ANN ARBOR HISTORIC DISTRICT COMMISSION

Staff Report

ADDRESS: 415 W William Street, Application Number HDC24-0170

DISTRICT: Old West Side Historic District

REPORT DATE: January 9, 2025

REPORT PREPARED BY: Mariana Melin-Corcoran, City Planner

REVIEW COMMITTEE DATE: January 6, 2025

	OWNER	APPLICANT
Name:	Sarah Okuyama	Abigail Niemi Protech Environmental
Address:	415 W William St Ann Arbor, MI 48103	287 Jackson Plaza Ann Arbor, MI 48103
Phone:	(734) 353-2121	(734) 761-3595

BACKGROUND: This home first appears in the 1917 City Directory as the home of Frank E. Case and music teacher John G. Kurtz. Kurtz lived in the house until 1945 or 1946. It is two-stories with a steeply pitched pyramidal roof and three dormers facing the front and sides. It features a full-width concrete front porch with half-columns, and a single-car, shed-roofed garage.

LOCATION: The site is located on the south side of West William, between Second and Third Streets.

APPLICATION: The applicant seeks HDC approval to install a radon mitigation system on the east side of the building, next to the front porch and near the street.

APPLICABLE REGULATIONS:

From the Secretary of the Interior's Standards for Rehabilitation:

(2) The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.

(9) New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

(10) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

From the Secretary of the Interior's Guidelines for Rehabilitating Historic Buildings (other SOI Guidelines may also apply):

Mechanical Systems
Recommended: Installing a completely new mechanical system if required for the new use so that it causes the least alteration possible to the building's floor plan, the exterior elevations, and the least damage to the historic building material.

Building Site
Not Recommended: Introducing new construction onto the building site which is visually incompatible in terms of size, scale, design, materials, color and texture or which destroys historic relationships on the site.

From the Ann Arbor Historic District Design Guidelines:

Mechanical Equipment
Appropriate: installing mechanical equipment and wiring in locations on the roof, rear elevations, or in alleys, so they are not visible from a street.

Installing vertical runs of ducts, pipes, and cables in the interior of the building in closets, service rooms, or wall cavities so they are not visible on the exterior.

Painting mechanical equipment to blend with the historic building.

STAFF FINDINGS

1. Radon mitigation (and other mechanical) units are typically a staff approval if they are not visible from the street and do not negatively impact the historic building. Since this work does not meet those criteria it requires approval by the Historic District Commission.

2. Based on samples taken by the applicant, a long-term mitigation system is necessary at 415 W William St. However, staff does not feel that the applicant has provided adequate justification for the proposed placement of the radon mitigation system, which is highly visible from the street along the east façade, above the roof eave, and directly adjacent the historic front porch. This placement does not meet the Historic District Design Guidelines.

3. Staff recommends placing the mitigation system in a different location that is less visible and farther from the street. Mechanical systems are approvable when they are hidden from the right of way. If the HDC finds that this is the only possible location for the radon mitigation system, staff recommends that the mitigation unit be painted to blend in with the exterior.

POSSIBLE MOTIONS: (Note that the motions below are only a suggestion. The Review Committee, consisting of staff and at least two Commissioners, will meet with the applicant on site and then make a recommendation at the meeting.)

I move that the Commission issue a certificate of appropriateness for the application at 415 W William Street, a contributing structure in the Old West Side Historic District, to install a radon mitigation system near the northeast corner of the building, on the condition that the

entire radon unit is painted to match the exterior color. As conditioned, the work is compatible in exterior design, arrangement, materials, and relationship to the building and the surrounding area and meets *The City of Ann Arbor Historic District Design Guidelines* for mechanical equipment, and *The Secretary of the Interior's Standards for Rehabilitation* and *Guidelines for Rehabilitating Historic Buildings,* in particular standards 2, 9 and 10, and the guidelines for mechanical systems.

ATTACHMENTS: narrative, drawings, photos.

415 West William (2008 Staff photo)

MITIGATION SYSTEM DESIGN

415 WEST WILLIAM STREET
ANN ARBOR, MICHIGAN

SITE LOCATION MAP

INDEX OF DRAWINGS	
DRAWING NO.	DRAWING TITLE
G-1	COVER AND INDEX DRAWING
G-2	GENERAL NOTES AND SYSTEM SPECIFICATIONS
A-1	VAPOR MITIGATION SYSTEM LOCATION
A-2	DETAILS

IDENTIFICATION OF DETAILS - PLAN DRAWINGS

4 — DETAIL NUMBER
6 — DRAWING ON WHICH ABOVE DETAIL IS PRESENTED

IDENTIFICATION OF DETAILS - DETAIL DRAWINGS

DETAIL NUMBER
DRAWING ON WHICH ABOVE DETAIL WAS FIRST REFERENCED
4 / 3 — DETAIL / TITLE OF DETAIL
SCALE: 1" = 2'

EXAMPLE: DETAIL NUMBER 4 PRESENTED ON DRAWING NUMBER 6 WAS REFERENCED FOR THE FIRST TIME ON DRAWING NUMBER 3.

ABOVE SYSTEM ALSO APPLIES TO SECTION IDENTIFICATIONS.

DETAIL IDENTIFICATION LEGEND

STATE OF MICHIGAN
BRYAN VANDUNK
ENGINEER
No. 6201062741
LICENSED PROFESSIONAL ENGINEER

PREPARED FOR:

GTE OPERATIONS SUPPORT INCORPORATED
ONE VERIZON WAY, VC33E047C
BASKING RIDGE, NEW JERSEY 07920

0 1" 2"
ORIGINAL SCALE
SCALE IS BASED ON 22" X 34" NON-REDUCED SHEET SIZE (BORDER = 21" X 32")

REVISIONS

NO.	DESCRIPTION	DATE	BY

415 WEST WILLIAM STREET

ENGINEER:
Geosyntec consultants
Geosyntec Consultants of Michigan
2100 COMMONWEALTH BLVD
SUITE 100
ANN ARBOR MI 48105

COVER AND INDEX DRAWING

MITIGATION SYSTEM DESIGN
415 WEST WILLIAM STREET
ANN ARBOR, MICHIGAN

DES BY: BV	DATE: JULY 2024	
DRN BY: MJ	SCALE:	
CHK BY: PN	PROJECT: JR0248A	
REV BY: -	DOCUMENT:	
APP BY: -		
FILE: JR0248A-001.DWG		

