



March 5, 2024

Leo Rodriguez
Environmental Health and Safety Technician II
Risk Management
Portland Public Schools

Via email: lrodriguez@pps.net

Regarding: Short Term Radon Testing
Marshall High School Building
3905 SE 91st Avenue
Portland, Oregon
PBS Project 25000.241 Phase 0021

Mr. Rodriguez:

From February 20 to March 1, 2024, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at the Marshall High School building in Portland, Oregon. The building is currently occupied by Benson High School. PBS understands that the District is seeking short-term testing of the building. PBS understands that previous testing took place in 2026 and identified elevated radon in Rooms A30, G29, and G27.

METHODOLOGY

The Environmental Protection Agency (EPA) recommends, and the Oregon Health Authority (OHA) requires, that school buildings be tested for radon, and that any radon concentrations be maintained below 4.0 picocuries per liter (pCi/L) of air. PBS used Radonova, Inc., brand single-use, short-term radon test kits to measure radon levels in frequently occupied rooms that are in contact with the ground or above unoccupied basements or crawlspaces. These rooms include classrooms, offices, break rooms, conference rooms, gyms, and cafeterias. Bathrooms, hallways, stairwells, storage rooms, and closets are not tested. Testing is conducted during the winter heating season and during the school week when building uses and operations are normal.

PBS endeavored to use sample location names based on existing room numbers or common-sense descriptions, but in buildings where no room number or other designation was available, PBS assigned names or numbers to the rooms. In some circumstances, small numbers of test kits go missing during the testing period and those locations are not tested. PBS will evaluate whether or not the missing area should be retested based on the results of surrounding areas.

RESULTS

Laboratory results found concentrations below the EPA action level in all tested locations in the building. See the attached laboratory analysis report for more details and the attached informal sample location map approximate locations of where samples were collected.

In addition to the EPA recommendation that radon concentrations not exceed 4.0 pCi/L, OHA recommends that the following steps be conducted based on the results of a room's initial short-term test:

- **If the result is less than 2.0 pCi/L**, school districts are required to test again every 10 years, per Oregon Revised Statute 332.166-167.
- **If the result is between 2.0 pCi/L and 4.0 pCi/L**, consider fixing (i.e., lowering) the radon in that room.
- **If the result is from 4.0 pCi/L to 8.0 pCi/L**, perform a follow-up measurement of that room using a long-term test. This test should be conducted over as much of a nine-month school year as possible, when the room is likely to be occupied. If that result is equal to or greater than 4.0 pCi/L, the radon in the room should be fixed (i.e., lowered).
- **If the initial short-term test result is equal to or greater than 8.0 pCi/L**, conduct a second short-term test and average its result with the initial short-term test result. If the average of the two is equal to or greater than 4.0 pCi/L, radon in the room should be fixed (i.e., lowered).

Note: A great difference in the results of the short-term tests may indicate a flaw in the testing process. Investigate and consider retesting. For situations in which one of the test results is equal to or greater than 4.0 pCi/L, if the higher result is two or more times the lower result, repeat the test.

LIMITATIONS OF SCOPE

This study was limited to the tests and locations as previously indicated. The site as a whole may have other environmental concerns that will not be characterized by this study. The findings and conclusions of this work are not scientific certainties, but probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent conditions on the site or adjoining sites beyond those detected or observed by PBS.

Please feel free to contact me at 503.515.7489 or james.mastanduno@pbsusa.com with any questions or comments.

Sincerely,



James Mastanduno
Project Manager

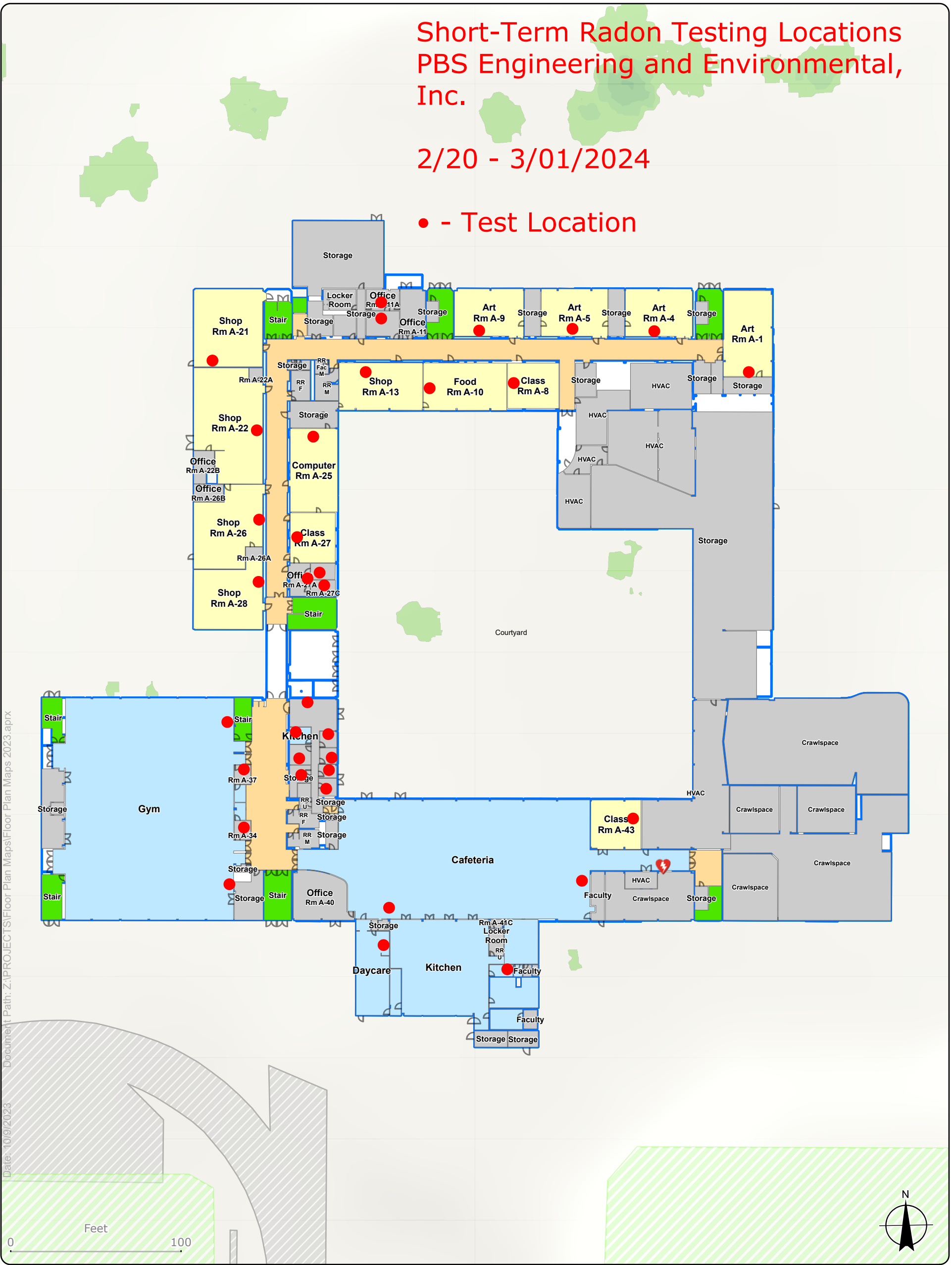
Attachment: Informal Sample Location Map
Radonova Laboratory Analysis Report

