TECHNICAL SPECIFICATION
FOR ASBESTOS REMEDIATION

Prepared For:

Grand Rapids Public Schools

Project Site:

Riverside Middle School
265 Eleanor Street, NE, Grand Rapids, Michigan

MicroAir Project No.: **MA-108-25**

Grand Rapids Public Schools

Riverside Middle School

Technical specification prepared by:

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1.0 Bidder Submittals

1.1 The Contractor shall submit a base bid and any alternates, unit prices and other forms (Familial, Iran, Debarment, Acknowledgment) for the asbestos abatement as outlined in the scope of work section, as described in these project specifications. (Appendix A – Bid Forms).

1.2 The Contractor will acknowledge that they have reviewed the Construction Drawings (Appendix C – Construction Drawings) and acknowledge that they can meet the scope of work requirements.

1.3 The Contractor will acknowledge that they have read and reviewed the Pre-Renovation NESHAP Asbestos Inspection (Appendix D – Inspection Report) conducted by Owner's Representative.

1.4 Schedule

1.	Mandatory Walkthrough:	March 17, 2025, at 10:30 AM
2.	RFI's Due:	March 24, 2025, by 2:00 PM
3.	Bid's Due:	March 31, 2025, by 2:00 PM
4.	Post Bid Interview(s):	April 3, 2025, at 10:00AM
5.	Project Start:	June 9, 2025
6.	Substantial Completion:	July 30 2025

1.5 All RFI's are to be submitted via email to Mr. Chris Decker (microairconsulting@gmail.com) and Mr. Marc Bennett (bennettm@grps.org) of GRPS.

1.6 Three copies of the bid must be submitted, in a sealed opaque envelope, bearing the following information clearly marked on the outside:

Attention: Mr. Marc Bennett
Design/Construction Coordinator
Grand Rapids Public Schools - Facilities Management & Planning
900 Union Street, NE
Grand Rapids, MI 49503
Sealed bid for: GRPS Riverside Middle School Asbestos Abatement

The envelope shall also bear on the outside, the name of the bidder, his/her address and telephone number, and his/her license number, if applicable.

2.0 Contractor Submittals

The successful bidder shall provide the following information to Owner's Representative and the owner's representative prior to commencing any tasks related to this project. These tasks include area preparation, equipment mobilizing, etc. Additional submittals may be required for the Construction Manager award.

2.1 Asbestos

1. Michigan Abatement Contractor's License.

2. Proof that each of the employees assigned to this project has completed a physical complete with pulmonary functions testing.

3. Copies of Michigan Asbestos Abatement Supervisor and Asbestos Abatement Worker Accreditation Cards as issued by the Michigan Department of Labor and Economic Opportunity. The Accreditation period shall not expire prior to the project's scheduled completion date.

4. Current Proof of Asbestos Worker Training or Asbestos Supervisor Training.

5. Proof that non-asbestos workers assigned to this project (for general labor, bag-out, etc.) have received 2-hour asbestos awareness training.

6. Proof of employee respirator training, and most recent fit test certification.

7. Copies of the Environmental Protection Agency (EPA) and/or designated state agencies Notification of intent to Renovate/Demolish as required under 40 CFR 61.22 (d).

8. Detailed work plan describing the number of employees who will be assigned to the project, the schedule (start and completion dates and times for each of the work tasks), equipment to be used within the work area, equipment, and recyclable materials decontamination, fire prevention procedures, and methods of removal of ACM. This document will be reviewed and signed off prior to work commencing.

9. Name and address of landfill proposed by Contractor.

10. A listing of all violations or citations by any regulatory agency in the last year.

2.2 General (Required)

1. Prior to execution of an agreement, the successful bidder will be expected to provide proof of insurance coverage as stipulated herein. Costs associated with these coverages shall be reflected in the bid. In addition, insurance coverage may be secured in an occurrence or claims made format. This insurance shall pay or defend all established claims, regardless of the date on which the claim was made. Comply with all state regulations regarding insurance. Additionally, the chosen abatement contractor(s) shall possess and maintain at least five million dollars ($5MM) in contractor environmental pollution liability insurance. The requirements for additional inures are listed herein and must be met by the Abatement Contractor before work can proceed.

2.3 General **(If Requested)**

1. Written Hazardous Communication program and proof of employee training for working around ACM.

2. Written confined space entry program and proof of employee training (if needed).

3. Written hot work program and proof of employee training (if needed).

4. A written respiratory protection program.

5. Safety Data Sheets (SDS) for all materials brought on-site.

6. A written silica exposure control program.

7. Proof of employee Drug Testing Program.

8. Proof that each representative of the Contractor has undergone a background check.

3.0 Project Conditions

3.1 Asbestos

Removal shall not occur until the 10-day notification has taken effect if a notification is required for the work. Before asbestos abatement activities start, the Contractor shall:

1. Effectively isolate the abatement area from all other areas of the building. The Contractor shall isolate and seal all air ducts, doors, hallways, and other openings into the abatement area.

2. Post warning signs and barrier tape at all entrances or openings to the removal area in accordance with applicable regulations and in all languages spoken by the labor force.

Provide in accordance with 29 CFR 1910.1001(f) of OSHA's Asbestos standard:

DANGER ASBESTOS
MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

In addition, where the use of respirators and protective clothing is required in the regulated area, the warning signs shall include the following:

WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING
IN THIS AREA

3. Construct a decontamination area, per regulations and require that all non-emergency access to the abatement be limited through the decontamination area. The location of the decontamination area shall be determined by the Contractor with the approval of the Owner's Representative on site.

4. The Contractor shall supply a sufficient number of Air Filtration Devices (AFD) to provide a minimum of 4 air changes per hour and negative pressure of .02" water column in the project areas where required. The Contractor shall provide a means to measure water column pressure throughout the project. Negative pressure of at least 0.02" must be maintained at all times. All work must stop if negative pressure drops below 0.02" at any and all times.

5. The Contractor shall assume full responsibility for the conduct of each of his/her employees, including subcontractors, while under contract for this project. Absolutely no employee will be allowed on the premises while under the influence of alcohol, controlled substances, or prescription medication, which may impair the employee in any way. This site will require additional background checks and fingerprinting prior to the first day on site.

6. The Contractor shall establish emergency and fire exit routes from the work area. Emergency response personnel (fire, police, and emergency technicians) shall have immediate access to the work area. In an emergency, preservation of life and treatment of seriously injured workers shall have priority over decontamination.

7. The Contractor shall comply with all federal, state, and local laws, standards, and regulations while carrying out this project.

8. The Contractor will provide and make all arrangements necessary to access utilities on site:

   a) Access to sufficient electrical power shall be provided by the Owner.

   b) Access to sufficient cold running water for decontamination and water for asbestos removal shall be provided by the Owner. The Contractor is responsible for supplying hot water for the purpose of decontamination. The Contractor shall ensure all residual water used in abatement or worker decontamination is filtered and disposed of in the City sanitary sewer.

9. Damage to the Owner's services or property caused as a result of the Contractor's actions or subcontractor of the Contractor, as a result of this project shall be repaired to the Owner's satisfaction. All expenses resulting from repairs of damage shall be at the Contractor's expense.

10. The Contractor shall ensure that the dumpsters maintained on-site are locked at all times when not attended. In addition, the dumpsters shall have a hardtop and be appropriately labeled.

11. All waste shall be transported to the landfill approved by the Owner.

3.2 Contractor Responsibilities

1. The Contractor shall provide all items, articles, materials, operations, or methods listed, required to be furnished or accomplished by reason of the plans or any other Contract Documents, including all labor, materials, equipment, and incidentals required or necessary for their completion.

2. Should any error or inconsistency be found by the Contractor in the Specifications or drawings, the Contractor shall contact Owner's Representative and the Owner before proceeding with the work for proper adjustment. In no case shall the Contractor proceed with the work until so authorized.

3. The Contractor shall be held to provide all labor and materials necessary for the entire completion of the work described in the Bid Documents and reasonably implied therefrom.

4. Quantities listed in this document are for general information only and will not relieve the Contractor from the removal of all asbestos materials under their quoted price.

5. A copy of the waste manifest shall be submitted to the Owner after the completion of the project within 35 calendar days of disposal.

4.0 General Project Conditions

4.1 Legal Requirements

1. The Contractor shall be licensed for asbestos abatement work in the State of Michigan as required by Michigan Public Act 55, effective June 8, 1993. All licensing must be current and up to date.

2. The Contractor shall use only employees who have received health and safety training, which, as a minimum, fulfills the training required by Michigan Public Act 147 (1986) and OSHA 29 CFR 1926.62.

3. The Contractor shall furnish all labor, supervision, materials (lien-free), employee training, employee physicals, insurance, and equipment necessary to carry out asbestos abatement procedures in accordance with OSHA, EPA, MIOSHA, EGLE and other applicable federal, state, and local government regulations.

4. The Contractor shall obtain approval prior to deposit of asbestos-containing waste at an Owner approved landfill.

5. The Contractor shall provide project notification to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and Michigan Department of Labor and Economic Opportunity (MLEO), Asbestos Programs at least 10 days prior to commencement of asbestos abatement work, if required.

6. The Contractor shall comply with all items listed in the General Requirements and in the General Conditions contained in this specification document.

4.2 Referenced Standards:

1. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

   a. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules
   Title 29, Part 1910, Section 1001 and
   Part 1926, Section 1101 of the Code of Federal Regulations

   b. Respiratory Protection
   Title 29, Part 1910, Section 134 of the Code of Federal Regulations

   c. Construction Industry Title 29, Part 1926, of the
   Code of Federal Regulations

   d. Subpart J, Fire Prevention Title 29, Part 1926

   e. Subpart T, Demolition Title 29, Part 1926

   f. Access to Employee Exposure and Medical Records Title 29, Part 1910, Section 2 of the
   Code of Federal Regulations

   g. Hazard Communication
   Title 29, Part 1910, Section 1200 of the Code of Federal Regulations

   h. Specifications for Accident Prevention Signs and Tags Title 29, Part 1910, Section 145 of the
   Code of Federal Regulations

2. EPA: U. S. Environmental Protection Agency (EPA), including but not limited to:

   a. National Emission Standard for Hazardous Air Pollutants (NESHAPS)
   b. National Emission Standard for Asbestos Title 40, Part 61, Sub-part A, and Sub part M (Revised Sub-part B) of the Code of Federal Regulations

3. DOT: U.S. Department of Transportation, including but not limited to: Hazardous Substances

a. Title 29, Part 171 and 172 of the Code of Federal Regulations

4. State Requirements:

a. MIOSHA Rule 2205
b. Michigan Public Act 55 Michigan Public Act 147 Michigan Public Act 440

5. Local Requirements:

Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials. The contractor is also responsible for adhering to any policy or procedure as mandated by GRPS.

6. Contractor Responsibility:

The Contractor shall assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of workers, visitors to the sites, and persons occupying areas adjacent to the sites.

4.3 Worker Protection

1. All individuals entering the removal area during the project must comply with OSHA standard 29 CFR 1910.134 respiratory protection, including the selection of an approved respirator with HEPA filters or an approved supplied-air respirator. The individuals must have passed a medical examination as specified in the respiratory standard, must have completed a pulmonary function test, must have their doctor's permission to engage in activities while wearing a respirator, and must have passed a respiratory fit test as specified in 29 CFR 1910.134.

2. Any facial hair that interferes with the fit of a negative pressure respirator must be removed before the individual dons the respirator.

3. The minimum respiratory protection for workers shall be a half-mask air-purifying respirator equipped with HEPA filter cartridges approved by the National Institute for Occupational Safety and Health (NIOSH).

4. The Contractor shall have established a respirator usage program as specified in 29 CFR 1910.134, and shall have proof of formal employee training in respirator usage.

5. The Contractor shall have a sufficient quantity of replacement HEPA respirator filter cartridge stored on the worksite and shall be easily accessible to workers and Consultant.

6. The Contractor shall enforce proper worker decontamination and cleaning of worker respirators each time they exit the work area.

7. The Contractor shall keep a bound, written, and dated log of employees, regulators, and any other persons who enter the work area wearing respirators. The log shall be kept on-site at or near the enclosure for periodic review or with project documents held by the project supervisor.

8. Should air sampling indicate that the airborne asbestos fiber concentration within the abatement area is in excess of the safe allowable limits for the respiratory protection worn, the Contractor shall provide for his/her employees with respiratory protection that will allow for safe working conditions. The Contractor will consult with Owner's Representative prior to returning back to work to make sure that adequate respiratory protection is provided.