DRAWING NO.
G-1

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DESCRIPTION OF WORK

THE INTENT OF THE WORK IS TO REMOVE VOLATILE ORGANIC COMPOUND (VOC) VAPORS THAT MAY ACCUMULATE BELOW THE BASEMENT FLOOR SLAB AND VENT THOSE VAPORS TO THE ATMOSPHERE ABOVE THE BUILDING ROOFLINE IN ACCORDANCE WITH APPLICABLE CODES. THE VAPOR MITIGATION SYSTEM CONSISTS OF TWO (2) EXTRACTION SUMPS (EP-1 AND EP-2). EP-1 WILL BE NEAR THE CENTER OF THE EAST WALL OF THE MAIN BASEMENT AREA AND EP-2 WILL BE IN THE PANTRY/STORAGE ROOM IN THE NORTHWEST CORNER OF THE BASEMENT. THE EXTRACTION SUMPS WILL CONNECT TO VERTICAL RISERS THAT EXTEND TO THE CEILING OF THE BASEMENT THEN TURN HORIZONTALLY TOWARDS THE NORTHEAST CORNER OF THE MAIN BASEMENT AREA WHERE THEY WILL COMBINE BEFORE PENETRATING THROUGH THE EAST BUILDING WALL. THE PIPE WILL THEN CONNECT TO A WALL-MOUNTED SUB-SLAB DEPRESSURIZATION ("SSD") FAN. THE EXHAUST PIPING WILL THEN RUN VERTICALLY FROM THE FAN TO ABOVE THE ROOF EAVE WHERE THE VAPORS WILL VENT TO THE ATMOSPHERE. THE WORK INCLUDES

- CORING THE FLOOR SLAB AND EXCAVATING A SUMP AT EACH OF THE EXTRACTION SUMPS,
- CONNECTING THE EXTRACTION PIPES TO THE EXTERIOR SSD FAN,
- INSTALLING EXHAUST PIPES FROM THE SSD FAN TO THE ROOFTOP, AND
- RESTORING THE SUMP AREAS AND INTERIOR WORK AREAS.

ELECTRICAL DESIGN WILL BE COMPLETED BY THE CONTRACTOR AS REQUIRED FOR LOCAL BUILDING PERMITS.

GENERAL NOTES

ALL DIMENSIONS SHOWN ON THE PLANS ARE IN A HORIZONTAL PLANE.

CONTRACTOR MUST

- BE FAMILIAR WITH THE DESIGN PLANS AND HAVE A COPY OF THE APPROVED PLANS AND ANY REVISIONS AT THE JOB SITE AT ALL TIMES.
- BE A NATIONAL RADON PROFICIENCY PROGRAM-CERTIFIED RESIDENTIAL MITIGATION PROVIDER.
- PERFORM ALL WORK IN ACCORDANCE WITH STATE AND LOCAL BUILDING, ELECTRICAL, AND PLUMBING CODE, RULES, AND REGULATIONS INCLUDING THE 2015 MICHIGAN RESIDENTIAL CODE (INCLUDING APPENDIX F - PASSIVE RADON GAS CONTROLS) AND THE ANN ARBOR FIRE PREVENTION CODE, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 70), AND MUST FACILITATE ALL REQUIRED INSPECTIONS.
- ARRANGE A PRE-CONSTRUCTION MEETING WITH GEOSYNTEC CONSULTANTS OF MICHIGAN, INC. (ENGINEER) AND THE BUILDING OWNER TO REVIEW AND COORDINATE THE CONSTRUCTION WORK AND SCHEDULE.
- PROCURE ALL NECESSARY PERMITS REQUIRED FOR THE WORK SHOWN IN THESE DRAWINGS, INCLUDING BUILDING AND ELECTRICAL PERMITS FROM THE CITY OF ANN ARBOR, AND OBTAIN APPROVAL FROM THE HISTORIC DISTRICT COMMISSION. AN AIR PERMIT WILL NOT BE REQUIRED BECAUSE THE SYSTEM MEETS THE EXEMPTION FOR OFF-SITE VAPOR MITIGATION SYSTEMS UNDER R336.1285(2)(oo) OF THE MICHIGAN ADMINISTRATIVE CODE.
- NOTIFY GTE OPERATIONS SUPPORT INCORPORATED (CLIENT) AND ENGINEER AT LEAST ONE (1) WEEK BEFORE THE COMMENCEMENT OF WORK.
- PROTECT EXISTING FACILITIES AND IMPROVEMENTS FROM DAMAGE RESULTING FROM CONTRACTOR'S WORK. ANY DAMAGE CAUSED BY CONTRACTOR MUST BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS INCLUDING SAFETY OF ALL PERSONS AND PROPERTY.
- DEFEND, INDEMNIFY AND HOLD CLIENT AND ENGINEER HARMLESS FROM ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF ENGINEER OR CLIENT.
- NOTIFY ENGINEER AND REQUEST WRITTEN CLARIFICATION, ADDENDUM, ETC. IF CONTRACTOR OR SUBCONTRACTOR FINDS DEFICIENCIES, ERRORS, CONFLICTS, OR OMISSIONS IN THESE PLANS AND SPECIFICATIONS OR IF THERE IS ANY DOUBT AS TO THEIR MEANING OR INTENT. IF THE CONTRACTOR FAILS TO DO SO BEFORE SUBMITTING A PROPOSAL, THE CONTRACTOR CANNOT CLAIM ADDITIONAL COMPENSATION FOR WORK REQUIRED TO COMPLETE THE PROJECT.

CLIENT WILL NOT BE RESPONSIBLE FOR UNAUTHORIZED USES OF OR CHANGES TO DRAWINGS. THE DRAWING NOTES AND TYPICAL DETAILS APPLY UNLESS SPECIFICALLY STATED OR SHOWN OTHERWISE. ENGINEER MUST APPROVE ALL DEVIATIONS FROM THE DRAWINGS.

CONTRACTOR IS RESPONSIBLE FOR PROVIDING POWER AND UTILITY SERVICES AT THE CONSTRUCTION SITE NECESSARY TO CONDUCT THE WORK.

CONTRACTOR WILL BE RESPONSIBLE FOR OPERATING IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS. CONTRACTOR MUST ABIDE BY THE PRIMARY SITE-SPECIFIC HEALTH AND SAFETY PLAN (HASP) AND DEVELOP ITS OWN SITE-SPECIFIC HASP WHICH, AT A MINIMUM, MEETS THE REQUIREMENTS OF THE PRIMARY HASP.