MARSHALL: Lower Level 1

Short-Term Radon Testing Locations
PBS Engineering and Environmental,
Inc.

2/20 - 3/01/2024

• - Test Location



Document Path: Z:\PROJECTS\Floor Plan Maps\Floor Plan Maps 2023.aprx
Date: 10/9/2023

CurrentSpaceClass

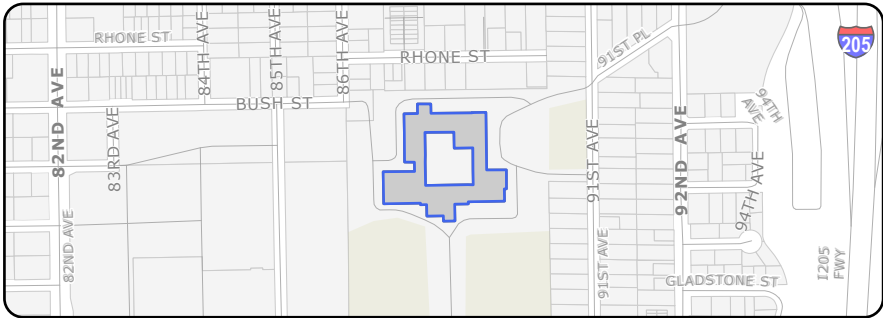
- Classrooms
- Special Purpose, Flex Classrooms
- Office, Rest Rooms, Storage, Mechanical
- Stairs/Elevator
- Corridor, Foyer, Vestible, Ramp

School Grounds

- Campus Footprints
- Athletic Field
- Playground: Paved
- Playground: Unpaved
- Streets

