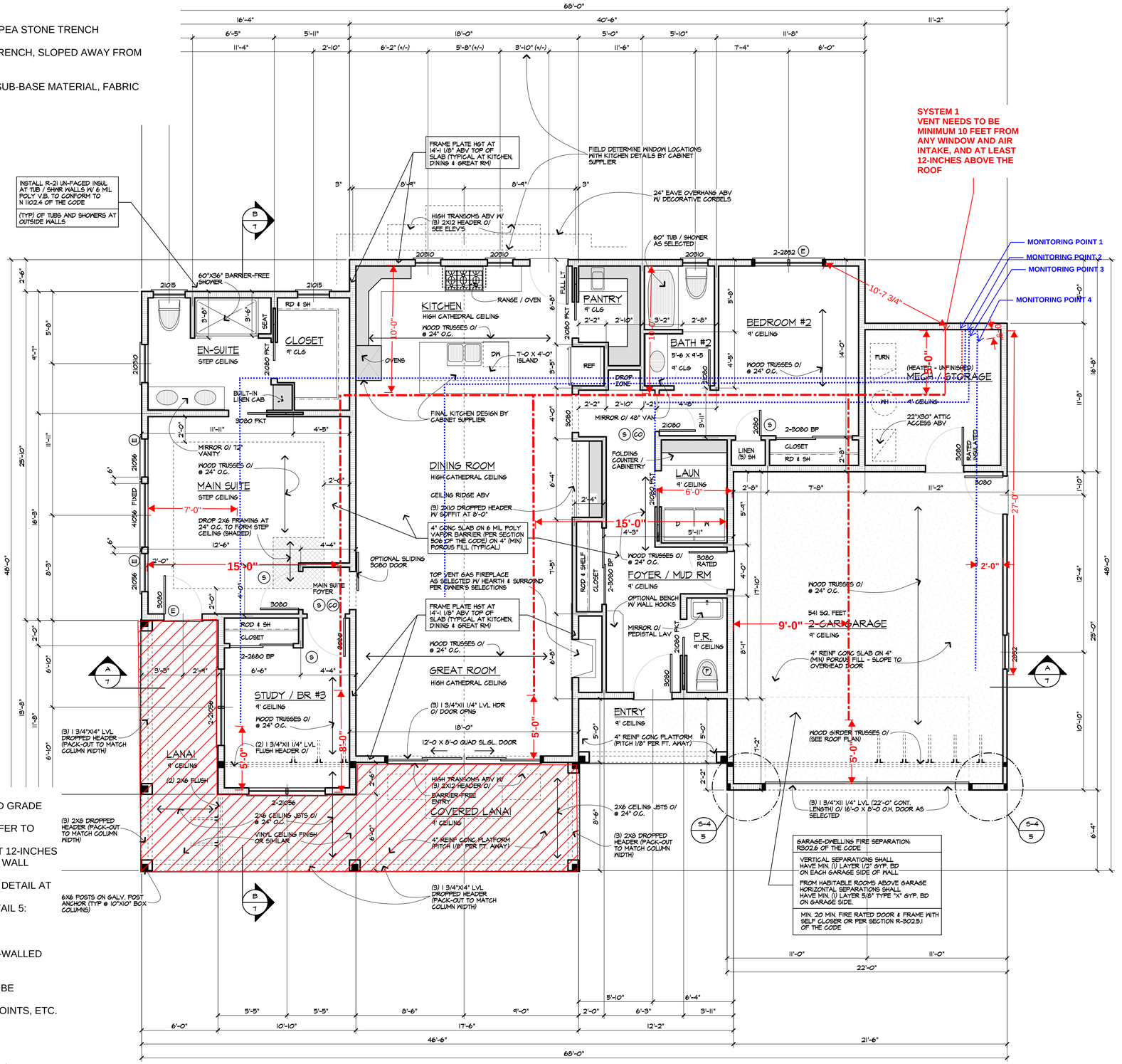
R315.4 & 315.6.4 COMBINATION ALARMS:
COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE OR CARBON MONOXIDE ALARMS.