FLOOR SLAB PENETRATIONS

1. ALL PIPES, CONTROL JOINTS, CONSTRUCTION JOINTS, AND OTHER CONDUITS THAT PENETRATE THE CONCRETE FLOOR SLAB WILL BE SEALED USING POLYURETHANE CAULK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE FIRE CODES. TO PREVENT THE MOVEMENT OF AIR ALONG THE ANNULUS BETWEEN THE PIPE, CONDUIT, BOX, OR OTHER FEATURE AND THE CONCRETE.
2. POLYURETHANE CAULK OR SEALANT COMPLIES WITH FEDERAL SPECIFICATION TT-S-00230C AND FIRE CODES AS APPLICABLE.
3. ALL SEALANT APPLICATIONS ARE MADE AT THE FINISHED CONCRETE SURFACE, RATHER THAN BELOW THE SLAB.
4. DRAIN SEALS WILL BE INSTALLED IN FLOOR DRAINS. ONE-WAY VALVES WILL BE INSTALLED AT DRAINS TO MAINTAIN DRAINAGE CAPACITY WHILE PREVENTING THE UPWARD MIGRATION OF SUBSLAB VAPORS.

PIPING

5. THE MITIGATION SYSTEM PIPING NETWORK CONSISTS OF
   1) VENT PIPES THAT PENETRATE THE CONCRETE FLOOR SLAB AND EXTEND VERTICALLY TO THE CEILING (EP-1 AND EP-2). RUN ACROSS THE UNDERSIDE OF THE CEILING TOWARDS THE NORTHEAST CORNER OF THE MAIN BASEMENT AREA, AND COMBINE AT A TEE IN THE NORTHEAST CORNER BEFORE PENETRATING THE EAST WALL TO THE EXTERIOR OF THE BUILDING,
   2) AN SSD FAN THAT CONSISTS OF A POWERED BLOWER FAN, AND
   3) EXHAUST PIPING THAT RUNS VERTICALLY UPWARD ALONG THE EXTERIOR WALL OF THE BUILDING AND TERMINATING ABOVE THE ROOF EAVE.
6. ALL VENT PIPES AND FANS WILL BE INSTALLED AT THE APPROXIMATE LOCATIONS SHOWN ON THE LAYOUT DRAWING IN THE MANNER SHOWN ON THE DETAILS SHEET, AND AS REQUIRED BY THESE NOTES.
7. HORIZONTAL PIPE RUNS AND THE NUMBER OF ELBOWS WILL BE MINIMIZED TO THE EXTENT PRACTICABLE TO MINIMIZE FRICTION TO AIR FLOW. WHERE POSSIBLE, CONTRACTOR WILL USE SWEEP ELBOWS.
8. VENT PIPE IS 3-INCH INNER DIAMETER SCHEDULE 40 PVC AND EXHAUST PIPE IS 2-INCH INNER DIAMETER SCHEDULE 40 PVC UNLESS OTHERWISE INDICATED. IF PIPING IS INSTALLED IN SUPPLY OR RETURN AIR PLENUM SPACES, IT MUST PASS ASTM E84 FLAME/SMOKE INDEX OF AT MOST 25/50.
9. HORIZONTAL PIPING WILL SLOPE TOWARD THE VERTICAL RISER AT LEAST 1% WHERE PRACTICABLE TO ENSURE THAT ANY CONDENSATION THAT FORMS IN THE PIPE WILL DRAIN TOWARD THE FLOOR PENETRATION.
10. EXTERIOR VERTICAL PIPING WILL BE PAINTED TO MATCH THE EXISTING DOWNSPOUTS WITH APPROPRIATE EXTERIOR PAINT.
11. ALL PIPING CONNECTIONS WILL BE SOLVENT CEMENTED AND PERMANENTLY SEALED USING A PRIMER MEETING ASTM F656 AND SOLVENT MEETING ASTM D2564.
12. ALL VERTICAL PIPE RUNS WILL BE SUPPORTED AT A MINIMUM OF EVERY 10 FEET AND HORIZONTAL PIPING SUPPORTED EVERY 4 FEET AND COMPLY WITH LOCAL PLUMBING CODE. ADDITIONAL SUPPORTS SHOULD BE PLACED AT CHANGES IN DIRECTION AND WITHIN 2 FEET OF A FITTING, SUCH AS A COUPLING, 90-DEGREE BEND, ETC., WHERE PRACTICABLE. ALL FLOOR AND WALL PENETRATIONS MUST MEET ALL APPLICABLE FIRE AND BUILDING CODES. ADDITIONAL GUIDANCE CAN BE FOUND IN DRAWINGS. ALL PIPING WILL BE INSTALLED IN COMPLIANCE WITH BUILDING AND FIRE CODES.
13. TO COMPLY WITH BOTH THE ANSI/AARST "SOIL GAS MITIGATION STANDARDS FOR EXISTING HOMES" (SGM-SF 2023) AND THE AIR PERMIT EXEMPTION FOR OFF-SITE VAPOR MITIGATION SYSTEMS UNDER R336.1285(2)(OO) OF THE MICHIGAN ADMINISTRATIVE CODE, THE EXHAUST POINT MUST BE AT LEAST 10 FT ABOVE GROUND SURFACE, AT LEAST 12 INCHES ABOVE THE ROOF EDGE, AT LEAST 10 FT AWAY HORIZONTALLY FROM ANY WINDOWS, DOORS, OR INTAKES (OPERABLE OPENINGS), AND AT LEAST 4 FT AWAY FROM ANY OPERABLE OPENINGS BELOW THE EXHAUST POINT. THE EXHAUST TRAJECTORY WITH AN EXHAUST SPREAD RADIUS OF 45° MUST NOT ENCOUNTER ANY OPERABLE OPENINGS WITHIN 10 FT OF THE EXHAUST POINT.
14. AN EXHAUST MUFFLER WILL BE INSTALLED ON THE EXHAUST PIPING TO REDUCE NOISE FROM FAN OPERATION.
15. A VARMINT BARRIER WILL BE PLACED OVER THE END OF THE EXHAUST PIPE TO PREVENT ANIMALS FROM ENTERING.

SSD FAN

16. THE FAN WILL BE A RADONAWAY HS5500 OR SIMILAR, SUBJECT TO ENGINEER APPROVAL.
17. THE SSD FAN WILL BE MOUNTED TO THE EXTERIOR BUILDING WALL ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. A REVIEW OF THE BUILDING AND ROOF STRUCTURE TO SUPPORT THE SSD FANS HAS NOT BEEN PERFORMED AND IS THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR.
18. ELECTRIC SERVICE WILL BE INSTALLED TO THE SSD FAN BY A LICENSED ELECTRICIAN THROUGH AN APPROPRIATE METHOD.