9. The Contractor shall communicate the results of the air sampling to his/her employees by posting the air sampling results on the job site or in writing within 24 hours.

10. In the event the results of the personal breathing zone samples exceed the Permissible Exposure Limit (PEL) of 0.10 fibers/cc for asbestos or the Excursion Limit (EL) of 1.0 f.cc, work will be stopped until the cause can be isolated.

11. Asbestos abatement personnel shall wear a powered air-purifying respirators (PAPR) respiratory protection until sufficient data has been collected through personal breathing zone sampling to assure the method of removal does not result in airborne

concentrations in excess of the restrictive limits of the respirator. Respiratory protection requirements may be relaxed to negative pressure respirators when sufficient data has been generated and at the approval of the Owner's Representative on-site industrial hygienist.

12. Workers shall wear disposable full-body coveralls, head covers, and appropriate footwear in the removal area. Reusable footwear (i.e., boots) may be left in the dirty room of the removal area between workdays but must be either disposed of with other contaminated wastes or decontaminated thoroughly before removal from the dirty room. No street clothes will be allowed below disposable coveralls.

13. The Contractor shall provide gloves, hard hats, goggles or safety glasses, and other personal protective equipment (PPE) as may be appropriate for use by workers on the project site. The Contractor will meet all minimum PPE requirements set forth by the Construction Manager.

4.4 Worker Decontamination

1. The Contractor shall construct and isolate a decontamination area in accordance with 29 CFR 1926 Appendix F.

2. Contractor's employees shall remove street clothes in the clean/changing room, and dress in disposable coveralls, head covers, foot covers, and respiratory protection prior to entering negative pressure enclosure work areas. No street clothes will be allowed below disposable coveralls.

3. When workers leave the work area, they shall remove their head coverings, disposable coveralls, and foot coverings in the "dirty" or "equipment" room, and while wearing a respirator, proceed to the shower. Respirators shall be removed while showering with soap and water.

4. Because cold water showers discourage thorough worker decontamination, the Contractor must provide showers with water of at least 70 degrees Fahrenheit with independently adjustable hot and cold-water controls for worker decontamination. The Contractor shall provide a portable water heater for each negative pressure enclosure.

5. Workers shall shower as a minimum:
   a. before lunch
   b. at the end of each workday
   c. at any other time, the worker leaves the contaminated area.

4.5 Prohibited Activities

Smoking, drinking, eating, or chewing gum or tobacco inside the contaminated area and surrounding work areas are prohibited. The Contractor shall immediately release any individual of the privilege of working on the project if the individual is smoking, eating, drinking, or chewing tobacco or gum inside the work area.

4.6 On-Site Industrial Hygienist Responsibilities

1. The Owner will contract with Owner's Representative, as the neutral third party to conduct air monitoring and assure Contractor compliance with applicable asbestos abatement standards, regulations, and procedures. Air monitoring procedures shall follow the NIOSH 7400 A method (third revision of June 14, 2019) and Appendix A of 29 CFR 1926.1101 (Construction standard) for asbestos. Air samples shall be collected, as stated below.

   a. Background, baseline, or pre-abatement samples may be collected prior to the start of area preparation.

   b. General (clean) area samples will be collected outside the restricted area to verify that the engineering controls established on this project are effective in preventing the spread of airborne asbestos fibers to uncontaminated areas. In the event that general area samples obtained outside the enclosure but in the regulated area are equal to or exceed 0.05 fiber/cc, work inside the removal area will cease. The cause will be identified and corrected before allowing the Contractor to resume the asbestos abatement activities.

c. Personal breathing zone samples shall be the responsibility of the Contractor. The Owner's Representative may verify personal breathing zone samples. Sample results shall be displayed within 24 hours of collection. If the airborne fiber concentration is in excess of the PEL, the Contractor shall document the steps taken to control and minimize the levels of airborne asbestos fibers. This monitoring does not relieve the Contractor of their OSHA responsibilities.

d. Clearance samples shall be collected only after the on-site industrial hygienist, and a representative of the Contractor has performed a visual examination on the removal area. If asbestos is detected subsequent to clearance sampling, the ACM shall be removed. Additional clearance samples may be required. Post-abatement air clearance samples shall be below the required MIOSHA limit of 0.05 f/cc.

e. The on-site hygienist will submit post abatement re-occupancy forms that will notify other building occupants that the area has had all abatement activities finalized and the space is safe to occupy.

4.7 Negative Pressure Enclosure (If required)

1. The Contractor shall isolate the project areas from the remainder of the building. Each area shall be pre-cleaned, and any suspect ACM and/or ACM debris found on ceilings, floors, or ledges shall be wetted and removed with the use of a HEPA vacuum prior to erecting the enclosure. The on-site owner's representative shall inspect the integrity of the Contractor's barriers prior to the start of abatement in each area. The Contractor shall isolate work areas for the duration of the project by completely sealing off all openings to the area. Sealing of openings and fixtures of the work area shall include, but not be limited to, heating and ventilation ducts and openings, attic ventilation ducts extending downward into the floor, doors, windows, skylights, and lighting, electrical panels, and conduit openings. Sealing shall be accomplished with 6 mil polyethylene sheeting or equivalent, taped, or glued into place. Enclosure walls shall be constructed of a minimum of one layer of polyethylene sheeting taped into place. The floors of the enclosures shall be constructed of a minimum of one layer of 6-mil polyethylene sheeting, or equivalent, taped, or glued into place. The Contractor is responsible for cleaning any glue or tape residue or subsequent damage thereof, from any surface following the completion of the work.

2. If contaminated, movable objects are located within the removal area, the Contractor shall, while setting up the restricted area, vacuum, clean, and remove these from the removal area. Any permanent fixture or item that cannot be removed from the work area must be protected and covered during abatement activities.

3. Airlocks for entrance in and out of the work area shall be constructed of 6 mil polyethylene sheeting and wooden or metal framing. The airlocks from the work area, to the equipment (dirty) room, to the shower area, to the clean (change) room shall be contiguous.

4. The Contractor shall provide ventilation controls that facilitate the movement of airborne fibers away from the worker in all removal areas. The equipment used for such ventilation controls shall have HEPA filters for filtering exhaust air that shall be exhausted to the outdoors unless otherwise directed by the Owner. In each restricted area, ventilation controls shall operate continuously throughout the project until final clearance sampling levels are attained.

5. The Contractor shall post lawfully required notifications of asbestos removal, Contractor licensing, and training certificates of the Contractors personnel trained in the requirements of the NESHAP standard adjacent to the entrance of the removal area, and to any other points of access to the work area.

6. It is the Contractor's responsibility for site security unless otherwise stated.

4.8 Methods of Asbestos Removal Within the NPE

1. Removal of all asbestos shall be with wet methods. All asbestos surfaces shall be sprayed with water and an acceptable wetting agent. A fine spray of this solution shall be applied to prevent fiber liberation preceding removal; fine spraying of surfaces shall be continued to minimize employee exposure.

2. Asbestos-containing materials shall be removed and placed into 6 mil, labeled bags while still wet. Bags will be labeled with legally required hazard warnings, sealed, washed, and placed into a second 6 mil, labeled, polyethylene bag, and must be labeled and sealed in accordance with federal and state regulations. (See asbestos waste disposal requirements)

3. Asbestos-containing material shall not be removed with power tools unless attached to a HEPA filtration unit. Owner's Representative must approve all use of power tools prior to beginning work.

4. All equipment used during removal shall be properly decontaminated prior to removal from the work area.

5. All plastic sheeting, cleaning materials, clothing, and other disposable materials used during removal shall be double-bagged in the same manner as asbestos-containing materials.

6. All transportation of asbestos-containing materials to the landfill shall be in enclosed vehicles.

4.9 Decontamination of the NPE

1. The Contractor shall clean all surfaces in the work area with water and/or a HEPA-filter equipped vacuum. After the work area has been cleaned, the Contractor and the industrial hygienist shall conduct a thorough visual examination to certify the removal of all ACM. Upon completion of the visual inspection and approval of the industrial hygienist, the Contractor shall apply a sealant (encapsulant) to all potentially contaminated surfaces inside the removal area.

2. If after final clearance air sampling, the industrial hygienist finds the work area is not sufficiently decontaminated, the Contractor shall repeat the cleaning and encapsulation process. This shall continue until no asbestos is found during the clearance visual.

3. After the work area is found to be in compliance, all barriers, plastic sheeting, tape, and other wastes and debris shall be removed and disposed of as asbestos-containing waste.

4. Remote decontamination may be proposed by the Abatement Trade Contractor as part of their abatement plan. Where a Mini Enclosure (ME) is specified, a pressure differential containment with a minimum two-stage decontamination facility contiguous with the containment will be constructed as outlined in these specifications prior to the removal of asbestos-containing materials or any other preparatory work which may involve disturbing the asbestos-containing material. A shower facility shall be located nearby pursuant to OSHA regulations (29 CFR 1926.1101), and must be equipped with hot and cold adjustable water, disposable towels, soap, and shower facilities must comply with 29 CFR 1910.141(d)(3).

5. Any other removal method or practice that the Contractor intends to use should be described in their written work plan and approved by Owner's Representative and the Owner prior to proceeding with the work. These work practices include but are not limited to; glove bag removal operations, regulated area set-up, negative pressure enclosures, whole structure removal, etc.

4.10 Asbestos Waste Disposal Requirements

The Contractor shall dispose of the asbestos-containing materials in disposal bags labeled as follows:

First Label: Provide in accordance with 29 CFR 1910.1001(f) of OSHA's Asbestos standard:

DANGER CONTAINS ASBESTOS FIBERS
MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST AVOID CREATING DUST

Second Label:

Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 106, 107, 171 to 180. Published December 21, 1990.

RQ, ASBESTOS, NA 2212 CLASS 9

Third Label:

Riverside School
1250 Riverside Street, SE Grand Rapids, MI

Labels shall be applied to bags before bags are loaded onto vehicles or dumpsters to be transported to the landfill.

All waste shall be transported to the landfill in hard-roofed trucks, and all waste shipment records shall be submitted to the Owner with 35 days following their receipt from the landfill.

5.0 Scope of Work

The project consists of the removal of all asbestos-containing materials that will be impacted by the scheduled renovations, as outlined in the project drawings. Mudded pipe fittings on fiberglass plumbing and heating piping and mag & air cell straight pipe insulation has been identified inside the school. HVAC, electrical, and plumbing upgrades will require wall and ceiling demolition to access the impacted building materials.

5.1 Contractor Responsibilities

1. These project specifications are the responsibilities of the Abatement Contractor. The Owner, Owners Representative, Construction Manager, or Consultant will approve in writing, prior to starting the project, any proposed deviations from these specifications. The information, which may be used to assist the Contractor in formulating his/her bid, is presented for informational purposes only and shall be verified by the Contractor or his/her representative at the time of the site inspection.

2. The Contractor will be responsible for removing all ACM within the work areas as identified in these specifications or found during abatement and selective demolition process. All mechanical equipment required for the removal of wall and ceiling materials should be equipped with an OSHA approved dust shroud.

3. The Contractor is responsible for additional selective demolition, including removal of walls, hard ceilings, and suspended ceiling tile around abatement work (directed by the CM or Consultant; not included in selective demo bid) that may be required to access known asbestos-containing materials.

4. The Contractor is required to coordinate any Lockout/Tagout activities with the Owner or Construction Manager, if applicable.

5. The Owner will provide electrical power for the Contractor to connect to his/her electrical panel to power equipment. It shall be the Contractor's responsibility to ensure all equipment and circuits are properly isolated prior to the commencement of work. All equipment must be plugged into a ground-fault circuit interrupter (GFCI).

6. All equipment used on this project shall be in good repair with no exposed wires or insulation. All plugs shall be equipped with a ground. Extension cords shall be rated for appropriate amperage, "hard surfaces", and shall have watertight connectors.

7. Temporary light fixtures shall be general service, incandescent lamps of sufficient power for adequate illumination. Guard cages or tempered glass shall be used to protect the lamps. Exterior fixtures shall be used if exposed to moisture.

8. The Owner will provide a source of water for the duration of the project. The Contractor is responsible for the proper disposal of all wastewater generated on-site during the project to the sanitary sewer. All wastewater shall be properly filtered prior to disposal.

9. The Contractor is responsible for the protection of door frames and other surfaces not impacted by the renovation. The Contractor shall repair spray adhesive residues and any paint damaged from the abatement work.