HEADER SCHEDULE
UNLESS OTHERWISE NOTED

OPENING	2X6 WALL	2X4 WALL
UP TO 5'-0	(3) 2X8	(2) 2X8
6'-0	(3) 2X8	(2) 2X8
7'-0	(3) 2X10	(2) 2X10
8'-0	(3) 2X12	(2) 2X12

NOTE:
PROVIDE (2) 1/2" PLYWD SUSSETS - 2X6 WALL
PROVIDE (1) 1/2" PLYWD SUSSET-2X4 WALL

WALL LEGEND
-2X4 STUDS AT 16" O.C.
-2X6 STUDS AT 16" O.C.
■ — PROVIDE (3) STUDS SOLID WHERE SHOWN W/ SOLID BLKG TO BELOW
— FRAMING IN DIRECT CONTACT WITH MASONRY SHALL BE PRESSURE TREATED (TYP)



OMIT SILL PLATE AT DOOR OPENINGS AND PROVIDE AN ANCHOR BOLT EA. SIDE OF OPENING WITHIN 12" OF EA. SIDE OF OPENING

NORTH

FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

FINISHED FLOOR AREA = 1867 SQ. FEET
HEATED MECH RM = 130 SQ. FEET

NOTES:
1) 1/4-INCH STAINLESS STEEL MONITORING POINTS MOUNTED APPROXIMATELY 2-FEET ABOVE FINISHED GRADE AGAINST 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 DEAIL 5: MATERIAL PROFILE.
3) 4-INCH SCHEDULE 40 PVC RISER TO BE LOCATED AGAINST INTERIOR WALL AND VENTED UP AT LEAST 12-INCHES ABOVE THE ROOF AND A MINIMUM OF 10-FEET FROM ANY WINDOW OR AIR INTAKE. REFER TO DETAIL 1: WALL SECTION.
4) 4-INCH SCEHDULE 40 PVC TO 4-INCH HDPE PERFORORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER.
5) 4-INCH HDPE PIPE WRAPPED IN FABRIC AND PLACED IN PEA STONE TRENCH. REFER. REFER TO DETAIL 5: MATERIAL PROFILE.
6) MOVE PIPNG AS NEEDED IN FIELD TO AVOID PLUMBING.
7) INSTALL 4-INCH CAP AT EACH VAPOR COLELCTION PIPE TERMINATION.
8) ALL SUB-SLAB VAPOR COLLECTION PIPING TO BE GEOTEXTILE-WRAPPED 4-INCH PERFORATED DUAL-WALLED CORRUGATED INTERIOR SMOOTH HDPE.
9) HEADER PIPING TO BE 4-INCH SCHEDULE PVC.
10) PEA STONE SHALL CONSIST OF WASHED MATERIAL THAT WILL PASS THROUGH A 2-INCH SIEVE AND BE RETAINED BY AT 1/4-INCH SIEVE.
11) TO PROTECT 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.
12) SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
13) THE DRAWING IS NOT INTEDNED TO PROVIDE STRUCTURAL INFORMATION.
14) CONTRACTOR TO CONIFRM NO AIR INTAKE IS WITHIN 10-FEET FROM VENT STACK.
15) HEADER PIPE SLOPED UP 1/4-INCH PER FOOT FROM CONNECTION WITH VAPOR COLELCTION PIPING (I.E. DRAINED BACK TO PERFORATED PIPE).
16) INSTALL ELECTRICAL CONNECTIONS NEAR ROOF VENT STACK, IN THE EVENT THAT SYSTEM NEEDS TO BE ACTIVATED.
17) ONLY IF SYSTEM IS TO BE ACTIVATED, INSTALL RADONAWAY RP-145, OR EQUIVALENT FAN ON SYTEM ABOVE ROOF. REFER TO DETAIL 7.
18) ONLY IF SYSTEM IS TO BE ACTIVATED, INSTALL ALARM ON SUCTION SIDE OF RISER PIPE, REFER TO DETAIL 6.

DRAWING R-302

CARINI ENGINEERING DESIGNS, P.C.
STEVEN L. CARINI, P.E.
1387 FAIRPORT ROAD
SUITE #560
FAIRPORT, NY 14450-2002
PH. (585) 223-6420
www.carinidesigns.com

Also doing business as
DWELL @theFingerLakes
LIVE WELL. DO WELL.
61 NORTH MAIN STREET
CANANDAIGUA, NY 14424
PH. 585-223-5687

- REVIEW COPY -
NOT FOR CONSTRUCTION OR ORDERING

Revisions:

Project:
SINGLE FAMILY RESIDENCE
FOE SUSAN BADIA

Client:
CHRISANNTHA, INC.