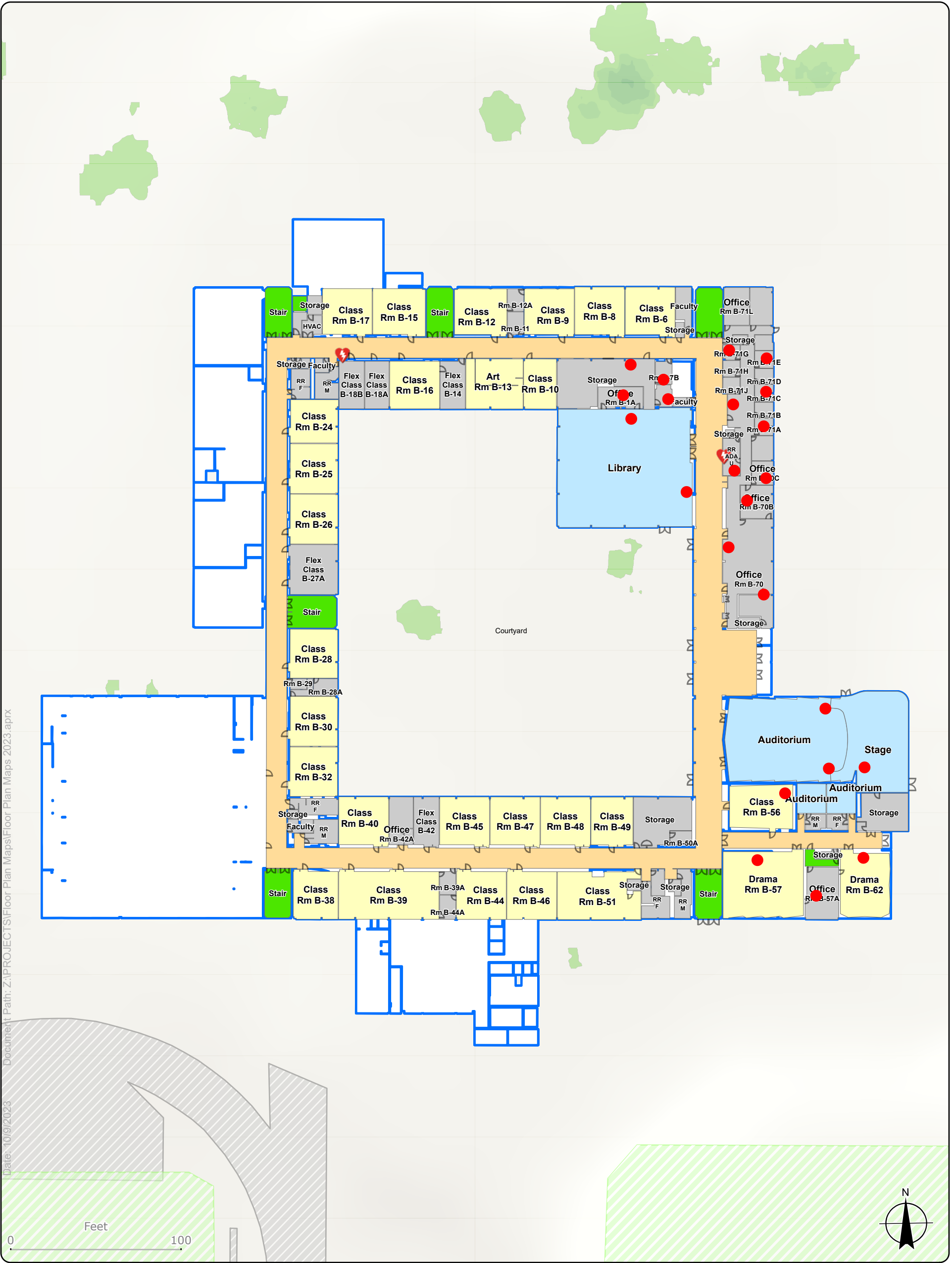
Automated Electronic Defibrillator

Doors



Campus Overview

MARSHALL: First Floor



Document Path: Z:\PROJECTS\Floor Plan Maps\Floor Plan Maps 2023.aprx
Date: 10/9/2023