10. The Contractor is responsible for providing portable restroom facilities and hand washing stations of sufficient quantity for the labor force.

11. The Contractor and his/her employees are required to comply with all federal, state, and local laws regarding asbestos abatement.

12. The Contractor and his/her employees are required to adhere to all construction safety standards set forth by the Construction Manager.

13. The Contractor and his/her employees are required to comply with all COVID-19 safety protocols.

14. The construction drawings (Appendix D) show details of areas of the building that will be included in the renovation activities. The scope of work will include removal of the asbestos-containing straight pipe and pipe fitting insulation inside the tunnel, walls, and ceilings of the schools' renovation areas.

15. Appendix D also details the windows to be removed as part of the planned renovations. Entry door overhangs of the building have transite material that will be removed. Tagged fire rated fire doors have also been identified for removal.

16. The base bid must include two (2) mobilizations. The first scheduled abatement work will start June 9, 2025. The second mobilization will be the week of July 28, 2025 (as necessary for any additional removal of fire doors, flooring under mechanical units, windows, etc.). A unit rate is also needed on the Unit Rates Bid Form.

17. Windows with glazing and caulking shall be removed (as much a possible) during the first mobilization. Window removal shall be scheduled with the construction manager. The construction manager will be responsible for boarding up openings.

Confirmed Asbestos-Containing Materials:

The following table identifies the **confirmed positive for asbestos homogeneous building materials** at Riverside.

Asbestos-Containing Materials at Riverside Middle School		
HA #	**Materials Description**	**Location / Est. Qty.**
RSM-6	Exterior soffits and window transite	Exterior soffits and above windows (600 SF)
RSM-7	Exterior window caulk	Exterior windows (5,000 LF)
RSM-11	Fire rated tagged fire doors	Exterior doors (14 doors)
RSM-12	Mudded pipe fittings	Boiler rooms/Mechanical Rooms/Tunnels/Hallways/Classrooms/ Locker Rooms (2,000 LF)
RSM-14	Interior window glazing	Boiler Room/Classrooms/Hallways (5,000 LF)
RSM-24	Mudded roof drain insulation	Hallways/Classrooms above ceilings (100 LF)
RSM-39	Exterior window glazing (Room 114)	Exterior windows (5,000 LF)
RSM-47	Straight pipe insulation (mag & air cell)	Tunnels/Hallways/Classrooms (3,400 LF)

The following table identifies the suspect homogeneous building materials that tested negative (None Detected) for asbestos at Riverside:

Tested Building Materials Resulting in Non-Detect for Asbestos at Riverside		
HA #	**Materials Description**	**Est. Qty.**
RSM-1	Brick mortar	>5,000 linear feet
RSM-2	Block mortar	>5,000 linear feet
RSM-3	Concrete	>10,000 square feet
RSM-4	Exterior decorative block mortar	<5,000 linear feet
RSM-5	Exterior decorative slab mortar	<5,000 linear feet
RSM-8	Ceramic grout	<1,000 square feet
RSM-9	Wall and ceiling plaster (Office)	<10,000 square feet
RSM-10	Tan cove base and mastic	<1,000 square feet
RSM-13	1'x1' splined ceiling tile	>10,000 square feet
RSM-15	12"x12" Dark grey floor tile with mastic	<10,000 square feet
RSM-16	Black cove base and mastic	<1,000 square feet
RSM-17	1'x1' ceiling tile (with holes) and glue pod	>10,000 square feet
RSM-18	Light grey cove base and mastic	<1,000 square feet
RSM-19	2'x2' ceiling tile	>10,000 square feet
RSM-20	12"x12" grey with light grey spots floor tile and mastic	<10,000 square feet
RSM-21	Older chalkboards (not tested)	>1,000 square feet
RSM-22	Wood floor underlayment (not tested)	>10,000 square feet
RSM-23	Vibration dampener	>5,000 square feet
RSM-25	Grey cove base and mastic	>1,000 square feet
RSM-26	Grey vinyl stair tread and mastic	>1,000 square feet
RSM-27	12"x12" floor tile (tan with squares) and mastic	>5,000 square feet
RSM-28	Red vinyl stair tread and mastic	<1,000 square feet
RSM-29	Roofing materials (not tested)	<10,000 square feet
RSM-30	Plaster ceiling in the Boiler Room	>1,000 square feet
RSM-31	Boiler #3 gasket	100 linear feet
RSM-32	Boiler #2 – Outer insulation	800 square feet
RSM-33	Textured drywall above lockers	>1,000 square feet
RSM-34	Red 12"X12" floor tile	>1,000 square feet
RSM-35	Drywall, tape, and mud	>5,000 square feet
RSM-36	Wall & ceiling plaster (rm. 166A)	>10,000 square feet
RSM-37	Dark blue 12"x12" floor tile and mastic (health office)	>1,000 square feet
RSM-38	Grey with grey spots 12"x12" floor tile and mastic (rm. 101)	>1,000 square feet
RSM-40	Light grey 12"x12" floor tile and mastic (rm. 115)	>1,000 square feet
RSM-41	Light blue 12"x12" floor tile and mastic	>1,000 square feet
RSM-42	Brown and tan 12"x12" floor tile and mastic (rm. 166A)	>1,000 square feet
RSM-43	2'x2' suspended ceiling tile (lower game room)	>1,000 square feet
RSM-44	Sink undercoating	300 square feet
RSM-45	Pink 12"x12" floor tile and mastic	<1,000 square feet
RSM-46	Roof flashing (not tested)	<5,000 square feet

Lead-Based Paint & Other Metals Testing Results:

Suspect Lead-Based Paint Chip Sampling Results at Riverside Middle School					
Sample #	**Paint Description / Substrate**	**Location**	**Lead Conc.**	**Cd Conc.**	**Cr-VI Conc.**
RSM-Pb-1	Orange on block walls	Hallways	<3.80 %	<0.05%	0.60%
RSM-Pb-2	White on walls and ceilings / plaster-block-drywall	Classrooms/Hallways	<0.05 %	<0.05 %	<0.05 %
RSM-Pb-3	Blue on block walls	Hallways	<0.03 %	<0.03 %	<0.03 %
RSM-Pb-4	Blue on steel lockers	Lockers	<0.05 %	<0.05 %	<0.05 %
RSM-Pb-5	White ceiling on steel roof deck	Roof deck (Boiler room)	0.12 %	<0.01 %	<0.01 %
RSM-Pb-6	Brown on doors, door frames, and window frames	Hallways	0.38 %	<0.09 %	<0.09 %
RSM-Pb-7	Beige walls / plaster-drywall	Classrooms	<0.01 %	<0.01 %	<0.01 %
RSM-Pb-8	Yellow walls / plaster-drywall	Classrooms	3.48 %	<0.04%	0.45%
RSM-Pb-9	Tan on doors, door frames, and window frames	Hallways and classrooms	<0.13 %	<0.13 %	<0.13 %

6.0 Project Notes

1. This project will require that the successful Contractor staff the project with a dedicated on-site supervisor/project manager for the duration of the project for continuity. On-site supervision should not be switched out unless Owner's Representative or the Owner approves it and a transition plan is in place.

APPENDIX A
BID FORMS

BID FORM

1. TO: Grand Rapids Public Schools
Facilities Building
900 Union, NE
Grand Rapids, MI 49506

1.1 FOR: GRPS Riverside Middle School Asbestos Abatement

1.2 DATE: _____ (Bidder to enter date)

1.3 SUBMITTED BY: (Bidder to enter name and address)

Bidder's Full Name _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-mail Address _____

1.4 OFFER

GRPS Riverside Middle School Asbestos Abatement

A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by GRPS for the above-mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

B. Total Project Base Bid _____

_____ dollars

($ _____), in lawful money of the United States of America.

C. We have included the required security deposit as required by the Instruction to Bidders in the base bid. The cost of the security deposit included is $ _____ .

D. The cost of the 100% Performance Bond included in the base bid is $ _____ .

E. The cost of the 100% Payment Bond included in the base bid is $ _____ .

F. All applicable federal taxes are included, and State of Michigan taxes are included in the Bid Sum.

G. Number of days estimated for work _____ .

H. Typical work shift schedule (ex: M-F, 8 AM – 5 PM) _____.

I. Estimated size of the crew _____.

The bid bond shall be for 5% of the total dollar amount provided in the total project base bid for all project combined (including performance and payment bonds).

1.5 ACCEPTANCE

A. This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.

B. If this bid is accepted by Grand Rapids Public Schools within the time period stated above, we will:
1. Execute the Agreement within ten days of receipt of Notice of Award.
2. Furnish the required bonds within ten days of receipt of Notice of Award.
3. Commence work within ten days after written Notice to Proceed of this bid.

C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Grand Rapids Public Schools by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.6 CONTRACT TIME

A If this Bid is accepted, we will:

1. Begin the scope of work on June 9, 2025. Complete the scope of work by July 30, 2025.

1.7 CHANGES TO THE WORK

A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
   1. _____ percent overhead and profit on the net cost of our own Work;
   2. _____ percent on the cost of work done by any Subcontractor.

B. On work deleted from the Contract, our credit to Grand Rapids Public Schools shall be Architect-approved net cost plus _____ of the overhead and profit percentage noted above.

1.8 ADDENDA

A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
   1. Addendum # _____ Dated _____.
   2. Addendum # _____Dated _____.

1.9 BID FORM SIGNATURE(S)

A. The Corporate Seal of:

_____

(Bidder - print the full name of your firm)

was hereunto affixed in the presence of:

_____

(Authorized signing officer, Title)

(Seal)

UNIT PRICE SCHEDULE

The undersigned agrees that upon the Owner's approval, the Contract Base Bid Sum(s) may be altered by the Unit Prices indicated below. In preparing the unit price bids, include costs to provide the labor and material, permits, bonds, insurance, and all other items necessary to complete the indicated unit price work within the Contract start and completion dates (including quality control monitoring).

UNIT PRICE NO. 1: Additional removal of 10 linear feet of mudded fittings or straight pipe insulation while on site

$_____/Unit

UNIT PRICE NO. 2: Standard hourly man hour rate for removal while on site $ _____/HR

UNIT PRICE NO. 3: OT/Night/Weekend hourly man hour rate for removal while on site $ _____/HR

UNIT PRICE NO. 4: Additional mobilization to and from the site $ _____/Unit

UNIT PRICE NO. 5: Additional fire door removal while on site $_____/Door

UNIT PRICE NO. 6: Removal of 7'x6' window (with asbestos-containing glazing) while on site

$ _____/Unit

UNIT PRICE NO. 7: Removal of drywall/plaster ceiling/wall while on site

$_____/Square Foot

UNIT PRICE NO. 8: Removal of transite panel while on site $_____/Square Foot

Contractor Acknowledges Reviewing Appendix C – Construction Drawings ☐ Yes

Contractor Acknowledges Reviewing Appendix D – NESHAP Inspection Report ☐ Yes

Contractor Acknowledges Submitting Familial Relationship, Non-Collusive Affidavit, Iran Business, Debarment Forms, and Criminal Background Disclosure Form ☐ Yes

Contractor Acknowledges Submitting Unit Rates Form ☐ Yes

Contractor Has Submitted Acknowledgments Form ☐ Yes

Contractor Acknowledges Reviewing Appendix B – Contract Agreement Draft ☐ Yes

END OF BID FORM

FORM OF SWORN STATEMENT OF FAMILIAL RELATIONSHIP

As required by Section 1267 of the Revised School Code – MCL 380.1267

STATE OF MICHIGAN
COUNTY OF _____, being duly sworn, deposes and says:

That _____ (The "Bidder") has bid for an improvement to the following described real property located in Kent County, Michigan, which is owned by the Grand Rapids Public Schools, and legally described as follows:

Project Name: GRPS Riverside Middle School Asbestos Abatement

That the following is a statement of disclosure of any familial relationship that exists between the owner or any employee of the Bidder and any member of the Grand Rapids Public Schools Board of Education or Superintendent, as required pursuant to Section 1267 of the Revised School Code, as amended.

1. That there are no such familial relationships existing at this time.

2. That a familial relationship exists between _____, who is an (owner) (employee) of the Bidder and the _____ (nature of familial relationship – e.g., brother, sister, cousin, etc.) of _____who is (a member of the Board) (the Superintendent).

_____
Deponent

Subscribed and sworn to before me this _____Date of_____, 2025

_____

Notary Public of MI, County of _____

Acting in: _____

My commission expires: _____

Iran Business Relationship Affidavit

Effective April 1, 2013 all bids, proposals, and/or qualification statements received in the State of Michigan must comply with the "Iran Economic Sanctions Act". The following certification is to be signed and included at time of submittal.