INSTRUMENTATION

19. THE FAN WILL BE WIRED TO AN EXTERNAL SHUT-OFF SWITCH, ACCESSIBLE TO THE OWNER, BUT NOT THE GENERAL PUBLIC.
20. THE PRESSURE TRANSMITTER WITH A VISUAL VACUUM GAUGE/ALARM (OBAR GBR25RT OR SIMILAR) WILL BE MOUNTED ON THE RISER PIPE TO PROVIDE OCCUPANTS WITH A VISUAL INDICATION THAT THE SYSTEM IS FUNCTIONING. THE AUDIBLE ALARM WILL NOTIFY THE BUILDING OCCUPANTS IN THE EVENT OF VACUUM LOSS IN THE SYSTEM. THE LOCATION OF THE ALARM WILL BE DETERMINED IN CONSULTATION WITH THE OWNER. EACH PRESSURE TRANSMITTER WILL BE LABELED AND A PLACARD WILL BE POSTED WITH CONTACT INFORMATION IN THE EVENT OF AN ALARM AND HOW TO SHUT OFF AUDIBLE ALARM.
21. CONTRACTOR WILL BE RESPONSIBLE FOR RUNNING SENSOR TUBING BETWEEN THE OBAR GBR25RT AND THE VACUUM MEASUREMENT PORT ON THE RISER PIPE.
22. THE OBAR GBR25RT WILL BE CONNECTED TO A TELEMETRY SYSTEM. CONTRACTOR WILL BE RESPONSIBLE FOR WIRING THE COMMUNICATION AND POWER FROM THE OBAR GBR25RT TO THE TELEMETRY SYSTEM.
23. A SAMPLING PORT WILL BE MOUNTED ON EACH VENT RISER PARALLEL TO THE WALL SO AS NOT TO INTERFERE WITH OCCUPANT USE. THE SAMPLE PORT WILL CONSIST OF TWO PARTS, 1) A HEX BODY MALE 3/4-INCH NPT BY FEMALE 1/2-INCH NPT REDUCER THREADED INTO THE PVC PIPE AND 2) A MALE 1/2-INCH NPT BY MALE 1/4-INCH COMPRESSION (SWAGE-LOK) WITH A CAP. THE SAMPLING PORT WILL BE INSTALLED ON EACH VENT PIPE RISER ABOUT 3 FEET ABOVE THE FLOOR SLAB, UNLESS INSTRUCTED OTHERWISE. MADE FROM BRASS OR STAINLESS-STEEL COMPONENTS.
24. BALL VALVES WILL BE INSTALLED ON EACH VENT PIPE RISER ABOUT 6 FEET OFF THE GROUND, UNLESS INSTRUCTED OTHERWISE.

TELEMETRY SYSTEM

25. A SENSAPHONE SENTINEL REMOTE MONITORING SYSTEM OR SIMILAR WITH CELLULAR MODEM WILL BE INSTALLED TO ALERT ENGINEER OF A LOSS IN POWER OR VACUUM. SENSAPHONE SENTINEL REMOTE MONITORING SYSTEM WILL BE INSTALLED AT A LOCATION TO BE DETERMINED WITH THE OWNER. CONTRACTOR WILL BE RESPONSIBLE FOR WIRING IN A 2-GANG (4 OUTLETS) POWER OUTLET AT A LOCATION TO BE DETERMINED WITH THE BUILDING OWNER FOR PLACEMENT OF THE MONITORING SYSTEM.

EQUIPMENT SCHEDULE

VAPOR VENT PIPING

2- AND 3-INCH PVC SCHEDULE 40 PIPE AND FITTINGS (ASTM D-2665) "WHITE COLOR" AS SPECIFIED IN DRAWINGS. PVC CEMENT PRIMER COMPLIES WITH ASTM F-656. PVC CEMENT ADHESIVE COMPLIES WITH ASTM D-2564. EXTERIOR VERTICAL PIPING WILL BE PAINTED TO MATCH THE EXISTING DOWNSPOUTS WITH APPROPRIATE EXTERIOR PAINT.

BALL VALVES - VALTERRA 3-INCH SLIP WITH PLASTIC PADDLES OR SIMILAR.

SAMPLE PORT - BRASS OR STAINLESS-STEEL HEX BODY MALE 3/4-INCH NPT BY FEMALE 1/2-INCH NPT REDUCER AND MALE 1/2-INCH NPT BY MALE 1/4-INCH COMPRESSION (SWAGE-LOK) WITH A CAP.

PIPING SUPPORTS

ADJUSTABLE BAND HANGER WITH HANGING PIPE SUPPORTS AND SWIVEL RING OR STANDARD BOLT TYPE CLEVIS FOR VERTICAL PIPE SUPPORT FROM CEILING.

SLOTTED CONDUIT CHANNEL, STRUT NUTS AND CONDUIT CLAMPS FOR WALL CONNECTION.

3/8-INCH THREADED ROD.

ASSORTED BOLTS, NUTS AND WASHERS.

FAN

RADONAWAY HS5500 OR EQUIVALENT. SUBJECT TO ENGINEER APPROVAL.

SIZE APPROPRIATE RUBBER COUPLINGS WITH MARINE GRADE STAINLESS STEEL HOSE CLAMPS.

FAN SUPPORT AND PROTECTION

THE FAN MUST BE SUPPORTED AND PROTECTED IN A MANNER THAT WILL PREVENT DAMAGE FROM WIND, SNOW, RAIN AND VARMINTS.

CRACKS & SEALING MATERIALS

POLYURETHANE SEALANT COMPLIES WITH FEDERAL SPECIFICATION TT-S-00230C (E.G., GEOCEL 3300 PECORA CORPORATION'S DYNATROL 1-XL, OR TREMCO'S VULKEM 116). SUBJECT TO COMPLIANCE WITH CONTRACT REQUIREMENTS. VISUAL EXPANSION JOINTS OR SLAB CRACKS IN THE AREAS BEING MITIGATED THAT HAVE A 1/16 INCH OR GREATER OPENING ARE SEALED.

PLASTIC SUMP COVERS AND DRANJER-STYLE VALVES TO ENSURE DRAINAGE OF WATER IN WHILE PREVENTING FLOW OF GASES OUT.

VISUAL VACUUM INDICATOR

OBAR GBR25RT OR SIMILAR FOR THE APPLIED VACUUM OF THE FAN OPERATION (0 TO 40 INCHES OF WATER) LOCATED AT THE RISER PIPE AT A LOCATION TO BE DETERMINED IN CONSULTATION WITH BUILDING OWNER.

SSD FAN MONITORING COMPONENTS

SENSAPHONE SENTINEL CLOUD-BASED MONITORING SYSTEM OR SIMILAR WITH CELLULAR MODEM AND 120V POWER SUPPLY INSTALLED WITHIN A WEATHERPROOF ENCLOSURE.