CurrentSpaceClass

Classrooms

Special Purpose, Flex Classrooms

Office, Rest Rooms, Storage, Mechanical

Stairs/Elevator

Corridor, Foyer, Vestible, Ramp

School Grounds

Campus Footprints

Athletic Field

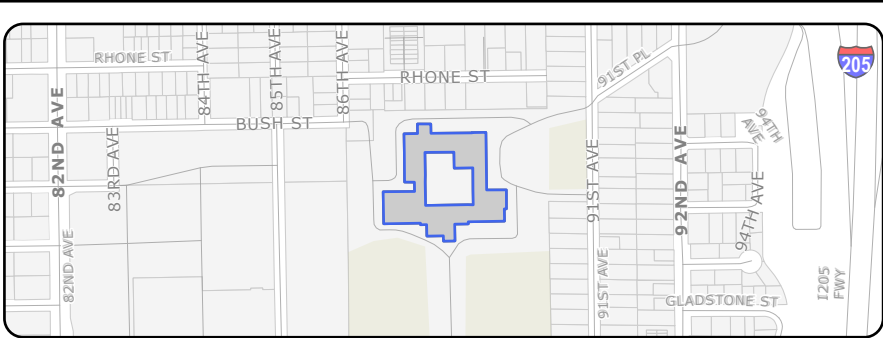
Playground: Paved

Playground: Unpaved

Streets

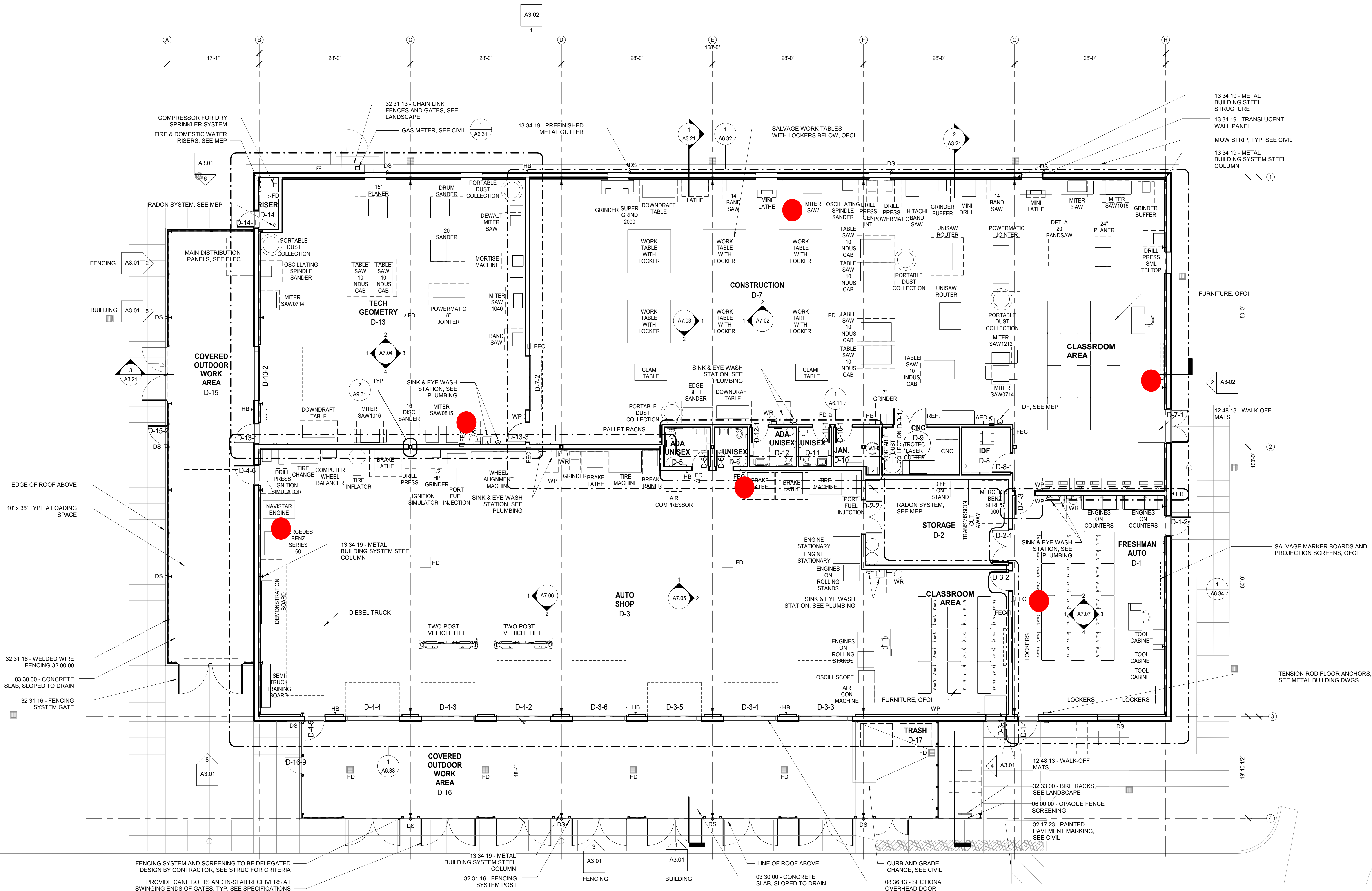
Automated Electronic Defibrillator

Doors



Campus Overview

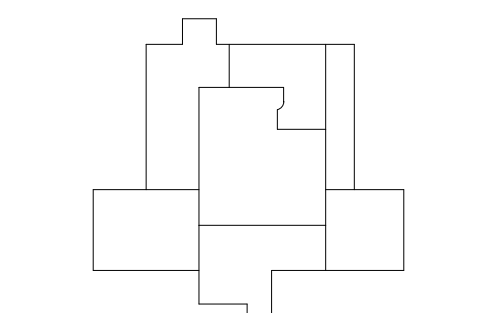
CTE Building



1 MARSHALL NEW BUILDING - FLOOR PLAN
1/8" = 1'-0"

FLOOR PLAN NOTES

- ALL NEW WALLS TO EXTEND TO STRUCTURE ABOVE. UNO. SEE WALL TYPE INDICATIONS FOR LOCATIONS OF PARTIAL HEIGHT WALLS.
- EXTERIOR WALLS TO BE TYPE AA, UNO.
- INTERIOR WALLS TO BE TYPE A30, UNO.
- DO NOT SCALE DRAWINGS. COORDINATE DIMENSIONS SHOWN ON DRAWINGS WITH ACTUAL FIELD MEASUREMENTS. NOTIFY ARCHITECT OF DISCREPANCIES.
- REFERENCE METAL BUILDING DRAWINGS FOR LOCATIONS OF PRIMARY AND SECONDARY STRUCTURAL STEEL ELEMENTS, INCLUDING COLUMNS, BASE PLATES, BEAMS, GIRTS, ETC.
- ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF CONCRETE, OUTER EDGE OF METAL BUILDING BENTS, CENTERLINE OF OPENING, CENTERLINE OF COLUMNS, AND CENTER LINE OF FIXTURES, UNO.
- PROVIDE PENETRATION FIRESTOPPING AT ALL ITEMS PASSING THROUGH FIRE RATED WALLS, TYP.
- ROUTE UTILITIES IN CONCEALED SPACES WHERE POSSIBLE. WHERE NOT POSSIBLE, USE SURFACE MOUNTED RACEWAYS LOCATED 8" AFF OR HIGHER.
- EQUIPMENT IS OFCI, UNO. OWNER'S MOVER WILL DELIVER EQUIPMENT TO THE SITE AND SET IN PLACE. CONTRACTOR WILL INSTALL MEP CONNECTIONS AND SECURE TO STRUCTURE.
- PROVIDE BACKING AND BLOCKING IN FRAMED WALLS WHERE REQUIRED TO SUPPORT WALL MOUNTED ITEMS. BACKING FOR WALL MOUNTED SINKS TO BE MINIMUM 1/4" STEEL PLATE DRILLED AND TAPPED FOR WALL CARRIER. BLOCKING AND BACKING FOR OTHER ITEMS TO BE MINIMUM 1" FIR PLYWOOD. LIGHT GAUGE BACKING NOT ACCEPTABLE FOR ANY ITEMS.
- AT METAL BUILDING WALLS AND ROOF: PROVIDE BACKING MEMBERS FOR ALL WALL AND ROOF MOUNTED ITEMS REQUIRING THEM. COMPLY WITH METAL BUILDING LOADING REQUIREMENTS. REFERENCE METAL BUILDING DRAWINGS FOR SECONDARY FRAMING LOCATIONS.
- AT FULL HEIGHT WALL HEADS, SEE DETAIL 1/A9.31, AT FIRE-RATED WALL HEADS, SEE DETAIL 2/A9.31.
- PROVIDE CORNER GUARDS AT OUTSIDE WALL CORNERS, SEE INTERIOR ELEVATIONS FOR LOCATIONS.



PORTLAND PUBLIC SCHOOLS
BENSON
MARSHALL
SWING SITE
NEW BUILDING

FLOOR PLAN

PBS Engineering
James Mastanduno

RADON MONITORING REPORT

Description of the measurement

The measurement was performed with Activated Charcoal Adsorption by Alpha Energy Laboratories (NRPP ID: 101132 AL).

The detector(s) arrived to Alpha Energy Laboratories, Inc. **02/26/2024**.
They were measured **02/26/2024**.