Job Location:
LOT# 302
THE MOORINGS ON KEUKA
PENN YAN, NY

Drawing Title:
FIRST FLOOR PLAN

Drawn	Checked By
TJM	

Date: NOVEMBER 2022

Job No.: 38692

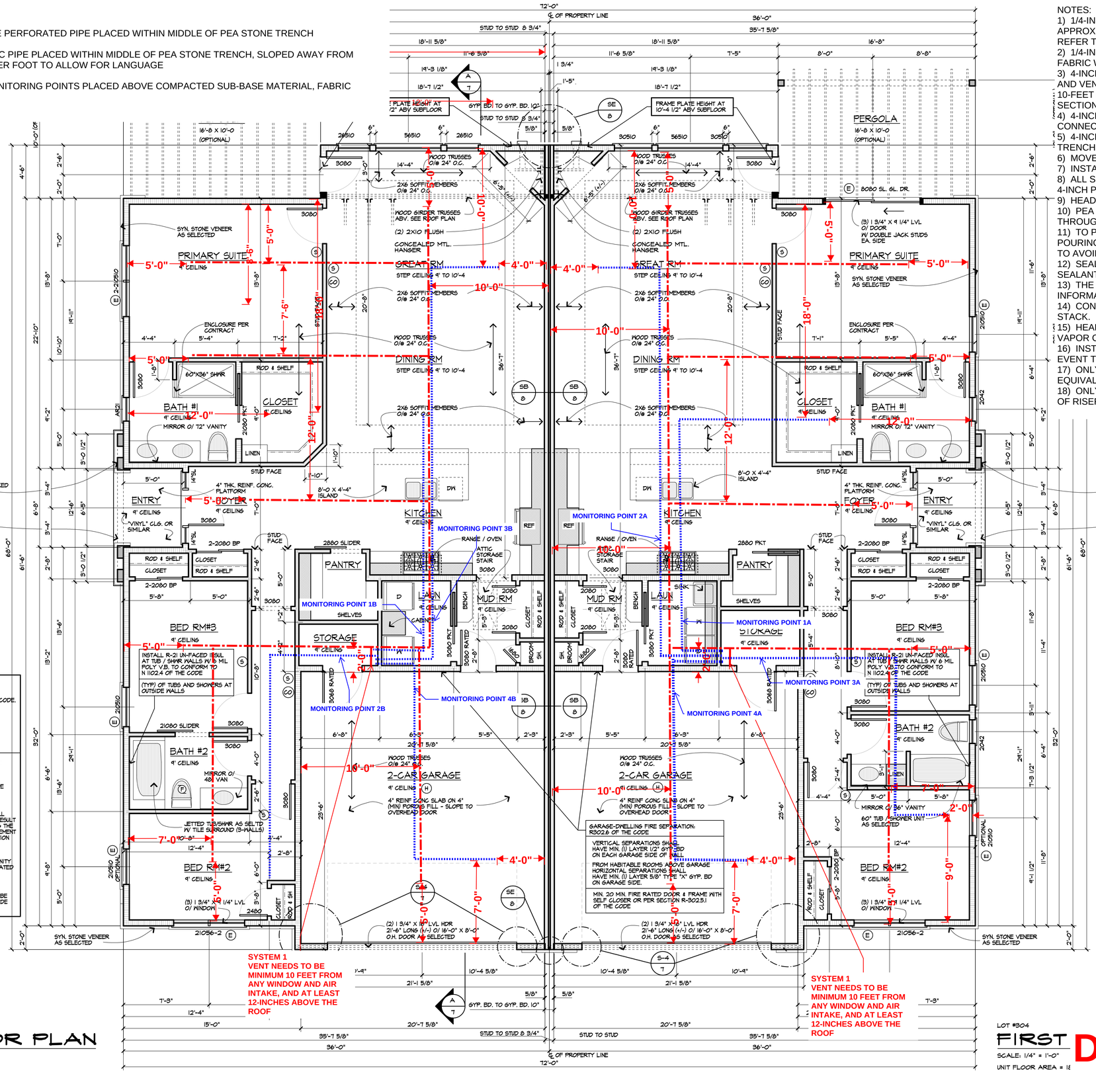
LEGEND:

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

4-INCH SOLID SCHEDULE 40 PVC PIPE PLACED WITHIN MIDDLE OF PEA STONE TRENCH, SLOPED AWAY FROM VERTICAL RISER AT 1/4-INCH PER FOOT TO ALLOW FOR LANGUAGE