ONE OBAR GBR25RT PRESSURE GAUGE WITH ALARMS OR SIMILAR LOCATED AT THE RISER PIPE, FINAL LOCATION TO BE DETERMINED IN CONSULTATION WITH OWNER AND OCCUPANTS.

4-20 MA CONNECTION TO THE OBAR GBR25RT PRESSURE GAUGE TO SENSAPHONE SENTINEL.

VAPOR MITIGATION SYSTEM

INSTALLATION - ALL WORK WILL BE IN COMPLIANCE WITH FEDERAL, STATE, AND LOCAL BUILDING, FIRE, AND ELECTRICAL CODES.

PIPE SIZING AND ELBOWS - CONTRACTOR WILL USE LONG SWEEP ELBOWS WHERE POSSIBLE BASED ON FIELD CONDITIONS.

PIPING SUPPORT AND INSTALLATION - ALL VERTICAL AND HORIZONTAL PIPING RUNS WILL BE INSTALLED IN COMPLIANCE WITH LOCAL PLUMBING CODE.

PIPING CONNECTIONS - ALL PIPING CONNECTIONS WILL BE SOLVENT-CEMENTED USING A CLEAR PRIMER MEETING ASTM F656 AND NON-PURPLE SOLVENT MEETING ASTM D2564. JOINTS WILL BE MADE WHILE SOLVENT IS WET AND WILL BE IN ACCORDANCE WITH ASTM D2855 AND ASTM F402.

ELECTRICAL

1. ELECTRICAL SERVICE WILL BE 120 V.
2. THE SSD FAN WILL BE INSTALLED WITH A SHUT-OFF SWITCH IN A WEATHERPROOF HOUSING NEXT TO THE UNIT.
3. THE ELECTRICAL WIRE WILL BE WATER-RESISTANT AND FORM A WATER-RESISTANT SEAL AT THE FAN HOUSING.
4. ELECTRICAL SERVICE FOR THE ALARM AND SENSAPHONE SENTINEL WILL BE WIRED TO A SEPARATE BREAKER FROM THE FANS.
5. PROVIDE AND INSTALL DESIGNATED BREAKERS (MATCH EXISTING) IN PANEL AND LABEL "VIMS" AND "VIMS ALARMS".
6. SERVICE WILL BE PROVIDED TO A 2-GANG POWER OUTLET TO POWER THE TELEMETRY SYSTEM COMPONENTS.
7. IF ACCESS TO EXISTING ELECTRICAL PANEL IS LIMITED, A SEPARATE SUBPANEL WILL BE INSTALLED TO FACILITATE EASY ACCESS TO BREAKERS FOR SYSTEM COMPONENTS.
8. ALL ELECTRICAL WORK WILL BE COMPLETED BY LICENSED ELECTRICIAN AND IN COMPLIANCE WITH APPLICABLE CODES.

LABELING

SYSTEM EQUIPMENT AND COMPONENTS WILL BE LABELED IN ACCORDANCE WITH SECTION 8.4 OF SGM-SF 2023.

STATE OF MICHIGAN
BRYAN VANTUYEN
ENGINEER
No.
6201062741
LICENSED PROFESSIONAL ENGINEER

0 1" 2"
ORIGINAL SCALE

SCALE IS BASED ON 22" X 34" NON-REDUCED SHEET SIZE (BORDER = 21" X 32")

REVISIONS

NO.	DESCRIPTION	DATE	BY

415 WEST WILLIAM STREET

ENGINEER:
Geosyntec consultants
Geosyntec Consultants of Michigan
2100 COMMONWEALTH BLVD
SUITE 100
ANN ARBOR MI 48105

GENERAL NOTES AND SYSTEM SPECIFICATIONS

MITIGATION SYSTEM DESIGN
415 WEST WILLIAM STREET
ANN ARBOR, MICHIGAN

DES BY: BV	DATE: JULY 2024
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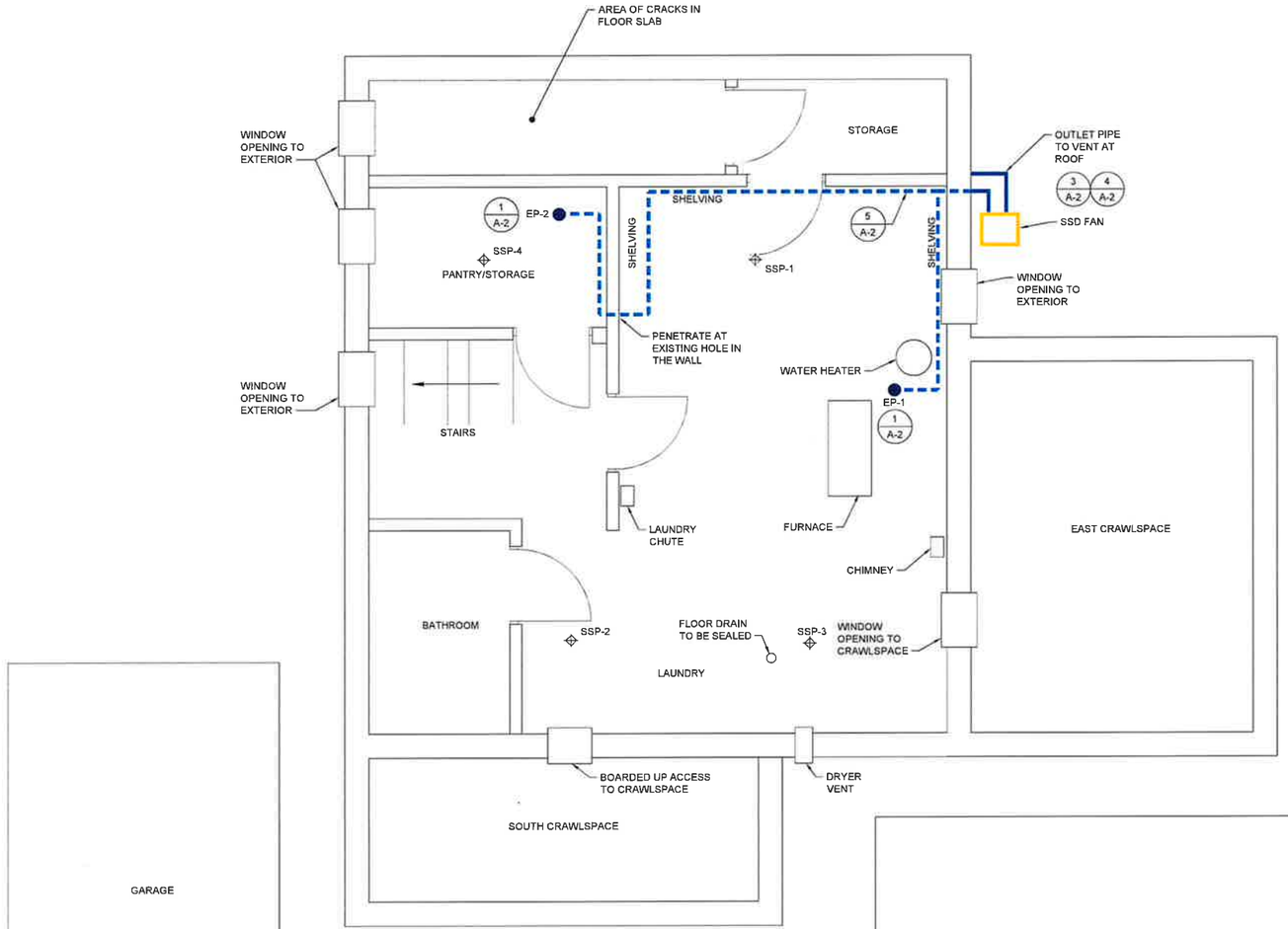
REV BY: -	DOCUMENT: -
APP BY: -	
FILE: JR0248A-002.DWG	