Test data have been given by PBS Engineering

Property data and address

MEASURE SITE ADDRESS

Portland Public Schools
3905 SE 91st Ave
Portland OR 97266

BUILDING ID

Marshall

Test results

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK135198 [QuickScreen]	02/20/2024 06:30 AM – 02/23/2024 06:30 AM	B62, Standard			< 0.6 pCi/L
RK134835 [QuickScreen]	02/20/2024 06:31 AM – 02/23/2024 06:31 AM	B57A, Standard			< 0.8 pCi/L
RK134815 [QuickScreen]	02/20/2024 06:32 AM – 02/23/2024 06:32 AM	B57A, Standard			< 0.8 pCi/L
RK135171 [QuickScreen]	02/20/2024 06:33 AM – 02/23/2024 06:33 AM	B57 DUP, Duplicate			< 0.5 pCi/L
RK134829 [QuickScreen]	02/20/2024 06:34 AM – 02/23/2024 06:34 AM	B56, Standard			< 0.9 pCi/L
RK135056 [QuickScreen]	02/20/2024 06:35 AM – 02/23/2024 06:35 AM	Auditorium, Standard			< 0.7 pCi/L
RK134775 [QuickScreen]	02/20/2024 06:36 AM – 02/23/2024 06:36 AM	Auditorium, Standard			< 0.8 pCi/L

Comment to the results

A delay in transit more than 10 days from stop of the test RK135108, but in a time frame where an estimated result is possible.

Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

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RADONOVA INC.

1 EAST 22nd STREET, SUITE 200
LOMBARD, IL 60148
331.814.2200, help@radonova.com

PBS Engineering
James Mastanduno

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Portland Public Schools
3905 SE 91st Ave
Portland OR 97266

BUILDING ID

Marshall

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK135153 [QuickScreen]	02/20/2024 06:37 AM – 02/23/2024 06:37 AM	Stage, Standard			< 0.6 pCi/L
RK135115 [QuickScreen]	02/20/2024 06:38 AM – 02/23/2024 06:38 AM	Library, Standard			< 0.6 pCi/L
RK134240 [QuickScreen]	02/20/2024 06:39 AM – 02/23/2024 06:39 AM	Library, Standard			DNR
RK134807 [QuickScreen]	02/20/2024 06:40 AM – 02/23/2024 06:40 AM	B1A, Standard			< 0.7 pCi/L
RK135122 [QuickScreen]	02/20/2024 06:41 AM – 02/23/2024 06:41 AM	Library Storage, Standard			0.6 ± 0.3 pCi/L
RK135074 [QuickScreen]	02/20/2024 06:42 AM – 02/23/2024 06:42 AM	Library Office, Standard			0.7 ± 0.3 pCi/L
RK134802 [QuickScreen]	02/20/2024 06:43 AM – 02/23/2024 06:43 AM	B5, Standard			< 0.9 pCi/L
RK134772 [QuickScreen]	02/20/2024 06:44 AM – 02/23/2024 06:44 AM	Main Office, Standard			< 0.7 pCi/L
RK134742 [QuickScreen]	02/20/2024 06:45 AM – 02/23/2024 06:45 AM	Office Med Room, Standard			< 1.2 pCi/L

Comment to the results

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Portland Public Schools
3905 SE 91st Ave
Portland OR 97266

BUILDING ID

Marshall

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK135161 [QuickScreen]	02/20/2024 06:46 AM – 02/23/2024 06:46 AM	B70B, Standard			0.5 ± 0.3 pCi/L
RK135179 [QuickScreen]	02/20/2024 06:47 AM – 02/23/2024 06:47 AM	B70C, Standard			< 0.6 pCi/L
RK135055 [QuickScreen]	02/20/2024 06:49 AM – 02/23/2024 06:49 AM	Office Nurse, Standard			0.5 ± 0.3 pCi/L
RK135094 [QuickScreen]	02/20/2024 06:50 AM – 02/23/2024 06:50 AM	Main Office North, Standard			< 0.5 pCi/L
RK135195 [QuickScreen]	02/20/2024 06:51 AM – 02/23/2024 06:51 AM	B71A, Standard			0.7 ± 0.3 pCi/L
RK134820 [QuickScreen]	02/20/2024 06:52 AM – 02/23/2024 06:52 AM	"B-71C, LOST", Standard			DNR
RK134779 [QuickScreen]	02/20/2024 06:53 AM – 02/23/2024 06:53 AM	B-71E, Standard			< 0.7 pCi/L
RK135186 [QuickScreen]	02/20/2024 06:54 AM – 02/23/2024 06:54 AM	B-71G, Standard			< 0.7 pCi/L
RK135233 [QuickScreen]	02/20/2024 06:55 AM – 02/23/2024 06:55 AM	CTE D1, Standard			< 0.6 pCi/L

Comment to the results

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James Mastanduno

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Test data have been given by PBS Engineering

Property data and address

MEASURE SITE ADDRESS

Portland Public Schools
3905 SE 91st Ave
Portland OR 97266

BUILDING ID

Marshall

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK135205 [QuickScreen]	02/20/2024 06:56 AM – 02/23/2024 06:56 AM	CTE D7, Standard			< 0.6 pCi/L
RK135204 [QuickScreen]	02/20/2024 06:57 AM – 02/23/2024 06:57 AM	CTE D7, Standard			< 0.5 pCi/L
RK135157 [QuickScreen]	02/20/2024 06:58 AM – 02/23/2024 06:58 AM	CTE D7 DUP, Duplicate			< 0.5 pCi/L
RK130590 [QuickScreen]	02/20/2024 06:59 AM – 02/23/2024 06:59 AM	CTE D13, Standard			< 0.6 pCi/L
RK135105 [QuickScreen]	02/20/2024 07:00 AM – 02/23/2024 07:00 AM	CTE D3, Standard			< 0.5 pCi/L
RK135184 [QuickScreen]	02/20/2024 07:01 AM – 02/23/2024 07:01 AM	CTE D3, Standard			< 0.7 pCi/L
RK135061 [QuickScreen]	02/20/2024 07:01 AM – 02/23/2024 07:01 AM	BLANK, Blank			< 0.5 pCi/L
RK135108 [QuickScreen]	02/13/2024 06:26 AM – 02/16/2024 06:23 AM	B70C DUP, Standard			1.9 pCi/L

Comment to the results

A delay in transit more than 10 days from stop of the test RK135108, but in a time frame where an estimated result is possible.

Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

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331.814.2200, help@radonova.com

What Does My Result Mean?

The United States Environmental Protection Agency (EPA) recommends remediation if the results of one long-term test (greater than 90 days) or one short-term test with a continuous monitor or the average of two passive short-term (less than 90 days) tests* conducted in the lowest lived-in level of the home report at or above 4.0 pCi/L. *If an initial short-term test result is less than 4 pCi/L, a follow-up measurement is probably not needed. If an initial short-term test result is between 4 pCi/L and 8 pCi/L, a long-term or a short-term follow-up measurement is recommended. If an initial short-term test result is greater than 8 pCi/L, a short-term follow-up measurement is recommended. For more information, or to find a certified mitigation professional, contact your state radon office, the National Radon Proficiency Program (www.nrpp.info) or the National Radon Safety Board (www.nrsb.org).

Result (pCi/L) Recommended Action

Less than 2.0	Retest the building at least every 5 years
2.0 - 3.9	Consider Mitigation, retest the building at last every 5 years
4.0 or Higher	Mitigate, test again at least every 2 years to ensure that the system remains effective

Measurement method: Activated Charcoal Adsorption

For this method using the QuickScreen detector, the airtight container with activated charcoal is opened in the area to be sampled and radon in the air adsorbs onto the charcoal granules. At the end of the sampling period, the container is sealed and may be sent to a laboratory for analysis. The gamma decay from the radon adsorbed to the charcoal is counted on a scintillation detector and a calculation based on calibration information is used to calculate the radon concentration at the sample site.

Measured radon concentrations

For each detector, the measured value of the radon concentration is provided. For each value an uncertainty associated with the measurement to a 95% confidence level is also provided. For example a measurement result of 4.0 ± 0.5 pCi/L means that the radon concentration is most likely contained in the range 3.5 - 4.5 pCi/L. If the start or end date of the measurement has not been provided, the radon concentration cannot be calculated. In such cases, the total exposure in pCi*days/L will be reported. The reported measured values are related to the detectors as received by Radonova Laboratories. Detector deployment is not performed by Radonova Laboratories. Measurement information such as monitoring period (dates) and placement location is provided to Radonova Laboratories by the end user. The presented results apply only to the samples tested.

Codes on non-reportable detectors

DNR	Not Reported – Detector Not Returned
ERR	Not Reported – See comment

Measurement method versions used when the report was created

ANSI/AARST MAH-2023, Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes

ANSI/AARST MA-MFLB-2023, Protocol for Measurements of Radon in Multifamily, School, Commercial and Mixed-Use Buildings

Radon measurements in the US

The United States Environmental Protection Agency (EPA) recommends remediation if the results of one long-term test or the average of two short-term tests conducted in the lowest lived-in level of the home report at or above 4.0 pCi/L. The average yearly residential indoor radon level in the US is estimated to be around 1.3 pCi/L. Long-term tests are conducted for more than 90 days. Short-term tests are conducted between 2 and 90 days and should be performed under closed building conditions. If an initial short-term test result is less than 4 pCi/L, a follow-up measurement is probably not needed. If an initial short-term test result is greater than 10 pCi/L, a short-term follow-up measurement is recommended in order to get a fast result. If an initial short-term test result is between 4 pCi/L and 10 pCi/L, a long-term or a short-term follow-up measurement is recommended. For more information about the interpretation of your test results or about other radon related issues we suggest contacting your state radon office.

Your state radon office should have the available EPA publications:

- A Citizen's Guide to Radon
- Home Buyer's and Seller's Guide to Radon
- Consumer's Guide to Radon Reduction

Signature on the report

With the signature on the report, the Measurement specialist at Radonova Laboratories certifies that the quality control procedures follows the guidance in accordance with the AARST/ANSI Measurement Protocols. Measurement information displayed in italics on report has been provided by the customer.

Certification no:

101132-AL, 107830-RT, NY ELAP ID: 11430

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LOMBARD, IL 60148

331.814.2200, help@radonova.com

PBS Engineering

Kiera Yap

RADON MONITORING REPORT

Description of the measurement

The measurement was performed with Activated Charcoal Adsorption by Alpha Energy Laboratories (NRPP ID: 101132 AL).

The detector(s) arrived to Alpha Energy Laboratories, Inc. **03/04/2024**.

They were measured **03/04/2024**.

No person has signed the record card and verified that the instructions have been followed.

Property data and address

MEASURE SITE ADDRESS

Portland Public Schools

3905 SE 91st Ave

Portland OR 97266

BUILDING ID

Benson Marshall High School

Test results

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK134824 [QuickScreen]	02/27/2024 06:43 AM – 03/01/2024 06:07 AM	A-1, Standard			1.2 ± 0.5 pCi/L
RK135217 [QuickScreen]	02/27/2024 06:46 AM – 03/01/2024 06:09 AM	A-4, Standard			1.2 ± 0.3 pCi/L
RK135124 [QuickScreen]	02/27/2024 06:49 AM – 03/01/2024 06:10 AM	A-5, Standard			0.8 ± 0.4 pCi/L
RK135097 [QuickScreen]	02/27/2024 06:55 AM – 03/01/2024 06:13 AM	A-9, Standard			1.5 ± 0.4 pCi/L
RK135126 [QuickScreen]	02/27/2024 06:55 AM – 03/01/2024 06:13 AM	A-9, Duplicate			1.3 ± 0.3 pCi/L
RK135054 [QuickScreen]	02/27/2024 07:03 AM – 03/01/2024 06:14 AM	A-8, Standard			< 0.7 pCi/L
RK135111 [QuickScreen]	02/27/2024 07:05 AM – 03/01/2024 06:17 AM	A-10, Standard			0.9 ± 0.3 pCi/L

Comment to the results

Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

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RADONOVA INC.