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

NOTES:
1) 1/4-INCH STAINLESS STEEL MONITORING POINTS MOUNTED APPROXIMATELY 2-FEET ABOVE FINISHED GRADE AGAINST 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 DEAIL 5: MATERIAL PROFILE.
3) 4-INCH SCHEDULE 40 PVC RISER TO BE LOCATED AGAINST INTERIOR WALL AND VENTED UP AT LEAST 12-INCHES ABOVE THE ROOF AND A MINIMUM OF 10-FEET FROM ANY WINDOW OR AIR INTAKE. REFER TO DETAIL 1: WALL SECTION.
4) 4-INCH SCEHDULE 40 PVC TO 4-INCH HDPE PERFORORATED PIPE CONNECTION. REFER TO DETAIL 2: DETAIL AT HEADER.
5) 4-INCH HDPE PIPE WRAPPED IN FABRIC AND PLACED IN PEA STONE TRENCH. REFER. REFER TO DETAIL 5: MATERIAL PROFILE.
6) MOVE PIPNG AS NEEDED IN FIELD TO AVOID PLUMBING.
7) INSTALL 4-INCH CAP AT EACH VAPOR COLELCTION PIPE TERMINATION.
8) ALL SUB-SLAB VAPOR COLLECTION PIPING TO BE GEOTEXTILE-WRAPPED 4-INCH PERFORATED DUAL-WALLED CORRUGATED INTERIOR SMOOTH HDPE.
9) HEADER PIPING TO BE 4-INCH SCHEDULE PVC.
10) PEA STONE SHALL CONSIST OF WASHED MATERIAL THAT WILL PASS THROUGH A 2-INCH SIEVE AND BE RETAINED BY AT 1/4-INCH SIEVE.
11) TO PROTECT 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.
12) SEAL ALL PENETRATIONS AND GAPS WITH AN ELASTOMERIC JOINT SEALANT.
13) THE DRAWING IS NOT INTEDNED TO PROVIDE STRUCTURAL INFORMATION.
14) CONTRACTOR TO CONIFRM NO AIR INTAKE IS WITHIN 10-FEET FROM VENT STACK.
15) HEADER PIPE SLOPED UP 1/4-INCH PER FOOT FROM CONNECTION WITH VAPOR COLELCTION PIPING (I.E. DRAINED BACK TO PERFORATED PIPE).
16) INSTALL ELECTRICAL CONNECTIONS NEAR ROOF VENT STACK, IN THE EVENT THAT SYSTEM NEEDS TO BE ACTIVATED.
17) ONLY IF SYSTEM IS TO BE ACTIVATED, INSTALL RADONAWAY RP-145, OR EQUIVALENT FAN ON SYTEM ABOVE ROOF. REFER TO DETAIL 7.
18) ONLY IF SYSTEM IS TO BE ACTIVATED, INSTALL ALARM ON SUCTION SIDE OF RISER PIPE, REFER TO DETAIL 6.



(F) – DENOTES 50 CFM EXHAUST FAN DUCTED TO EXTERIOR PER SECTION M1506-M1507 CHAPTER 15 OF THE CODE

- CONTRACTOR SHALL INSTALL SMOKE, HEAT & CARBON MONOXIDE ALARM / DETECTOR TO COMPLY WITH SECTIONS R314 & R315 OF THE CODE AND 415 OF THE FIRE CODE.
- (S) : SMOKE DETECTOR
- (CO) : CARBON MONOXIDE DETECTOR
- (H) : HEAT DETECTOR

R314.2 HEAT DETECTOR SHALL BE LOCATED CENTRALLY IN THE ATTACHED GARAGE.

R314.3 SMOKE DETECTOR LOCATION:
SMOKE DETECTORS REQUIRED IN EVERY BEDROOM AND OUTSIDE EACH SEPARATE SLEEPING AREA AND AT LEAST ONE ON EACH STORY INCLUDING THE BASEMENT.