DRAWING NO.
G-2

WEST WILLIAM STREET



STATE OF MICHIGAN
BRYAN VANDUINEN
ENGINEER
No. 6201062741
LICENSED PROFESSIONAL ENGINEER

LEGEND

- INTERIOR EXTRACTION PIPING
- EXTERIOR EXTRACTION PIPING
- SSD FAN LOCATION
- EXTRACTION POINT
- EXISTING SUBSLAB PROBE

N

SCALE BAR (1" = 3')
0 3' 6' 9'
(APPROXIMATE)

0 1" 2"
ORIGINAL SCALE

SCALE IS BASED ON 22" X 34" NON-REDUCED SHEET SIZE (BORDER = 21" X 32")

REVISIONS

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415 WEST WILLIAM STREET

ENGINEER:
Geosyntec consultants
Geosyntec Consultants of Michigan
2100 COMMONWEALTH BLVD
SUITE 100
ANN ARBOR MI 48105

VAPOR MITIGATION SYSTEM LOCATION

MITIGATION SYSTEM DESIGN
415 WEST WILLIAM STREET
ANN ARBOR, MICHIGAN

DES BY: BV	DATE: JULY 2024	DRAWING NO.	
DRN BY: MJ	SCALE:	A-1	
CHK BY: PN	PROJECT: JR0248A		
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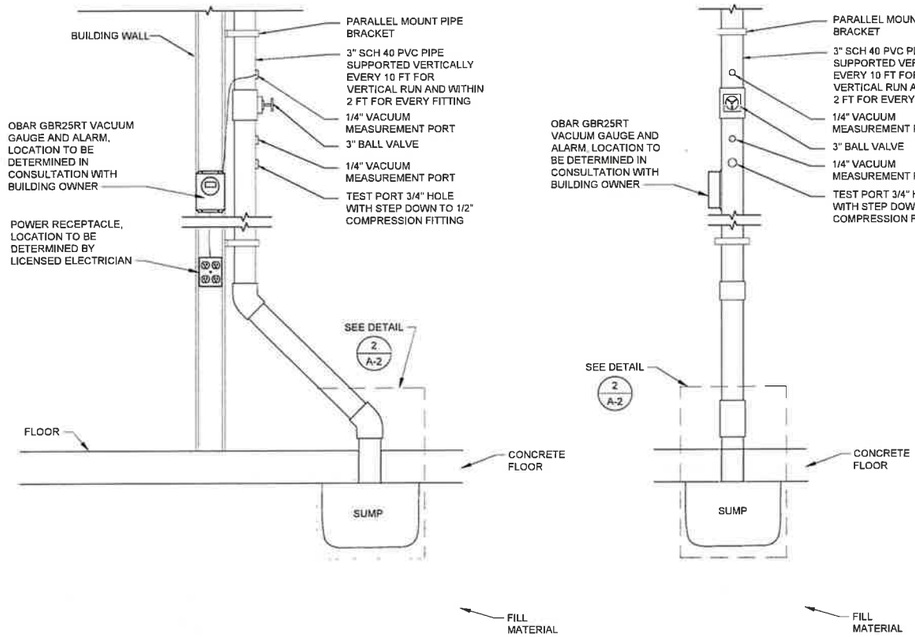
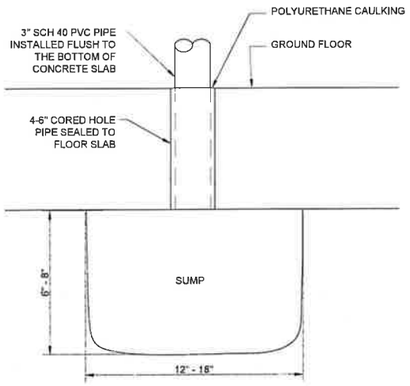
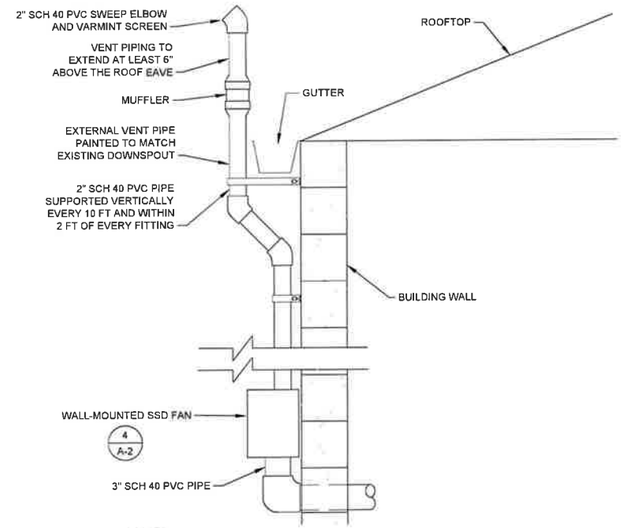