Certification

Pursuant to the Michigan Iran Economic Sanctions Act, 2012 P.A. 517, by submitting a bid, proposal or response, Respondent certifies, under civil penalty for false certification, that it is fully eligible to do so under law and that it is not an "Iran linked business" as the term is defined in the Act.

_____ _____

Signature Title

_____ _____

Company Date

Subscribed and sworn to before me this Date of_____, 2025

_____

Notary Public of MI, County of _____

Acting in: _____

My commission expires: _____

DEBARMENT AND SUSPENSION CERTIFICATION

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- Has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- Does not have a proposed debarment pending; and
- Is not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space:

_____

_____

_____

Exceptions will not necessarily result in denial or award but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions. The above certification is part of the Bid. Signing this document on the signature portion thereof shall also constitute signature of this Certification.

_____	_____
Signature	Title
_____	_____
Company	Date

NON-COLLUSIVE AFFIDAVIT

STATE OF MICHIGAN

COUNTY OF _____

_____, being duly sworn, deposes and says that:

1. The proposal has been arrived at by the consultant independently and has been submitted without collusion with, and without any agreement, understanding, or planned common course of action with, any other vendor of materials, supplies, equipment, or services described in the request for proposals, designed to limit independent bidding or competition; and,

2. The contents of the proposal have not been communicated by the consultant or its employees or agents to any person not an employee or agent of the consultant or its surety on any bond furnished with the proposal and will not be communicated to any such person prior to the official opening of the proposal.

_____

Signature of Contractor

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on the _____ day of _____, 2025, by

_____.

_____

_____, Notary Public

_____ County, _____

My Commission Expires: _____

Acting in the County of: _____

Criminal Background Affidavit

The undersigned, the owner or authorized officer of the below-named Firm, pursuant to the criminal background compliance certification requirements of Grand Rapids Public Schools (the "School District") hereby represents and warrants that the Firm has performed and/or will perform sufficient criminal background checks, including at a minimum, an Internet Criminal History Tool ("ICHAT") check, for all of its owners, employees, agents, representatives, contractors and/or other personnel who will be on any School District premises to carry out the services contemplated by the Contract Documents. The Firm further hereby certifies that no owner, employee, agent, representative, contractor and/or other personnel of the Firm will be on any School District premises if they are a registered criminal sexual offender under the Sex Offenders Registration Act, Public Act 295 of 1994, or have been convicted of "Listed Offense" as defined under Section 722 of the Sex Offenders Registration Act, MCL 28.722.

The Firm further acknowledges that if it is found to have submitted a false certification or otherwise fails to comply with the requirements of this certification, the School District may immediately terminate the Contract.

FIRM:

_____
Name of FIRM

By: _____

Its: _____

STATE OF _____

COUNTY OF _____

This instrument was acknowledged before me on the _____ day of _____, 2025, by

_____.

_____

_____, Notary Public

_____ County, _____

My Commission Expires: _____

Acting in the County of: _____

REQUEST FOR INFORMATION

PROJECT: PROJECT: GRPS Riverside Middle School Asbestos Abatement

FROM: COMPANY: _____

NAME: _____

PHONE: _____

EMAIL: _____

FAX: _____

DATE: _____

QUESTION:
(Type or print in box, or attach additional typed pages with this cover page)

SEND TO: Mr. Marc Bennett
Design/Construction Coordinator
Grand Rapids Public Schools
PHONE: (616) 819-3024

LIST OF SUBCONTRACTORS

PARTICULARS

1. Herewith is the list of Subcontractors referenced in the bid submitted by:

2. (Bidder) .....

3. To: Grand Rapids Public Schools

4. Dated ..... and which is an integral part of the Bid Form.

5. The following work will be performed (or provided) by Subcontractors and coordinated by us:

LIST OF SUBCONTRACTORS

WORK SUBJECT	SUBCONTRACTOR NAME	DOLLAR AMOUNT

ACKNOWLEDGEMENTS

1. The Bidder acknowledges:

   a. That this bid was developed without any collusion, undertaking, or agreement, either directly or indirectly, with any other bidder or bidders to maintain the prices of indicated work or prevent any other bidder or bidders from bidding the work.

   b. That this bid will not be withdrawn for a period of 60 calendar days after the indicated date for receipt of bids.

   c. Receipt of the following Addenda in addition to this document:

      Addendum No. _____, dated _____ Addendum No. _____, dated _____

   d. That all phases of specified work will be complete on or before the construction completion date indicated in the project schedule.

   e. Fire alarms will not be deactivated.

   f. The Owner will be responsible for the removal of all books and movable objects inside the project areas.

   g. Multiple mobilizations will be required

   h. The Owner may require ICHAT (or similar) background checks for all Contractors/Tradesmen working inside GRPS. All costs associated with this process are to be included in the bid.

   i. That the following documents, identified in Section 00100 (Instructions to Bidders) are attached to this Bid Form:
      - Bid Bond
      - Bid Disclosure Statements – Familial Relationship Form / Iran Affidavit / Debarment and Suspension Certification Form

BIDDER'S FIRM NAME: _____

ADDRESS: _____

CITY / STATE / ZIP: _____

TELEPHONE / EMAIL: _____

AUTHORIZED CORPORATE OFFICER: _____
Signature

_____
Printed Name

_____
Date

GENERAL REQUIREMENTS

1.01 FIELD CONDITIONS AND DIMENSIONS

A. Prior to ordering materials, preparing shop drawings, or doing any work, verify at the site all dimensions, details, quantities, and conditions which may affect the work. No allowance for additional compensation will be considered for discrepancies between dimensions indicated on the drawings and actual field dimensions, or for the Subcontractor's failure to comply with this requirement.

1.02 LEAD PAINT

A. This renovation project may involve activities that disturb lead-based paint. It is the responsibility of the contractor to determine if the building to be renovated is a Child-Occupied Facility as defined under the EPA regulation Renovation, Repair, and Painting Final Rule (RRP Rule). All covered renovations to a Child-Occupied Facility must be performed by Certified Firms, using Certified Renovators and other trained workers.

1.03 ASBESTOS

A. All material to be used in the work shall be certified by the manufacturer to be free of any amount of asbestos. No material will be permitted on the site without such certification.

B. The Contractor should review the Owner's material management plan for their information regarding asbestos. The Contractor must provide an affidavit stating that no asbestos was used in the project. Any asbestos containing material installed under this Contract by the Contractor shall be removed and replaced with like asbestos-free materials, all at the cost of the Contractor.

1.04 MATERIALS AND SUBSTITUTIONS

A. Materials of manufacturers, other than those specifically named, will be given equal consideration provided that written approval for the substitution is obtained from the Owner (Grand Rapids Public Schools). Request for substitution consideration must be received at least five (5) days prior to bid date.

B. The Contractor shall be totally responsible for all costs incurred by dimension changes and weight changes and material quantity changes occasioned by this substitution.

1.05 PROGRESS MEETINGS

A. The Owner may schedule progress meetings to be held on the jobsite whenever needed to supply information necessary to complete the work without interruptions.

B. The Contractor shall be represented at each progress meeting by persons with full authority to act for the Contractor in regard to all portions of the work.

1.06 WORKMANSHIP

A. The Contractor shall be fully responsible for all construction means, methods, techniques, sequence, and procedures and for coordinating all portions of the work under the Contract with the Owner.

B. The Contractor shall provide an authorized representative at the site – at all times during working hours – to receive and execute orders by the Owner. All such orders given to the Contractor's representative shall be deemed as given to and received by the Contractor.

C. The Contractor shall maintain a copy of the Project Manual at the project site at all times.

1.07 CODE AND REGULATION COMPLIANCE

A. Comply with all applicable federal, state, and local codes and regulations relating to buildings,

employment, the preservation of public health and safety, use of streets, and the performance of the work under this Contract. It shall be the responsibility of the Contractor to fully understand all such requirements and to ensure that the subject requirements are fully and faithfully enforced.

B. Any work performed by the Contractor known or should have been known to be contrary to existing laws, rules and regulations, and for which the Contractor fails to give notice of such fact to the Owner, shall be the responsibility of the Contractor. The Contractor shall bear all costs arising therefrom and hold the Owner harmless for any such violation.

C. Upon completion of the work, the Contractor shall submit to the Owner a certificate of inspection by the civic authority having jurisdiction, showing that all work, subject to inspection has been properly inspected and approved to meet current code requirements.

1.08 PROJECT SAFETY

A. SAFETY IS OF ABSOLUTE IMPORTANCE. On all sites, the Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs associated with the work. Under no circumstances shall the Contractor's activities jeopardize the safety of the building occupants, Contractor personnel, and the general public.

B. All work must be accomplished in accordance with all applicable Construction Safety Standards rules and regulations for Construction Operations, as set forth by the Department of Labor in the state where the project is located.

C. The requirements indicated in this section are to be considered as minimal. Where the requirements of any of the listed authorities having jurisdiction conflict with the requirements of this section, the maximum condition shall prevail.

D. The Contractor shall furnish, install and maintain as long as necessary and remove when no longer required, adequate barriers, warning signs and lights or other necessary or prudent safety measures at all dangerous locations during work operations for the protection of Contractor personnel, building occupants, and the general public. Provide and erect all such safety precautions in accordance with federal, state, and local codes and other legal requirements.

E. Whenever lifting materials or equipment over or near existing or occupied buildings, provide advance notice of such activities and arrange to have any potentially endangered spaces vacated.

F. During work operations, provide temporary partitions, barriers, curtains, and guards as necessary to confine materials, dust and debris to the immediate work areas. Do not allow dust or debris to enter the building interior. Coordinate the location of temporary barriers or partitions with the Owner.

G. Remove all temporary protection when work is completed and restore disturbed areas to their original condition.

H. The Contractor shall hold the Owner harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the work under the Contract.

1.09 PROTECTION OF PROPERTY

A. Coordinate all work operations with the Owner so that adequate interior protection, as necessary, is provided and disruption to normal building operations is minimized. Repair all property damage caused by lack of such protection to the satisfaction of the Owner.

B. Confine equipment, storage of materials, debris, and the operation and movements of workmen within the physical limits and time limits directed by the Owner. Such activities are to be governed by applicable local building codes and the traffic regulation and safety and fire regulation of local

authorities.

C. Document existing damage prior to the start of work to avoid responsibility for preexisting conditions. During work operations, provide protection for existing building, finishes, walks, drives, and landscaping in and adjacent to the work areas. Repair or replace building components or site property damaged during the work to match its condition before the damage. If the Contractor fails to repair or replace such damage, the Owner will have the work done by others and the costs of such work will be charged to the Contractor.

D. Do not store materials, tools, or equipment on any existing roof area adjacent to the work site unless proper protection of the existing roof is provided and the materials are spread out and located at column locations.

E. The Contractor shall hold the Owner harmless against all claims of damage or alleged damage to any such structure arising out of the work under this Contract.

1.10 FIRE SAFETY

A. No open fire is permitted on the building site at any time.

B. Take all precautions to eliminate possible fire hazards at the site, including but not limited to the following:

1. Remove all combustible debris from the roof and storage areas on a daily basis.

2. Store highly flammable materials in well-ventilated areas; mixing and preparation of such materials is also restricted to such areas. Handle all such materials in accordance with safe practices and the requirements of authorities having jurisdiction.

3. The Contractor shall not store large quantities of flammable materials at the site.

1.11 VANDALISM

A. The cost for any damage by vandalism to material or equipment or that, which occurs to items finished or installed under this contract, is to be borne by the Contractor. The Contractor is responsible for such vandalism from the start of construction until it is conditionally accepted by the Owner.

1.12 TEMPORARY UTILITIES AND FACILITIES

A. Water and electricity may be available in the area where work will be performed. If so, the Contractor will not be charged for reasonable use of these services for construction operations. The Contractor shall pay costs for installation and removal of any temporary connections including necessary safety devices and controls.

1.13 MISCELLANEOUS FACILITIES AND CONTROLS

A. New materials delivered to and stored outdoors on the jobsite shall be fully protected from weather by placement on raised platforms and shall have secure waterproof plastic coverings or tarpaulins. The waterproof plastic coverings or tarpaulins shall not extend all the way to the ground surface. They shall terminate a few inches above the ground surface. Factory-provided plastic wrap is not an acceptable waterproof covering.