R314.4 INTERCONNECTION - EXCEPTION:
INTERCONNECTION OF SMOKE ALARMS IN EXISTING AREAS SHALL NOT BE REQUIRED WHERE ALTERATIONS OR REPAIRS DO NOT RESULT IN REMOVAL OF INTERIOR WALL OR CEILING FINISHES EXPOSING THE STRUCTURE, UNLESS THERE IS AN ATTIC, CRAWL SPACE OR BASEMENT AVAILABLE THAT COULD PROVIDE ACCESS FOR INTERCONNECTION WITHOUT THE REMOVAL OF INTERIOR FINISHES

R315.3 CARBON MONOXIDE ALARM LOCATIONS:
OUTSIDE EA. SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR IT'S ATTACHED BATHROOM, A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM

R315.4 & 315.6.4 COMBINATION ALARMS:
COMBINATION CARBON MONOXIDE AND SMOKE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE OR CARBON MONOXIDE ALARMS.

(E) – OR GREATER, CLEAR OPENING HEIGHT SHALL BE 24" OR GREATER, AND NET CLEAR OPENING SHALL BE 5.1 SQ. FT OR GREATER.
THE BOTTOM EDGE OF THE CLEAR OPENING SHALL BE NOT GREATER THAN 44" MEASURED FROM THE FLOOR

- UNLESS OTHERWISE NOTED ON PLAN, FIRST FLOOR PLATE HEIGHT SHALL BE 9'-1 1/8" ABOVE TOP OF FDN.
- UNLESS OTHERWISE NOTED ON PLAN, ALL FIRST FLOOR INTERIOR DOOR ROUGH OPENING HEIGHTS SHALL BE 8'-2 1/2" ABOVE TOP OF FDN.
- CONTRACTOR SHALL INSTALL SMOKE, HEAT AND CARBON MONOXIDE DETECTORS TO COMPLY WITH CURRENT NYS CODES
- INSTALL HANDRAIL & GUARDS AT STAIR PER SECTIONS R311.7.8-R311.12.2 AND R-312 OF THE CODE
- LVL AND T.J. PRODUCTS, ACCESSORIES, AND CONNECTION DETAILS SHALL CONFORM TO MFR SPECIFICATIONS, AND PRODUCT LITERATURE. (DESIGN "E" = 2,000,000)
- 8 1/4" MAX STEP AT EGRESS DOOR(S) ON THE EXTERIOR SIDE FROM THE THRESHOLD TO THE LANDING OR FLOOR PROVIDED THE DOOR DOES NOT SWING OVER THE LANDING OR FLOOR PER EXCEPTION SECTION R311.3.1 OF THE CODE & 7 3/4" MAX STEP FROM THRESHOLD TO THE LANDING OR FLOOR ON ALL OTHER EXTERIOR DOORS PER SECTION R311.3.2 OF THE CODE
- PER R312 WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.2.1 AND R312.2.2. WINDOW MANUFACTURER/SUPPLIER & CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMITY

HEADER SCHEDULE
UNLESS OTHERWISE NOTED

OPENINGS	2X6 WALL	2X4 WALL
UP TO 5'-0	(3) 2X8	(2) 2X8
6'-0	(3) 2X8	(2) 2X8
7'-0	(3) 2X10	(2) 2X10
8'-0	(3) 2X12	(2) 2X12

NOTE:
PROVIDE (2) 1/2" PLYWD GUSSETS - 2X6 WALL
PROVIDE (1) 1/2" PLYWD GUSSET-2X4 WALL

WALL LEGEND
-2X4 STUDS AT 16" O.C.
-2X6 STUDS AT 16" O.C.
■ — PROVIDE (8) STUDS SOLID WHERE SHOWN W/ SOLID BLK'G TO BELOW
— FRAMING IN DIRECT CONTACT WITH MASONRY SHALL BE PRESSURE TREATED (TYP)

(F) – DENOTES 50 CFM EXHAUST FAN DUCTED TO EXTERIOR PER SECTION M1506-M1507 CHAPTER 15 OF THE CODE

"C-2" UNIT

STEVEN L. CARINI — LICENSED PROFESSIONAL ENGINEER — STATE OF NEW YORK

Revisions:

Project:
ONE STORY 2-UNIT

Client:
CHRISANNTHA, INC.

Job Location:
LOT 303, AND 304
THE MOORINGS ON KEUKA
PENN YAN, NY

Drawing Title:
FLOOR PLAN

Drawn	Checked By
SMK	SLC

Date
JULY, 2023

Job No.
38761

LOT #303
FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"
UNIT FLOOR AREA = 1816 SQ. FEET

LOT #304
FIRST
SCALE: 1/4" = 1'-0"
UNIT FLOOR AREA = 18

DRAWING R-303

SECTION 071100 – SUB-SLAB VAPOR MITIGATION SYSTEM

PART 1 - TRENCHING

1.1 GAS PERMEABLE LAYER

A layer of washed pea stone shall be placed within plumbing trenches to facilitate installation of Sub-Slab Depressurization System (SSDS) piping. Pea stone shall consist of washed material that will pass through a 2 inch sieve and be retained by a ¼ inch sieve.