1 EAST 22nd STREET, SUITE 200

LOMBARD, IL 60148

331.814.2200, help@radonova.com

PBS Engineering
Kiera Yap

BY
PBS Engineering & Environmental

REPORT RECEIVER(S)
john.yuly@pbsusa.com
PBS Engineering
PBS Engineering

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BUILDING ID
Benson Marshall High School

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RK134827 [QuickScreen]	02/27/2024 07:07 AM – 03/01/2024 06:16 AM	A-13, Standard			1.4 ± 0.5 pCi/L
RK134759 [QuickScreen]	02/27/2024 07:11 AM – 03/01/2024 06:20 AM	A-11, Standard			< 0.9 pCi/L
RK134808 [QuickScreen]	02/27/2024 07:12 AM – 03/01/2024 06:20 AM	A-12, Standard			0.7 ± 0.5 pCi/L
RK135162 [QuickScreen]	02/27/2024 07:17 AM – 03/01/2024 06:23 AM	A-21, Standard			< 0.7 pCi/L
RK134756 [QuickScreen]	02/27/2024 07:19 AM – 03/01/2024 06:26 AM	A-22, Standard			< 0.7 pCi/L
RK135206 [QuickScreen]	02/27/2024 07:23 AM – 03/01/2024 06:31 AM	A-25, Standard			< 0.8 pCi/L
RK134809 [QuickScreen]	02/27/2024 07:23 AM – 03/01/2024 06:31 AM	A-25, Duplicate			1.0 ± 0.5 pCi/L
RK135158 [QuickScreen]	02/27/2024 07:27 AM – 03/01/2024 06:27 AM	A-26, Standard			< 0.7 pCi/L
RK135199 [QuickScreen]	02/27/2024 07:29 AM –	A-27A MISSING, Standard			DNR

Comment to the results

Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

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PBS Engineering
Kiera Yap

BY
PBS Engineering & Environmental

REPORT RECEIVER(S)
john.yuly@pbsusa.com
PBS Engineering
PBS Engineering

RADON MONITORING REPORT

Description of the measurement

The measurement was performed with Activated Charcoal Adsorption by Alpha Energy Laboratories (NRPP ID: 101132 AL).

The detector(s) arrived to Alpha Energy Laboratories, Inc. **03/04/2024**.
They were measured **03/04/2024**.

No person has signed the record card and verified that the instructions have been followed.

Property data and address

MEASURE SITE ADDRESS
Portland Public Schools
3905 SE 91st Ave
Portland OR 97266

BUILDING ID
Benson Marshall High School

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK134764 [QuickScreen]	02/27/2024 07:33 AM – 03/01/2024 06:37 AM	A-27B, Standard			1.0 ± 0.5 pCi/L
RK135224 [QuickScreen]	02/27/2024 07:37 AM – 03/01/2024 06:37 AM	A-27C, Standard			< 0.8 pCi/L
RK135166 [QuickScreen]	02/27/2024 07:37 AM – 03/01/2024 06:38 AM	A-27D, Standard			1.0 ± 0.4 pCi/L
RK134761 [QuickScreen]	02/27/2024 07:40 AM – 03/01/2024 06:27 AM	A-28, Standard			< 1.2 pCi/L
RK134812 [QuickScreen]	02/27/2024 07:44 AM – 03/01/2024 06:41 AM	A-30, Standard			< 0.8 pCi/L
RK135146 [QuickScreen]	02/27/2024 07:47 AM – 03/01/2024 06:42 AM	A-30A, Standard			< 0.7 pCi/L
RK135079 [QuickScreen]	02/27/2024 07:48 AM – 03/01/2024 06:43 AM	A-30B, Standard			< 0.8 pCi/L
RK135100 [QuickScreen]	02/27/2024 07:49 AM – 03/01/2024 06:44 AM	A-30C, Standard			< 0.7 pCi/L
RK135189 [QuickScreen]	02/27/2024 07:51 AM – 03/01/2024 06:45 AM	A-30 exam room 1, Standard			< 0.5 pCi/L

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DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK134782 [QuickScreen]	02/27/2024 07:52 AM – 03/01/2024 06:48 AM	A-30D, Standard			< 0.7 pCi/L
RK135175 [QuickScreen]	02/27/2024 07:53 AM – 03/01/2024 06:48 AM	A-30 exam 2, Standard			< 0.8 pCi/L
RK135140 [QuickScreen]	02/27/2024 07:54 AM – 03/01/2024 06:48 AM	A-30 exam 3, Standard			0.6 ± 0.3 pCi/L
RK134799 [QuickScreen]	02/27/2024 07:57 AM – 03/01/2024 06:52 AM	A-30 lab, Standard			< 0.9 pCi/L
RK135107 [QuickScreen]	02/27/2024 08:00 AM – 03/01/2024 06:57 AM	Gym, Standard			0.5 ± 0.3 pCi/L
RK134806 [QuickScreen]	02/27/2024 08:00 AM – 03/01/2024 06:57 AM	Gym, Standard			< 0.9 pCi/L
RK134791 [QuickScreen]	02/27/2024 08:04 AM – 03/01/2024 06:58 AM	A-37, Standard			1.0 ± 0.5 pCi/L
RK134758 [QuickScreen]	02/27/2024 08:04 AM – 03/01/2024 06:58 AM	A-37, Duplicate			< 0.7 pCi/L
RK135228 [QuickScreen]	02/27/2024 08:06 AM – 03/01/2024 06:58 AM	A-34, Standard			< 0.7 pCi/L