B. Contractors and their employees or suppliers will not use or interfere with existing public access, drives, roads or parking lots, except as specifically indicated by prior arrangement with the Owner.

C. Contractor's employee parking, delivery trucks and other construction vehicle parking will only be allowed in areas designated by the Owner.

D. The Contractor shall provide and regularly maintain portable sanitary facilities at the site. The contractors' employees shall not utilize the restrooms in the school buildings.

1.14 NO SMOKING POLICY

A. Owner has a strict no smoking policy, which includes all buildings, grounds and vehicles. No smoking will be allowed anywhere on school property at any time.

1.15 REMOVAL OF DEBRIS

A. Remove all rubbish and debris from the site daily or more often if directed by the Owner. The premises shall be maintained as clean as practical, consistent with the neatness required for the Owner's normal operations.

B. No storage of removed items or debris will be permitted on the site unless so directed by the Owner.

C. The location of the trash containers is subject to the Owner's approval.

D. During non-construction hours, cover and seal trash containers to prevent wind blown debris and access into trash containers.

GENERAL CONDITIONS

I. Work to be accomplished by this project is as outlined by the plans, General Conditions, General Requirements, Special Conditions and instructions to bidders, herein, referred to as the contract documents which become the "contract". Interpretations of the contract documents may be requested and will be provided, in writing, to all bidding firms, providing such request is made in adequate time prior to bid due time. Explanations or interpretations made orally are not considered binding.

II. The Contractor is responsible for any required permits, fees, notices, etc. for any federal, state or local government agency having jurisdiction over the project.

Costs and arrangements for governmental inspection shall be the responsibility of the Contractor.

III. The Contractor shall be responsible for maintaining an environment in compliance with all rules, regulations and codes covering an occupied school facility.

IV. The Owner reserves the right to evaluate any or all bids on factors including, but not limited to, first cost/life cycle costs, and value to Grand Rapids Public Schools. The Owner reserves the right to reject any or all bids.

V. Final payment will be made within 30 days after the Contractor has achieved final completion as determined by Owner and supplied necessary submittals / warranties / guarantees as may be required elsewhere in the contract documents. 10% of value of Work completed and acceptable will be retained by Owner until final payment.

VI. Bidding Contractor shall be able to substantiate a good record of performance and service. Financial status of bidders may be reviewed by Grand Rapids Public Schools as part of selecting most desirable bid.

VII. Each bid shall be accompanied by good and sufficient bid security in an amount not less than 5% of amount of bid and shall be conditioned to secure the Owner from loss of damage by reason of the withdrawal of the proposal or by failure of a bidder to enter a contract for performance of the Work, in the event their proposal is accepted by the Owner.

VIII. The Contractor shall provide any and all equipment required to fully and safely complete their work. No equipment shall be furnished by or borrowed from Owner.

IX. Contractor shall coordinate their Work with other trades in a manner that is in the best interest of the Owner and the overall project.

X. During contractor's performance of the Work, Owner will continue to occupy the existing building. The Contractor shall provide labor and materials to construct, maintain and remove necessary temporary enclosures as necessary to comply with State of Michigan Fire Code and prevent dust or debris in the construction area(s) from entering the remainder of the building.

If the Owner must provide custodial services because of the Contractor's failure to provide and maintain effective temporary enclosure(s), a fee of $30.00 per custodian, per hour, plus expenses will be deducted from monies due the Contractor. Interruption of Owner's access to the building will not be permitted without prior approval by the Owner. Interruption or blocking-off required means of access to or from the building will not be permitted.

During the school day, limit construction operations to those methods and procedures which will not adversely and unduly affect the environment of Owner's occupied space, including noise, dust, lighting hazards and other undesirable effects and conditions.

XI. The successful bidder shall provide from insurance companies licensed and "admitted" to do business within the State of Michigan, insurance certificates or minimum insurance coverage as follows:

XII. TAXES, PERMITS, LICENSES, ETC.

Sales use tax shall be included in the bid price. All other taxes, fees, permits, and shipping costs etc. shall also be included.

XIII. PERFORMANCE AND PAYMENT BONDS

Contractor shall furnish separate Bonds as security for faithful performance and payment of all Contractor's obligations under the Contract Documents. Each of these Bonds shall be in amount at least equal to the Contract Price and in such form and with such sureties as are acceptable to Owner. Contractor shall ensure that each executed copy of the Bond

Form is complete and sealed. Bond shall be issued by a surety named in U.S. Treasury Circular 570 licensed to conduct business in the State where the project is located.

If the Surety on any Bond is declared bankrupt or becomes insolvent or its right to do business is terminated in the state where the Work is located or it ceases to be listed as an acceptable surety in U.S. Treasury Circular 570, Contractor shall, within Five (5) days thereafter, substitute another Bond from an acceptable Surety.

- Cost for Performance Bond shall be included as a separate line item on bid proposal.
- Cost for Payment Bond shall be included as separate line item on bid proposal.
- Owner reserves the right to waive bonding requirement and deduct cost of bonding from Contractor's bid.

XIV. PREVAILING WAGE (If Applicable)

Prevailing wage is NOT required.

XV. SAFETY

Contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. Safety shall be the responsibility of the Contractor. All contractor related personnel shall be instructed daily to be ever mindful of the full time requirement to maintain a totally safe environment for the facilities' occupants, including students, staff, visitors and the occurrence of the general public on or near the site.

SAFETY TO BUILDING OCCUPANTS IS OF ABSOLUTE IMPORTANCE. Under no circumstances shall the Contractors activities jeopardize the safety of occupants.

The Contractor shall furnish, install and maintain as long as necessary and remove when no longer required adequate barriers, warning signs and lights at all dangerous points throughout the work for protection of occupants, and the public. The Contractor shall hold the Owner harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the work under the Contract. The Contractor shall hold the Owner and Owner's Representative harmless from fines resulting from the Contractor's failure to provide all required safety protection required by the Michigan DLARA. The contractor shall also hold the Owner and Owner's representative harmless from any fines resulting from the contractor's failure to perform all abatement activities in accordance with all applicable regulatory guidelines required by the regulating agencies.

XVI. NO SMOKING

No smoking or vaping is permitted in buildings or on school grounds.

XVII. SECURITY

Contractors shall observe the following procedures when working in a school building, unless otherwise instructed:

1. Proceed to the office, identify yourself, state reason for being in the building, and receive visitor's pass.

2. Complete work, then revisit office to check out prior to leaving the building/premises.

XVIII. ENVIRONMENTAL SAFETY/RESPONSIBILITY

It shall be the responsibility of the Contractor or sub-contractor to pay any and all costs incurred from the clean up related to any environmental hazard created by means of release, spill, leak or any other means of contamination caused by accident or neglect of the Contractor or sub-contractor.

It shall be the responsibility of the Contractor or sub-contractor to dispose of any product(s) and/or material following EPA, DNR, and local applicable laws and regulations.

It shall be the responsibility of the Contractor or sub-contractor, if required, to purchase the proper permits and notify the proper authorities prior to commencing said project or, should a "release" take place, to notify proper authorities of any such release.

It shall be the responsibility of the Contractor or sub-contractor to maintain, on site, a bloodborne pathogen plan and all necessary safety supplies associated with any spill or clean up that may occur.

XIX. VISITING THE SITE

If the Contractor deems necessary, they shall visit the site to satisfy themselves of all conditions before submittal of their proposal. No allowance shall subsequently be made on behalf of Contractor for reason of error or misunderstanding.

For your convenience call the Secretary to the Manager of Design and Construction at (616) 819-3024, prior to visiting the site, to arrange for entry into the secured building and receive custodial assistance.

In order to maintain a safe and orderly environment within our buildings, all Contractors, Construction Managers, Consultants, Sub-Contractors etc. must comply with the following: When entering a Grand Rapids Public School Building, please proceed directly to the main office, identify yourself and state your business. When you have completed your business, please check out at the office.

XX. RIGHT TO KNOW

In accordance with MIOSHA regulations pertaining to the "Michigan Right to Know Law" the Owner has posted Material Safety Data Sheets for any hazardous chemicals in their workplace. The Contractor shall designate a coordinator to oversee the institution and maintenance of a similar program for the areas in which construction work will take place. The program must encompass all MIOSHA Regulations with regards to the "Michigan Right to Know Law" for all hazardous chemicals which will be used on site during the course of construction.

XXI. ASBESTOS FREE CERTIFICATION

No asbestos containing materials shall be purchased or installed as part of this project. The Contractor shall be required to certify that no asbestos containing materials have been installed in this project. Approved certification shall be on file with the Owner prior to consideration for final payment.

XXII. AFFIRMATIVE ACTION

Grand Rapids Public Schools, as an Equal Opportunity Employer, complies with federal and state laws prohibiting discrimination, including (but not limited to), Title IV and Title VII (with amendments) of the 1964 Civil Rights Act, Title IX of the Educational Amendment of 1972, Section 504 of the Rehabilitation Act of 1973, Veterans Readjustment Act of 1974 as amended 38 USC 20-12 and the Americans With Disabilities Act of 1990.

It is the policy of the school board that no person, on the basis of race, sex, gender, height, weight, color, ethnicity, religion, national origin, age, marital status, disability or veteran status, shall be discriminated against in employment, educational programs and activities or admission. Inquiries or complaints should be addressed to, Equal Opportunity Office, 1331 Franklin S.E., P.O. 117, Grand Rapids, MI 49501- 0117. This reaffirmation of the District's commitment to comply with applicable non- discrimination laws shall not be a contractual agreement or expand the District's liability for compliance.

XXIII. INSULATION AND PROTECTION FROM MOISTURE

Insulation shall be applied on clean, dry surfaces and only after tests and approvals required by the specifications have been completed.

All pipe insulation on piping operating below ambient temperature shall be continuous through wall and ceiling openings and sleeves.

Insulation on all cold surfaces must be applied with a continuous, unbroken vapor seal. Hangers, supports, anchors, etc. that are secured directly to cold surfaces shall be adequately insulated and vapor sealed to prevent condensation.

Specified adhesives, mastics, and coatings shall be applied at the manufacturer’s recommended minimum coverage per gallon.

Edges of vapor barrier insulation at valve stems, instrument wells, unions, and other raw edges shall be sealed adequately to prevent moisture from penetrating the insulation.

APPENDIX B
CONTRACT AGREEMENT DRAFT

CONTRACTOR AGREEMENT

This Contractor Agreement (“Agreement”) is made this _____, 2025_ by and between **Grand Rapids Public Schools**, a Michigan general powers school district, organized and operated pursuant to the Michigan Revised School Code, whose address is 1331 Franklin SE, Grand Rapids, Michigan 49501-0117 (hereinafter referred to as the “District” or "Owner"), and _____, a Michigan Company, whose address is _____, (hereinafter referred to as “Contractor”), for _____ services in accordance with the terms and conditions herein.

RECITALS

WHEREAS, the District desires to obtain _____ services in accordance with the approved plans and specifications, the District’s budget, the relevant bond proposal, and as otherwise approved by the District ("Project");

WHEREAS, the District, by Request for Proposal dated _____, 2025_, including Addendum No. 1 dated _____, 2025_ ("RFP"), sought proposals for the Project;

WHEREAS, Contractor is an entity which has represented to have the personnel, expertise, training, capacity and qualifications to timely and satisfactorily perform the Project contemplated in the RFP, and has responded to the RFP with a proposal dated _____, 2025_ ("Response"); and

WHEREAS, the District and Contractor desire to enter into this Agreement to authorize and require the Contractor to perform the obligations identified in the RFP, Response, contract documents and any other duties identified herein.

NOW THEREFORE, in consideration of the mutual promises and benefits contained herein, the parties agree as follows:

SECTION 1 – INCORPORATION OF DOCUMENTS

1.1 The RFP and Response are incorporated herein by reference as if fully restated herein. In the event of any inconsistency or ambiguity within, between or among the RFP, the Response, the Project Specifications, the Project Manual, this Agreement or any other contract document (collectively, the “Contract Documents”), the provision that is more beneficial to the Owner (as determined in the Owner's sole discretion) shall be deemed to control.

SECTION 2 – DESCRIPTION OF SERVICES / RELATIONSHIP OF PARTIES

2.1 Contractor shall provide the services described in the documents identified in Section 1, as required by law, as may otherwise be subsequently agreed to by the parties in writing via amendment, and any related and incidental services necessary to properly and timely complete the Project (“Services”). .

2.2 Contractor agrees that the individuals assigned to provide Services under this Agreement, whether by Contractor directly or authorized subcontractors, consultants, or agents, will adhere to applicable professional standards and will perform all Services in a manner consistent with generally accepted proficiency and competency for the type and nature of work rendered.