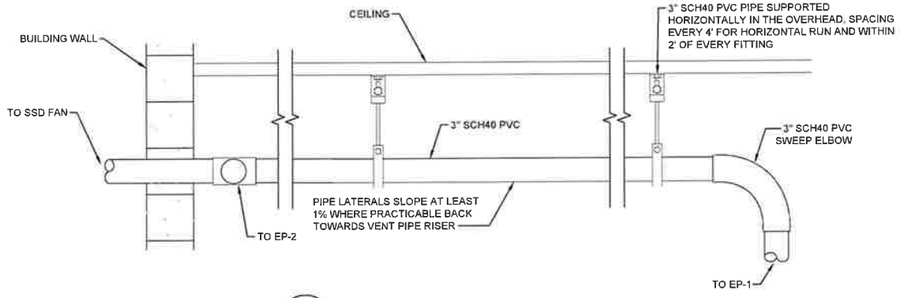
1 A-1 DETAIL
EXTRACTION POINT AND VENT PIPE RISER
SCALE: NTS



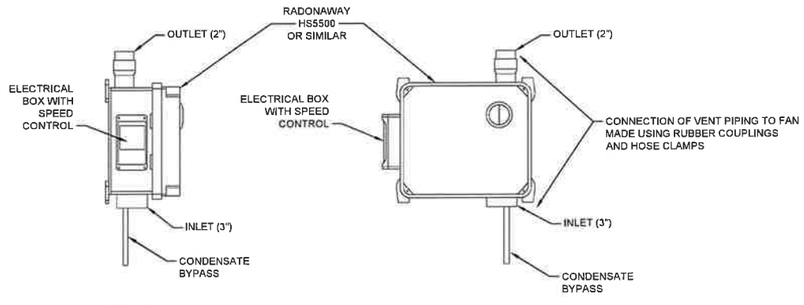
2 A-2 DETAIL
TYPICAL SUMP
SCALE: NTS



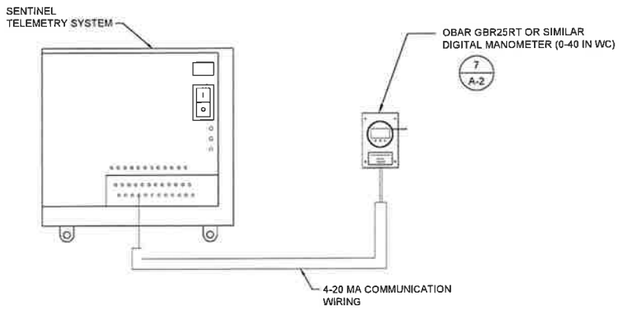
3 A-1 DETAIL
EXTERIOR VENT PIPE CONNECTIONS AND MOUNTING
SCALE: NTS



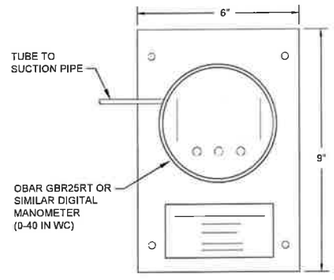
5 A-1 DETAIL
CEILING VENT CONNECTIONS AND MOUNTING
SCALE: NTS



4 A-1 DETAIL
SSD FAN
SCALE: NTS



6 A-2 DETAIL
SENTINEL TELEMETRY SYSTEM
SCALE: NTS



7 A-2 DETAIL
OBAR MANOMETER
SCALE: NTS

STATE OF MICHIGAN
BRYAN VANDEHEI
ENGINEER
No. 6201062741
LICENSED PROFESSIONAL ENGINEER

0 1" 2"
ORIGINAL SCALE
SCALE IS BASED ON 22" X 34" NON-REDUCED SHEET SIZE (BORDER = 21" X 32")

REVISIONS

NO.	DESCRIPTION	DATE	BY

415 WEST WILLIAM STREET

ENGINEER:
Geosyntec consultants
Geosyntec Consultants of Michigan
2100 COMMONWEALTH BLVD
SUITE 100
ANN ARBOR MI 48105

DETAILS

MITIGATION SYSTEM DESIGN
415 WEST WILLIAM STREET
ANN ARBOR, MICHIGAN

DES BY: BV	DATE: JULY 2024	
DRN BY: MJ	SCALE:	
CHK BY: PN	PROJECT: JR0248A	
REV BY: -	DOCUMENT: -	
APP BY: -		
FILE: JR0248A-004.DWG		

DRAWING NO.
A-2

c:_GEO-ACCVACCDocs\gesyntec\gle operations_415 w william\project files\CADD\01_xrms design-bsm\DWGS\SHEETS\JR0248A-004.dwg Last Edited by MJerome on 6/5/2024 2:13 PM