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Benson Marshall High School

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK134767 [QuickScreen]	02/27/2024 08:10 AM – 03/01/2024 07:01 AM	A-37, Standard			< 1.0 pCi/L
RK134796 [QuickScreen]	02/27/2024 08:11 AM – 03/01/2024 07:01 AM	A-32, Duplicate			< 0.9 pCi/L
RK134748 [QuickScreen]	02/27/2024 08:13 AM – 03/01/2024 07:04 AM	Café, Standard			< 0.7 pCi/L
RK135059 [QuickScreen]	02/27/2024 08:13 AM – 03/01/2024 07:04 AM	Café, Standard			< 0.8 pCi/L
RK135239 [QuickScreen]	02/27/2024 08:16 AM – 03/01/2024 07:05 AM	A-40, Standard			< 1.1 pCi/L
RK135220 [QuickScreen]	02/27/2024 08:18 AM – 03/01/2024 07:07 AM	A-38A, Standard			< 0.6 pCi/L
RK135182 [QuickScreen]	02/27/2024 08:20 AM – 03/01/2024 07:08 AM	Kitchen, Standard			< 0.5 pCi/L
RK134783 [QuickScreen]	02/27/2024 08:22 AM – 03/01/2024 07:08 AM	Kitchen office, Standard			< 0.8 pCi/L

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REPORT NUMBER

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REPORT PAGE

6 of 7

REPORT DATE

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BY

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BUILDING ID

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DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	ROOM	FLOOR	RADON RESULT
RK135144 [QuickScreen]	02/27/2024 08:25 AM – 03/01/2024 07:11 AM	A-43, Standard			< 0.5 pCi/L
RK135093 [QuickScreen]	02/27/2024 08:25 AM – 03/01/2024 07:12 AM	BLANK, Blank			< 0.6 pCi/L

Comment to the results

Tryggve Rönnqvist (Electronically signed)

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What Does My Result Mean?

The United States Environmental Protection Agency (EPA) recommends remediation if the results of one long-term test (greater than 90 days) or one short-term test with a continuous monitor or the average of two passive short-term (less than 90 days) tests* conducted in the lowest lived-in level of the home report at or above 4.0 pCi/L. *If an initial short-term test result is less than 4 pCi/L, a follow-up measurement is probably not needed. If an initial short-term test result is between 4 pCi/L and 8 pCi/L, a long-term or a short-term follow-up measurement is recommended. If an initial short-term test result is greater than 8 pCi/L, a short-term follow-up measurement is recommended. For more information, or to find a certified mitigation professional, contact your state radon office, the National Radon Proficiency Program (www.nrpp.info) or the National Radon Safety Board (www.nrsb.org).

Result (pCi/L) Recommended Action

Less than 2.0	Retest the building at least every 5 years
2.0 - 3.9	Consider Mitigation, retest the building at least every 5 years
4.0 or Higher	Mitigate, test again at least every 2 years to ensure that the system remains effective

Measurement method: Activated Charcoal Adsorption

For this method using the QuickScreen detector, the airtight container with activated charcoal is opened in the area to be sampled and radon in the air adsorbs onto the charcoal granules. At the end of the sampling period, the container is sealed and may be sent to a laboratory for analysis. The gamma decay from the radon adsorbed to the charcoal is counted on a scintillation detector and a calculation based on calibration information is used to calculate the radon concentration at the sample site.

Measured radon concentrations

For each detector, the measured value of the radon concentration is provided. For each value an uncertainty associated with the measurement to a 95% confidence level is also provided. For example a measurement result of 4.0 ± 0.5 pCi/L means that the radon concentration is most likely contained in the range 3.5 - 4.5 pCi/L. If the start or end date of the measurement has not been provided, the radon concentration cannot be calculated. In such cases, the total exposure in pCi*days/L will be reported. The reported measured values are related to the detectors as received by Radonova Laboratories. Detector deployment is not performed by Radonova Laboratories. Measurement information such as monitoring period (dates) and placement location is provided to Radonova Laboratories by the end user. The presented results apply only to the samples tested.

Codes on non-reportable detectors

DNR	Not Reported – Detector Not Returned
ERR	Not Reported – See comment

Measurement method versions used when the report was created

ANSI/AARST MAH-2023, Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes

ANSI/AARST MA-MFLB-2023, Protocol for Measurements of Radon in Multifamily, School, Commercial and Mixed-Use Buildings

Radon measurements in the US

The United States Environmental Protection Agency (EPA) recommends remediation if the results of one long-term test or the average of two short-term tests conducted in the lowest lived-in level of the home report at or above 4.0 pCi/L. The average yearly residential indoor radon level in the US is estimated to be around 1.3 pCi/L. Long-term tests are conducted for more than 90 days. Short-term tests are conducted between 2 and 90 days and should be performed under closed building conditions. If an initial short-term test result is less than 4 pCi/L, a follow-up measurement is probably not needed. If an initial short-term test result is greater than 10 pCi/L, a short-term follow-up measurement is recommended in order to get a fast result. If an initial short-term test result is between 4 pCi/L and 10 pCi/L, a long-term or a short-term follow-up measurement is recommended. For more information about the interpretation of your test results or about other radon related issues we suggest contacting your state radon office.

Your state radon office should have the available EPA publications:

- A Citizen's Guide to Radon
- Home Buyer's and Seller's Guide to Radon
- Consumer's Guide to Radon Reduction

Signature on the report

With the signature on the report, the Measurement specialist at Radonova Laboratories certifies that the quality control procedures follows the guidance in accordance with the AARST/ANSI Measurement Protocols. Measurement information displayed in italics on report has been provided by the customer.

Certification no:

101132-AL, 107830-RT, NY ELAP ID: 11430

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