2.3 Services shall be performed as expeditiously as is consistent with professional skill and care and the orderly progress of the Project. Contractor shall submit for the Owner’s approval a schedule for the performance of Services which shall not exceed time frames required by the Contract Documents except as such time frames may be properly extended therein.

2.4 In the performance of Services under this Agreement, Contractor (its agents, subcontractors and employees) shall be regarded at all times as performing services as an independent contractor of the District. Contractor shall be regarded, designated and considered to be the employer with respect to all individuals whom Contractor may select and assign to provide Services under this Agreement.

2.5 Contractor shall follow the highest standards of its profession in performing all Services under this Agreement. Contractor’s employees assigned to provide Services shall be fully certified, licensed and approved as necessary to lawfully perform the Services. Contractor and its employees shall at all times comply with applicable federal, state and local laws, rules, regulations and policies, including but not limited to the Revised School Code, the School Building Construction Act, the Iran Economic Sanctions Act, and applicable board policies of the Owner.

2.6 Contractor is expected to coordinate the timing, location, and performance of Services with the District designated representative and/or any other District administrator identified to the Contractor in writing. The intent of this paragraph is not to direct the Contractor's work, but only to ensure the efficient and smooth performance of same in light of the District's ongoing operations. The Contractor shall cooperate and coordinate with any other contractors working on the District's overall project to ensure a seamless and efficient installation of improvements.

2.7 In the performance of Services under this Agreement, Contractor (its agents, subcontractors and employees) shall be regarded at all times as performing services as an independent contractor of the District. Within the meaning of all applicable federal, state and local laws, including but not limited to, employment taxes, income taxes, labor relations acts, employment discrimination laws, minimum wage and overtime laws, and workers' compensation laws (collectively, the "Employment Laws"), Contractor is and shall be deemed to be the sole employer of all personnel used to provide services on behalf of Contractor pursuant to this Agreement (the "Contractor Personnel"), and its relationship with the Owner shall be deemed to be that of an independent contractor and not that principal and agent, servant, or employer and employee. As the employer of the Contractor Personnel, Contractor shall: (a) have the power to hire, discipline, recruit, train and terminate Contractor Personnel; (b) instruct the Contractor Personnel on when, where and how to perform their duties: (c) determine the amount of frequency of wage, benefit, salary, bonus and other payments to

Contractor Personnel; (d) determine and pay the amount, if any, of reimbursement for business and/or traveling expenses of Contractor Personnel; (e) pay and file with all appropriate governmental entities all necessary payroll information, taxes and deductions, including but not limited to, federal, state and local income taxes, social security taxes, and unemployment taxes; (f) comply with the Employment laws; and (g) pay any and all workers' compensation and other insurance costs and premiums applicable to employers.

2.8 The District's representative for the Project is James Williams, Director of Buildings and Grounds. The District's representative, and any other individual or entity authorized by the District's Board of Education, shall have the right to review and inspect the Contractor's services, work, records, documents, reports, insurance policies, estimates, memoranda, analyses, activities, and any other matter related to the Contractor's performance of Services. Any documents officially submitted by the Contractor related to this Project shall be reviewed and approved by the District's representative and any other individual or entity authorized by the District's Board of Education.

2.9 From the moment of creation and regardless of the stage of completion, the District shall be deemed the owner of any documents or instruments of service created by Contractor and used in the performance of Services.

SECTION 3 – FEES, INVOICE AND PAYMENT

3.1 In consideration of Services properly provided by Contractor under this Agreement, the District will pay to Contractor _____ Dollars ($_____), which amount is consistent with the Contractor's bid amount and any accepted alternates.

3.2 Invoices shall be submitted no more frequently than monthly and shall coincide with the value of work performed. The District will remit payment on undisputed invoices or undisputed portions of invoices within thirty (30) days of receiving the invoice, but in no event shall a payment be made if such payment will result in the Contractor receiving an amount that exceeds the value of services performed to date. Notwithstanding the foregoing, District shall have no obligation to make any payments until Contractor provides all insurances required by this Agreement.

3.3 Without regard to Section 3.2, the District shall be entitled to retain ten percent (10%) of any amounts paid until the Contractor has successfully and finally completed its Services.

SECTION 4 – INDEMNIFICATION AND INSURANCE

4.1 Contractor shall indemnify and hold the District (and its officers, board members, employees, and agents) harmless from and against all liabilities, damages, fines, penalties, demands, forfeitures, claims, suits, causes of action or any other liabilities or losses, including all costs of defense, settlement and prosecution along with attorney, expert and other professional fees, arising out of or related to any negligence, wrongful act or breach of this Agreement or the obligation of Contractor or any of its employees or others for whom it is responsible in connection with the performance or non-performance of the Agreement. Contractor's indemnification responsibility shall equal the full amount of its degree of fault.

4.2 Contractor agrees to procure and maintain insurance coverage in types and amounts required by the RFP, as set forth in its Response (including any provided certificate of insurance), or as required by law, whichever is greater. If not already provided, Contractor agrees to provide the District certificates of insurance evidencing such coverage prior to commencing any Services. Insurance shall be obtained and maintained from an insurance company licensed to sell insurance in the State of Michigan with an A+ A.M. Best rating, or equivalent. Insurance coverages shall not be reduced or eliminated without at least sixty (60) days prior written notice to the District.

4.3 Contractor's insurances shall be obtained (and provided to the District's representative) prior to the commencement of Services, and shall be maintained either: (a) if occurrence-based, for at least one year following final completion, and/or (b) if claims-made, for at least seven years following final completion. The District shall be identified as an additional insured on all applicable insurances. Contractor's insurance shall be primary and not contributory.

4.4 Contractor shall provide performance and payment bonds equal to 100% of the Contract Sum identified in Section 3 and otherwise in accordance with applicable laws, including but not necessarily limited to MCL 129.201, et seq.

SECTION 5 – EMPLOYEES AND SUBCONTRACTING

5.1 The District reserves the right to approve the identity of representatives and employees of the Contractor and any subcontractors. The District shall have the right to request removal of any employee of the Contractor or any subcontractor from the project at the District's direction, and Contractor will remove or relocate such individual(s) upon 2 weeks' notice, subject to Contractor's status as employer.

5.2 Contractor shall not use subcontractors without the District's prior written consent. If Contractor desires to use a subcontractor, it will notify the District in writing, including the name, scope of work, and any other information requested by the District. The Contractor will be fully responsible to the District for the acts and omissions of subcontractors and of all persons whether directly or indirectly employed by the Contractor. Nothing in this Agreement shall create any contractual relationship between any subcontractor and the District. The Contractor shall not assign, transfer, convey, or otherwise dispose of the Agreement, or any part thereof, or the Contractor's right, title, or interest in same without the prior written consent of the District. The Contractor shall not assign any of the monies due or to become due and payable under the Agreement without prior written consent of the District.

5.3 The Contractor shall not hire any District employee to perform Services without

SECTION 6 – NONDISCRIMINATION

6.1 Contractor shall not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, weight, or marital status and other

employment matters described by Title VII of the Civil Rights Act of 1964 (Pub. L. 88-352. Breach of this covenant may be regarded as a material breach of the agreement.

SECTION 7 – OWNER'S RIGHT TO CORRECT DEFICIENCIES

7.1 If the Contractor shall neglect to perform the work properly, or should it refuse to remedy any defects in the work due to inferior quality or workmanship or material, or should it in any manner fail to perform any provision of the Agreement, the District, after 7 days' notice to the Contractor, may correct such deficiencies at Contractor's cost and may deduct the cost thereof from any payment due the Contractor. The remedy described in this section is not exclusive and shall have no effect on the Owner's ability to seek recovery for, among others, breach of contract, breach of warranty, and/or performance bond claims.

SECTION 8 – TIME FOR PERFORMANCE

8.1 Time is of the essence of this Agreement. The Contractor acknowledges and agrees that the performance of Services shall commence on or before _____, 202_ and shall be finally and sufficiently completed on or before _____, 202_. For any alleged delay in performance caused by the District, the Contractor's sole remedy shall be an extension in the deadline for performance.

SECTION 9 – DISPUTE RESOLUTION

9.1 The parties shall first attempt to resolve disputes through non-binding mediation. Any claim or dispute not resolved by non-binding mediation shall be subject to litigation in accordance with Michigan law.

9.2 A demand for mediation may be filed along with a complaint in litigation, but the process of non-binding mediation shall proceed first (so long as permitted by the applicable court). Any demand for mediation filed prior to a complaint in litigation shall toll the statute of limitations for all applicable claims until the mediation process has been completed, successfully or unsuccessfully.

9.3 In the event of any mediation arising out of or relating to this Agreement, Owner reserves the right to require that the mediation hearing be conducted in the general area where the Owner's principal place of business is located. Any agreements reached in mediation shall be binding in accordance with law.

9.4 The Owner reserves the right in its discretion to require consolidation or joinder of any dispute arising out of or relating to this Agreement which another mediation or arbitration involving a person or entity not a party to this Agreement, in the event the Owner believes such consolidation or joinder is necessary in order to resolve a dispute or avoid duplication of time, expense or effort.

9.5 The Contractor shall include similar dispute resolution provisions in all agreements with subcontractors, sub-consultants, suppliers, or fabricators so retained, thereby providing for a consistent method of dispute resolution between the parties to those agreements.

9.6 As a condition precedent to any claim or cause of action brought by the Contractor against the District, the Contractor shall notify the District in writing of any contractual or other dispute within 21 days of becoming aware of same. The failure to timely provide such notice shall be an irrevocable waiver of any claim or cause of action. Claims and causes of action by the District shall be subject to the applicable statute of limitations under Michigan law, but in no event shall a claim by the District be deemed untimely if filed within six (6) years of final completion of the Services.

SECTION 10 – TAXES

10.1 The Contractor acknowledges that the District is a tax-exempt entity and any taxes incurred pursuant to performance of this Agreement, including but not necessarily limited to sales and use taxes, shall be the sole responsibility of Contractor.

SECTION 11 – TRAINING

11.1 The Contractor shall provide the following training services at no additional cost to the Owner:

SECTION 12 – SERVICE / MAINTENANCE

12.1 The Contractor shall provide the following service and maintenance at no additional cost to the Owner:

SECTION 13 – WARRANTIES

13.1 The Contractor shall provide the following warranties at no additional cost to the Owner:

13.2 In addition to, and not in substitution of, Section 13.1, the Contractor shall assign and forward to the Owner all applicable manufacturers' warranties for any equipment, software or materials relevant to the Project and Services.

SECTION 14 – TERMINATION

14.1 The Owner may terminate this Agreement upon seven (7) calendar days' prior written notice to the Contractor. The Contractor may terminate this Agreement for the Owner's failure to substantially perform its obligations under this Agreement, so long as written notice of such failure has been provided to Owner and Owner fails to cure such failure within thirty (30) days of receiving the notice. If the Agreement is terminated prior to completion of the Services, Contractor shall provide a final report based on the value of the Services reasonably and properly performed as of the date of termination, and the Owner shall make payment for all services properly performed prior to termination, but in no event shall such sum exceed the fee described in Section 3.1.

SECTION 15 – CONFIDENTIALITY

15.1 If Contractor receives information of the Owner that is "confidential" or "business proprietary," Contractor shall keep such information strictly confidential and shall not disclose it to any other person except to its employees, those who need to know the content of such information in order to perform services solely for this Project, or its consultants whose contracts include similar restrictions. The parties acknowledge that the Owner cannot provide similar

confidentiality protection due to the applicable of the Michigan Freedom of Information Act and the Michigan Open Meetings Act, among others.

SECTION 16 -- MISCELLANEOUS

16.1 Neither party shall assign this Agreement nor its rights and duties hereunder nor any interest herein without prior written consent from the other.

16.2 This Agreement, including all attachments and documents incorporated herein by reference, constitutes the entire agreement between the parties regarding its subject matter and supersedes any prior or contemporaneous understandings or agreements with respect to the services contemplated.

16.3 None of the terms and provisions of this Agreement may be modified, waived, or amended in any way except by written amendment, change order, or construction change directive.

16.4 Failure by either party at any time to require performance by the other party or to claim breach of any provision of this Agreement shall not be construed as a waiver of any subsequent breach nor affect the validity and operation of this Agreement, nor prejudice either party with regard to any subsequent action to enforce the terms of this Agreement.