1.2 PREVENTION OF SOIL VAPOR ENTRY

A. All concrete 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, sumps, 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 SSDS piping shall be installed within the pea stone trench as depicted on R-302 and R-303. SSDS piping shall be geotextile-wrapped, 4-inch diameter, perforated, dual-walled, corrugated exterior, smooth interior high density polyethylene (HDPE).

B. SSDS piping shall be installed above or to the side of the plumbing, within pipe trenches as depicted on R-302 and R-303. Cross SSDS piping above plumbing if needed. SSDS piping shall be placed a minimum 3 inches below concrete and covered with a minimum of 3 inches of pea stone. A minimum of 3 inches of pea stone shall be placed between pipes.

C. The collection piping shall be connected via the appropriate fittings to 4-inch, schedule 40, poly-vinyl chloride (PVC) header pipes. The header pipes shall penetrate the building envelope, through the floor slab.

D. Install perforated cap at each vapor collection pipe termination, and slope all solid PVC pipe up at least ¼-inch per foot from connection with vapor collection piping.

E. The header pipe shall be routed by the contractor through the roof and terminate at least 12 inches above the surface of the roof, in a location that is: at least 10 feet from any air intakes, any window, 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. All roof penetrations must be properly sealed and completed in accordance with other related specifications.

F. All exposed and visible interior and exterior vent pipes shall be identified with labels placed at least every 20 feet and at least one on each floor level or in each room that exhaust piping traverses. The labels shall read: "Sub-Slab Depressurization System."

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 – prior to covering any piping with stone

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

   In addition, the contractor shall provide photo documentation for all piping prior to covering.

PART 3 – FAN (***IF SYSTEM TO BE MADE ACTIVE***)

3.1 GENERAL

A. “Activation” of the SSDS shall be completed by adding an exhaust fan in the vertical stand pipe above the roof, as shown on R-302 and R-303.

B. The fan shall meet the following requirements (in-line exhaust fan, such as the “RadonAway RP-265” or equivalent):

Fan Specifications

Watts	Max Pres. "wc	Typical flow [ft^3/min (cfm)] vs. static pressure [water column inches ("wc)]				
95-139	2.3	0.0" wc	0.5" wc	1.0" wc	1.5" wc	2.0" wc
		375 cfm	282 cfm	204 cfm	140 cfm	70 cfm

C. The fan in the vent pipe and all positively-pressurized portions of the vent pipe shall be located outside the habitable space of the building.

D. The fans shall be installed in a vertical run of the vent pipe, at an approximate height of at least 1-ft. above the roofline to facilitate maintenance and repair.

3.2 WARNING SYSTEMS (***IF SYSTEM TO BE MADE ACTIVE***)

A. Each vertical standpipe shall be equipped with a U-tube type manometer or approved equivalent below the fan and within an accessible space, to demonstrate that pressure within the pipe is below atmospheric pressure.

B. The 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 occupants 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 Contractor will clearly label the breakers "SSDS Fan" and "SSDS Alarm". Label alarm with contact information to be provided by the owner.

PART 4 – TEST POINTS

A. Test Points, consisting of a length of stainless steel vacuum tubing, shall be installed above the crushed stone layer after compaction as depicted on R-302 and R-303. The open end of the stainless steel vacuum tubing shall be fabric-wrapped at its sub-slab termination. The vacuum tubing shall be routed as shown on -302 and R-303 and terminate in a barbed ¼-inch hose fitting above the floor slab in the locations shown. The terminations shall be mounted at an approximate height of three (3) feet above the local grade and fitted with a stop valve beneath the barbed fitting as depicted in R-302 and R-303.

B. If located in a high-traffic area, each gauge/test point will be protected by the Contractor.

PART 5 – MISCELLANEOUS (***IF SYSTEM TO BE MADE ACTIVE***)

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 will 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 2006. The Contractor will provide a letter or report documenting the backdraft test to the Environmental Project Monitor.

END OF SECTION 071100