Proposed Location
415 W William St
DRIVEWAY
Crawl
Crawlspace

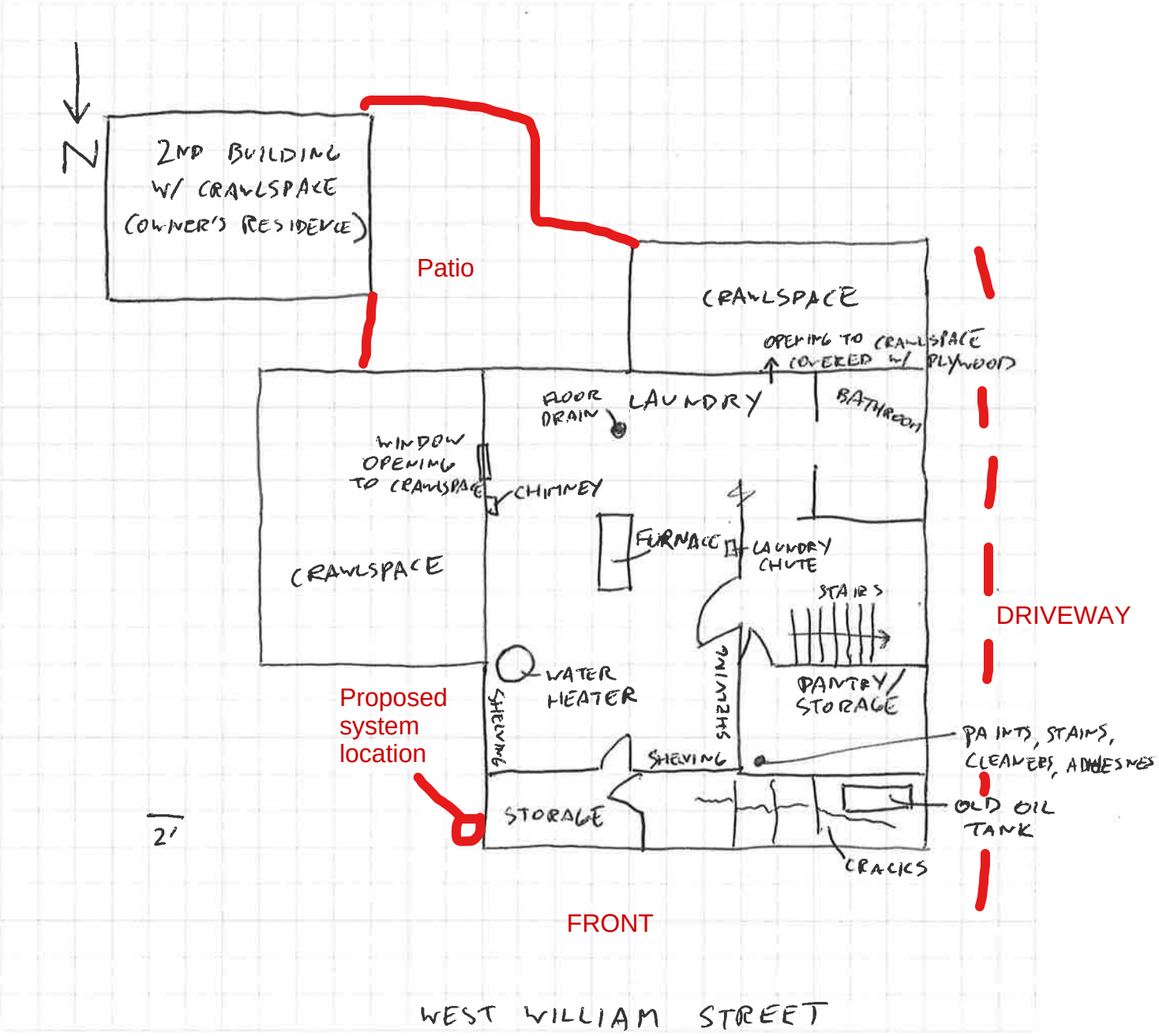

Back Laundry
GENERAC
Speed Queen
ECOS
3/14/24 09:41
127° SE
West Washington Street

Indoor Air Sampling Procedure Via USEPA Method TO-15

BUILDING: 415 W William

FLOOR: Basement

ATTACH ADDITIONAL DETAIL AS NECESSARY




INSIDE CRAWL SPACE TO TIGHT FOR
SYSTEM INSTALLATION
9/14/23 10:21
191° S
2nd Street


LAUNDRY, SMALL CRAWL ACCESS
BACK OF 415
Whirlpool
3/14/24 09:41
225° SW
West Washington Street


SIDE CRAWL SPACE ACCESS
FOR 415
3/14/24 09:41
66° NE
West William Street

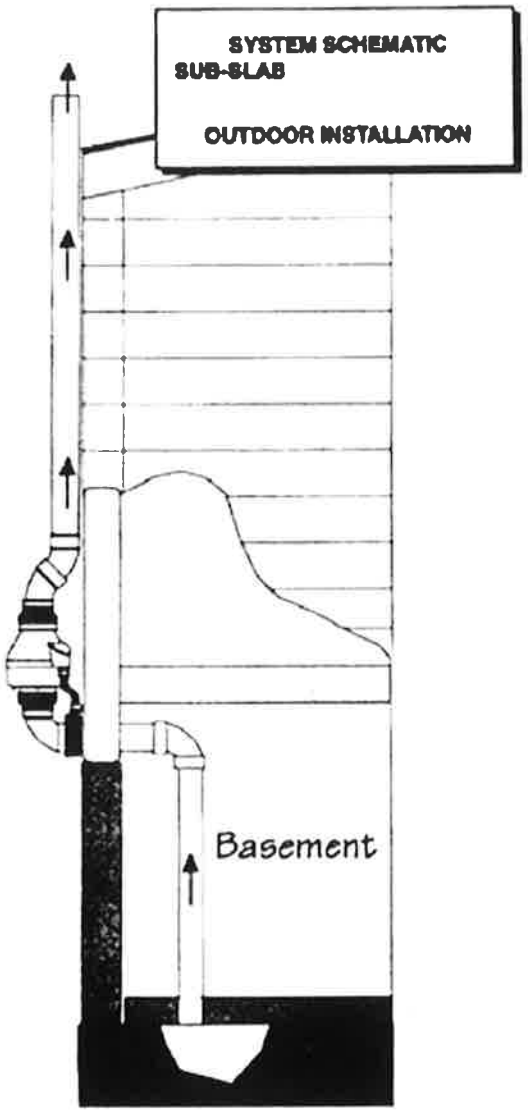
Geosyntec Consultants of Michigan, Inc. (Geosyntec) is conducting environmental investigations in connection with the Argus I and Argus II Buildings in Ann Arbor, Michigan. These buildings were historically used for manufacturing of cameras, optical instruments and lenses. Sampling is being performed to evaluate historical releases of volatile organic compounds (VOCs), primarily trichloroethene (TCE), which was commonly used as an industrial solvent and metal degreaser. The Michigan Department of Environment, Great Lakes, and Energy (EGLE), in collaboration with the Michigan Department of Health and Human Services (MDHHS) and the Washtenaw County Health Department, is overseeing the investigation.

VOC vapors can move through the soil and can enter buildings through a process known as vapor intrusion (VI). To evaluate VI at the 415 West William Street property, Geosyntec collected soil vapor samples from beneath the basement floor and indoor air samples from the basement, crawlspaces, and first floor. Soil vapor sample results were compared to conservative site-specific volatilization to indoor air criteria (VIAC) developed by EGLE. Indoor air samples results were compared to conservative recommended interim action screening levels (RIASLs) jointly developed by EGLE and MDHHS.

Concentrations of TCE and cis-1,2-dichloroethene (a breakdown byproduct of TCE) in the soil vapor samples were greater than their respective site-specific VIAC. TCE concentrations in the indoor air samples from the basement and crawlspaces were also greater than its respective RIASL. Based on these results, a long-term VI mitigation system is needed at the property.

The proposed sub-slab depressurization (SSD) system is designed to remove VOC vapors that may accumulate beneath the basement floor slab and vent those vapors to the atmosphere above the building roofline. Sub-membrane depressurization (SMD), which involves installing vapor barriers in the crawlspaces, removing VOC vapors that may accumulate beneath the vapor barriers, and venting those vapors to the atmosphere above the building roofline, will be implemented in the future to mitigate VI into the crawlspaces. EGLE considers SSD and SMD systems to be among the most effective VI mitigation strategies for existing buildings. Geosyntec described this mitigation approach in a response activity plan submitted to EGLE on October 27, 2023, which EGLE conditionally approved on January 10, 2024.

A separate permit application will be submitted for the SMD system. Any aesthetic modifications made for the exterior piping of the SSD system will also be implemented for the SMD system.


SYSTEM SCHEMATIC
SUB-SLAB
OUTDOOR INSTALLATION
Basement