16.5 This Agreement shall be interpreted and enforced under the laws of the State of Michigan.

16.6 If any provision of this Agreement should be invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions of this Agreement shall not in any way be affected, impaired or prejudiced thereby.

16.7 This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which constitute one and the same agreement.

16.8 Notwithstanding any provisions within the Contract Documents, nothing shall be deemed a waiver of any immunity granted to Owner by law or statute, including but not necessarily limited to, governmental immunity under MCL 691.1407.

16.9 Contractor shall not be entitled to additional compensation in the event it is necessary to extend the Project completion date because the Project is delayed due to conditions beyond the control of the Owner, such as strikes, weather, material shortages, site conditions, etc.

16.10 Contractor agrees to retain permanent records relating to the services performed for a period of at least six (6) years following submission of the construction documents, during which period the records will be made available to the Owner upon request.

16.11 The Effective Date of this Agreement shall be the date the last party identified below has executed this Agreement.

SECTION 17 – AUTHORIZATION

17.1 The Agreement has been duly authorized, executed and delivered by the parties and constitutes a legal, valid and binding obligation upon each of them, enforceable in accordance with its terms. Each person placing his/her signature below represents and warrants that he/she is the signatory duly authorized to execute this Agreement on behalf of the District or Contractor, as is respectively applicable.

GRAND RAPIDS PUBLIC SCHOOLS, _____,

By: By:
Its: Its:
Dated: Dated:

APPENDIX C
ADDITIONAL ABATEMENT SPECIFICATION INFORMATION

The disturbance or dislocation of asbestos-containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workers and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures, which must be followed.

Where in the performance of the work, the CONTRACTOR shall take appropriate continuous measures as necessary to protect building occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable Federal, State and local agencies.

5.3 STOP WORK

If the OWNER or Owner's CONSULTANT presents a written stop work order, immediately and automatically stop all work. Do not recommence work until authorized by Owner or Owner's CONSULTANT.

5.5 PROJECT COORDINATION

5.5.1 Project Superintendent

Provide a full-time Project Superintendent who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 CFR 1926.1101 for the CONTRACTOR and is the Contractor's Representative responsible for compliance with all applicable Federal, State and local regulations. This person must have completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures and have had a minimum of two (2) years on-the-job training. The Project Superintendent is to be accredited as an Asbestos Abatement Supervisor in accordance with the AHERA Regulation 40 CFR, Part 763, Subpart E, Appendix C. Project Superintendent is expected to be the same person throughout work. Notify and provide information to Owner on Project Superintendent replacement prior to switch of superintendents.

5.5.2 Duties of Project Superintendent

Coordination: Coordinate the work of all subcontractors and material suppliers.
Supervision: Supervise the activities of every phase of the asbestos abatement work taking place on the project.
Communication: Establish lines of authority and communication at the job site.
Permits: Obtain building and special permits required for construction.
Location: The project superintendent shall be present on the job at all times when work is being performed.
Regulations: Responsible for compliance with all applicable federal, state, and local regulations with regard to asbestos-containing materials.
Contact: On site point of contact for Owner and Owner’s Consultant on Asbestos Abatement related work.

PART 6 – INDUSTRIAL DEFINITIONS

Adequately wet: To sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

Aerosol: A system consisting of particles, solid or liquid, suspended in air.

Air Cell: Insulation normally used on pipes and ductwork that is comprised of corrugated cardboard which is frequently comprised of asbestos combined with cellulose or refractory binders.

Air Erosion: The passage of air over friable ACBM, which may result in the release of asbestos fibers.

Air Monitoring: The process of measuring the fiber content of a specific volume of air.

Amended Water: Water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one (1) ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with 5 gallons of water.

Asbestos: The asbestos-form varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection, both the asbestiform and non-asbestiform varieties of the above minerals, and any of these materials that have been chemically treated and/or altered, shall be considered as asbestos.

Asbestos Abatement means any of the following:
1. The wrecking or removal of structural members that contain friable asbestos-containing material;
2. The following practices intended to prevent the escape of asbestos fibers into the atmosphere:

a. Coating, binding, or resurfacing of walls, ceilings, pipes, or other structures for the purpose of minimizing friable asbestos containing material from becoming airborne;
b. Enclosing friable asbestos containing material to make it inaccessible;
c. Removing friable asbestos-containing material from any pipe, duct, boiler, tank, reactor, furnace, or other structural member.
d. Removing facility components that are asbestos-covered or asbestos containing.

Explanatory Note: These are the phases of asbestos abatement in chronological order:
Pre-Abatement: Means the time period covering the commencement of construction of the containments and all other preparations (including any necessary pre-cleaning) taking place prior to the actual abatement of ACM. This abatement phase does not include the transport of materials and equipment to the job site. The transport of materials and equipment to the job site is the only activity that is allowed by an uncertified person.

Active Abatement: Means the time period beginning with the completion of the pre-abatement phase and ending when the area has passed final air sampling and the critical barriers have been completely removed. The active abatement phase includes the actual "gross" removal of ACM and all aspects of "final cleaning" that are conducted prior to the areas being pronounced ready for a final visual inspection. The final visual inspection, final clearance air monitoring, and the removal of critical barriers are the last activities included in the active abatement phase.
Post-Abatement: Means any point in time following the termination of the active abatement phase.

Asbestos Abatement Contractor: Any person hired to conduct asbestos abatement.

Asbestos-Containing Building Material (ACBM): Surfacing asbestos-containing material, thermal system insulation asbestos-containing material, or miscellaneous asbestos-containing material that is found in or on interior structural members or other parts of a building.

Asbestos-Containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.

Asbestos-Containing Waste Material (ACWM): Any material that is or is suspected of being or any material contaminated with an asbestos-containing material, which is to be removed from a work area for disposal.

Authorized Visitor: The OWNER, the Owner's Consultant, testing lab personnel, or a representative of any federal, state and local regulatory or other agency having authority over the project.

Barrier: Any surface that seals off the work area to inhibit the movement of fibers.

Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9-inches.

Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Clean Room: An uncontaminated area or room, which is a part of the worker decontamination enclosure system with provisions for storage of workers' street clothes and clean protective equipment.
Critical Barrier: A single layer of 6-mil or greater polyethylene sheeting or an equivalent airtight barrier installed initially over all doors, windows, ventilation openings, drains, wall penetrations, etc., as an additional measure to prevent contaminated air from escaping the work area.

Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.

Cutting: To penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

Decontamination enclosure system: A series of three (minimum) connected rooms, separated from the work area and from each other by air locks or curtained doorways, for the decontamination of workers and equipment.

Demolition: The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Duct Tape: Provide duct tape in 2-inch or 3-inch widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.

Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent release of fibers. Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix. Penetrating encapsulant: an encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer. Removal encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather than for in situ encapsulation.

Encapsulation: The application of a liquid material to asbestos containing material which controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

Enclosure: The construction of an airtight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

Equipment room: A contaminated area or room, which is part of the worker decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

Fiber release episode: Any uncontrolled or unintentional disturbance of ACM resulting in visible emissions.

Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

Final cleaning: The cleaning of all dust and debris from the work areas near the end of the active abatement phase, immediately prior to the final visual inspection.

Fixed object: A piece of equipment or furniture in the work area, which cannot be readily removed from the work area.

Friable: Any material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously non-friable material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

Friable Asbestos-Containing Material: Any material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and that contains more than one percent asbestos by weight. The term includes non-friable forms of asbestos after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

Glovebag: A sack (typically constructed of 6-mil transparent polyethylene or polyvinyl chloride plastic) with two inward projecting long-sleeved gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.

Grinding: To reduce to powder or small fragments and includes mechanical chipping or drilling.

HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.

HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air (absolute) filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

High-Efficiency Filter: A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

Negative Pressure Ventilation System: A local exhaust system, utilizing HEPA filtration capable of maintaining a negative pressure inside the work area and a constant air flow from adjacent areas into the work area and exhausting that air outside the work area.

Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

Pre-cleaning: The cleaning of the work area of visible dust and debris prior to active abatement.
Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0-mils thick as indicated, clear, frosted, or black as indicated.

Project Design: The preparation of plans, specifications, project procedures, containment design/placement, descriptions of engineering controls, and shop drawings for an asbestos abatement project or response action. It shall include an accurate and detailed scope of work, quantities of material to be removed, removal methods, and air exchange calculations. Drawings shall include locations of ACM to be abated, location of the decontamination unit, waste load out, negative air units, air intake and exhaust, and emergency exits when applicable.

Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Regulated Asbestos-Containing Material (RACM): Any of the following: (a) Friable asbestos material, (b) Category 1 nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by forces expected to act on the material in the course of demolition or renovation operations.

Category I Nonfriable Asbestos-Containing Materials (ACM): Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos as determined using Polarized Light Microscopy.

Category II Nonfriable ACM: Any material, excluding Category I nonfriable ACM, containing more than one percent asbestos as determined using Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

Shower room: A room between the clean room and the equipment room in the worker decontamination enclosure suitably arranged for complete showering during decontamination.

Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick to sheet polyethylene.

Staging area: The holding area or an area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

TEM: An analytical technique used for the definitive identification of asbestos.

Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Waste load-out area: A specially constructed airlock system utilized as a short-term storage area for bagged or barreled waste and as a port for transferring waste to the transport vehicle. This area is separate from the decontamination unit.

Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.

Wetting Materials: For wetting prior to disturbance of asbestos-containing material, use either amended water or a removal encapsulant.

Work Area: The area where asbestos related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29CFR 1926.

PART 7 – EQUIPMENT

Contractor shall furnish all of the materials, tools, equipment and all other necessary additional services needed to complete the asbestos removal and disposal.

PART 8 – RESPIRATORY PROTECTION

Respiratory Protection Program: Comply with ANSI Z88.2 - 1980 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.
Respiratory protection is required at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental, or at the direction of the owner's CONSULTANT.

Require that a respirator be worn by anyone in a work area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Part 19 of this Specification.

Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used be half face and air purifying respirators with high efficiency filters.

Do not allow the use of single use, disposable, or quarter face respirators for any purpose.

8.1 Types of Air Purifying Respirators

Respirator Bodies: Provide half face or full-face type respirators. Equip full-face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.

Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2 (1980). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

Negative pressure - half or full facemask: Supply a sufficient quantity of respirator filters approved for asbestos so that workers can change filters during the workday. Require that respirators be wet-rinsed and filters discarded each time a worker leaves the work area. Require that new filters be installed each time a worker re-enters the work area. Store respirators and filters at the job site in the Changing Room and protect totally from exposure to asbestos prior to their use.

Powered air purifying - half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced according to the subjectivity of the employee or the written respiratory program of the CONTRACTOR. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords to be washed each time a worker leaves the work area. Caution should be used to avoid shorting battery pack during washing.

8.2 Types of Supplied Air Respirator Systems

Provide equipment capable of producing air of the quality and volume required by the above referenced standards applied to the job site conditions and crew size. Comply with provisions of this Specification if more stringent than the governing standard.

Face Piece and Hose: Provide full-face piece and hose by same manufacturer that has been certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure face piece.

Auxiliary backup system: In atmospheres, which contain sufficient oxygen (greater than or equal to 19.5% oxygen), provide a pressure-demand full-face piece supplied air respirator equipped with an emergency backup HEPA filter.

Escape air supply: In atmospheres, which are oxygen deficient (less than 19.5% oxygen), provide a pressure-demand full-face piece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA), which automatically maintains an uninterrupted air, supply in pressure demand mode with a positive pressure face piece.

Backup air supply: Provide a reservoir of compressed air located outside the work area which will automatically maintain a continuous uninterruptible source of air automatically available to each connected face piece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss, or other failure.

Provide sufficient capacity in the backup air supply to allow a minimum escape time of one-half hour times the number of connections available to the work area. Air requirement at each connection is the air requirement of the respirators in use, plus the air requirement of an average sized adult male engaged in moderately strenuous activity.

Warning device: Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible above the noise level produced by equipment and work procedures in use, in all parts of the work area and at the compressor. Connect alarm to warn of:
Compressor shut down or other fault requiring use of backup air supply.
Carbon Monoxide (CO) levels in excess of 5 PPM/V.

Carbon Monoxide (CO) Monitor: Continuously monitor and record on a strip chart recorder Carbon Monoxide (CO) levels. Place monitors in the airline between compressor and backup air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices".

Compressor Shut Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:
Carbon Monoxide (CO) concentrations exceed 5 PPM/V in the line between the filter bank and backup air supply.
Compressor temperature exceeds normal operating range.

Compressor Motor: Provide a compressor driven by an electric motor. Do not use a gas or diesel engine to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.

Compressor Location: Locate compressor outside of building in location that will not impede access to the building, and that will not cause a nuisance by virtue of noise or fumes to occupied portions of the building.

Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from motors or buildings.

After Cooler: Provide an after cooler at entry to filter system, which is capable of reducing temperatures to outside ambient air temperatures.

Self-Contained Breathing Apparatus (SCBA): Configure system to permit the recharging of 1/2-hour 2260-PSI SCBA cylinders.

8.3 Fit Testing

Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which he/she has been trained and fit.

On a Weekly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

Upon Each Wearing: Require that each time an air-purifying respirator is put on, it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

8.4 Type of Respiratory Protection Required

Provide Respiratory Protection as indicated in OSHA 29 CFR 1910 and 1926. Where paragraph below does not apply, determine the proper level of protection by dividing the expected or actual airborne fiber count in the work area by the "protection factors" given below. The level of respiratory protection that supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the permissible exposure limit (PEL) is the minimum level of protection allowed.

8.5 Permissible Exposure Limits (PEL)

8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed the following TWA listed below:

Fibers: For purposes of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), 7400 procedures, or asbestos fibers of any size as counted using a transmission electron microscope.

8-Hour Time Weighted Average (TWA): 0.1-fibers/cubic centimeter.

30-Minute Short-term Exposure Limit (STEL): 1.0 fibers/cubic centimeter.

PART 9 - CODES AND REGULATIONS

General Applicability of Codes, Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect as if copied directly into the contract documents, or as if published copies are bound herewith.

Whenever during the course of this contract the Contractor, his subcontractor or his employees encounter asbestos, the Contractor shall handle, remove, and dispose of the asbestos strictly in accordance with the rules, guidelines, and regulations specified by EPA, OSHA, the Michigan Department of Public Health, the Michigan Department of Environmental Quality, and all other applicable regulatory agencies. The most recent edition or revision of any relevant regulation, standard, document or code shall be controlling. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall be utilized.

CONTRACTOR Responsibility: The CONTRACTOR shall assume full responsibility and liability for the compliance with all applicable federal, state, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The CONTRACTOR is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations, ordinances, laws, or rules. The CONTRACTOR shall hold the OWNER and Owner's CONSULTANT harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulation on the part of CONTRACTOR, contractor's employees, or subcontractors.

Federal Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include, but are not limited to, the following:

U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules Title 29, Part 1910, Section 1001 and Part 1926, Section 58 of the Code of Federal Regulations
Respiratory Protection Title 29, Part 1910, Section 134 of the Code of Federal Regulations
Construction Industry Title 29, Part 1926, of the Code of Federal Regulations
Access to Employee Exposure and Medical Records Title 29, Part 1910, Section 2 of the Code of Federal Regulations
Hazard Communication Title 29, Part 1910, Section 1200 of the Code of Federal Regulations
Specifications for Accident Prevention Signs and Tags Title 29, Part 1910, Section 145 of the Code of Federal Regulations
Occupational Health & Environmental Controls Title 29, Part 1926.1101Code of Federal Regulations

U.S. Environmental Protection Agency (EPA) including, but not limited to:
Worker Protection Rule 40 CFR Part 763, Subpart GCPTS 62044, FRL 2843-9 Federal Register, Vol 50 No 134, July 12, 1985 P28530-28540
Regulation for Asbestos Title 40, Part 61, Sub-part A of the Code of Federal Regulations
National Emission Standard for Asbestos Title 40, Part 61, Sub-part M (Revised Sub-part B) of the Code of Federal Regulations
40 CFR, Part 763, Subpart E
40 CFR, Part 61 Subpart M

U.S. Department of Transportation (DOT) including but not limited to:
Hazardous Substances: Final Rule Regulation, 49 CFR, Parts 171 and 172
State and Local Requirements: Abide by all local requirements that govern asbestos abatement work or hauling and disposal of asbestos waste materials

State Of Michigan Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include, but are not limited to, the following:
State of Michigan in accordance with Act 135 P.A. 1986 (Asbestos Abatement Licensing Act) and any subsequent State of Michigan Acts
All applicable State of Michigan Departments including EGLE and DELEG standards, rules, laws, and or ordinances.
All applicable Department of Environmental Quality (MDEQ) standards, rules, laws, and or ordinances.

9.3 Submittals

Before Start of Work: Submittals (as requested from Owner) shall be provided to the Owner's CONSULTANT for review (if requested). No work shall begin until these submittals are returned with Owner's CONSULTANT action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

State and Local Regulations: Submit copies of codes and regulations applicable to the work.

PART 10– TEMPORARY FACILITIES

10.1 Description of Requirements

General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work. Arrange with owner and utility companies for temporary arrangements in regards to the supply of water and electricity for the abatement project.

Use qualified tradesman for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the work.

10.2 Products

Materials and Equipment: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use by compliance with appropriate standards.

10.3 Water Service

Temporary Water Service Connection: All connections to the Owner's water system shall include backflow protection.

Hot Water Heater: Provide hot water heater to supply hot water for the Decontamination Unit shower located within the Decontamination Unit sub panel, sufficient for persons working plus five people.

10.4 Electrical Service

Ground Fault Protection: Provide receptacle outlets equipped with ground-fault circuit interrupters. Test GFCI outlets with a GFCI tester.

Electrical Power Cords: Use only grounded extension cords.

Lamps and Light Fixtures: Provide general service incandescent lamps of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures where fixtures are exposed to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

10.5 Temporary Heat

Heating Units: Provide temporary heating units if required.

10.6 Sanitary Toilet

Toilets: If available, use of the Owner's existing toilet facilities, as indicated, will be permitted, so long as these facilities are properly cleaned and maintained in a condition acceptable to the OWNER. At substantial completion, restore these facilities to the condition prevalent at the time of initial use. Permission from the OWNER must be obtained, and all provisions of these Specifications regarding leaving the work area are met.

Self Contained Toilet Units: If existing toilet facilities are inadequate, provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material. Maintain in condition acceptable to Owner.

10.7 First Aid

First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

10.8 Fire Extinguishers

Fire Extinguishers: Comply with the applicable recommendation of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one (1) extinguisher in each Work Area in Equipment Room and one (1) outside Work Area in the Clean Room. Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations, provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.

10.9 Scaffolding

Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type, or cantilever type. The type, erection, and use of all scaffolding shall comply with all applicable OSHA provisions.
Equip rungs of all metal ladders, etc. with an abrasive non-slip surface.
Provide a non-skid surface on all scaffold surfaces subject to foot traffic.

PART 11 – NEGATIVE PRESSURE SYSTEM

11.1 Quality Assurance

Monitor pressure differential across Decontamination Unit with a differential pressure meter to demonstrate a pressure difference of at least 0.02 inches of water. Calibrate the machine on a daily basis. Give explanation where reading falls below 0.02 inches of water. Readings shall be made available to the Owner’s Consultant as necessary. Twenty-four (24) hour documentation is required.

11.2 Negative Air Machines

General: Supply the required number of asbestos air filtration (HEPA) units to the site in accordance with these specifications.

11.3 Auxiliary Generator

Auxiliary Generator: Provide a gasoline powered, self-starting generator with a capacity adequate to power a minimum of 50% of the negative air machines in operation at any time during the work.
11.4 Pressure Differential

Provide a fully operational negative air system within the work area maintaining continuously a pressure differential across work area enclosures of -0.020 inches of water. Demonstrate to the Owner's CONSULTANT the pressure differential by use of a pressure differential meter or a manometer before disturbance of any asbestos containing materials. At all times the differential of the work area to the clean area shall be, at a minimum, -0.020 inches of water and shall be recorded using a strip chart recorder or its equivalent. In addition, smoke tubes shall be readily available on the outside of containment barriers at all times so that airflow direction may be determined. At all times airflow direction shall be from the exterior of the containment barriers into the interior of

the containment barriers. If at any time the pressure differential falls below –0.020 inches of water, work shall stop until negative pressure is above –0.020 inches of water.

11.5 Preparation of the Work Area

Determining the Ventilation Requirements: Provide fully operational negative pressure systems supplying a minimum of one (1) air change every 15 minutes. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total ventilation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by the air change rate.

Ventilation Required (CFM) = Volume of work area (cu. ft.) /15 min.

Determine Number of Units needed to achieve 15-minute change rate by dividing the ventilation requirement (CFM) above by capacity of exhaust unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machines labeled operating characteristics.

Number of Units Needed = Ventilation Requirement (CFM)/ Capacity of Unit with Loaded Filters (CFM)

Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

Location of Exhaust Units: Locate exhaust unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses work area as much as possible. This may be accomplished by positioning the exhaust unit(s) at a maximum distance from the worker access opening or other makeup air sources.

Place the end of unit(s) or its exhaust duct through an opening in the plastic barrier or wall covering. The plastic around the unit or duct shall then be sealed with tape.

Vent to Outside of Building unless authorized by the Owner's CONSULTANT.

11.6 Use of the Negative Static Pressure System

General: A dedicated minimum 115V-20A circuit shall service each unit with overload device tied into an existing building electrical panel which has sufficient spare capacity to accommodate the load of all negative pressure units connected. Dedication of an existing circuit may be accomplished by shutting down existing loads on the circuit.
Testing the System: Test negative pressure system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the exhaust unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of negative pressure system to Owner's CONSULTANT.

Demonstrate Operation of the negative pressure system to the Owner's CONSULTANT will include, but not be limited to, the following:
Plastic barriers and sheeting move lightly in toward work area
Curtain of decontamination units move lightly in toward work area
There is a noticeable movement of air through the decontamination unit. Use smoke tube to demonstrate air movement from Clean Room to Shower Room, from Shower Room to Equipment Room, and from Equipment Room to Work Area
Use smoke tubes to demonstrate a positive motion of air across all areas in which work is to be performed
Use a differential pressure meter or manometer to demonstrate a pressure difference of at least 0.02 inches of water across every barrier separating the Work Area from the balance of the building or outside.

Modify the Negative Static Pressure System as necessary to successfully demonstrate the above.

Use of System During Abatement Operations: Start exhaust units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant negative pressure until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.

Start abatement work at a location farthest from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and exhaust units are operating again.

At completion of abatement work, allow exhaust units to run to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units will be required to run until clearance by the Owner's CONSULTANT is given.

Dismantling the System: When a final inspection and the results of final air tests indicate that the area has been decontaminated, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

PART 12 – TEMPORARY ENCLOSURES

12.1 Enclosure Requirements

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick as indicated, clear, frosted, or black as indicated:

Fire-resistant Polyethylene Sheet: To be used in areas where potential for fire exists. Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mils thick as indicated, frosted or black as indicated.

Spray Plastic: Provide spray plastic in aerosol cans or premixed for spray application, which is formulated to adhere gently to surfaces and remove cleanly by peeling off at the completion of the work.

Duct Tape: Provide duct tape in 2-inch or 3-inch widths with an adhesive that is formulated to aggressively stick to sheet polyethylene.

Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick to sheet polyethylene.
Work Area: Is the location where asbestos-abatement work occurs. It is a variable of the extent of work of the contract. It may be a portion of a room, a single room, or a complex of rooms. A "work area" is considered contaminated during the work, and must be isolated from the balance of the building, and decontaminated at the completion of the asbestos-control work.

Negative pressure air filtration units equipped with HEPA filters shall be operated continuously from the time of barrier construction through the time that acceptable final air clearance monitoring results are obtained. These units shall exhaust filtered air to the outside of the building when the length of exhaust duct required to do so does not overburden the negative air units.

Completely isolate the work area from other parts of the building to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the work area(s) become contaminated with asbestos-containing dust or debris because of the work, clean those areas in accordance with the proper procedures. Perform all such required cleaning or decontamination at no additional cost to OWNER.

Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated before erection of plastic sheeting temporary enclosure.

Remove all uncontaminated removable furniture, equipment, and/or supplies from the work area before commencing work, or completely cover with two (2) layers of 6-mil polyethylene sheeting securely taped in place with duct tape. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached.

Disable Ventilating Systems or any other system bringing air into or out of the work area. Disable system by disconnecting wires, removing circuit breakers, by lockable switch or other positive means that will prevent accidental premature restarting of equipment.

12.2 Control Access

Permit Access to the work area only through the Decontamination Unit. All other means of access shall be closed off and sealed and warning signs displayed on the clean side of the sealed access.

Physical Barrier: Where the area adjacent to the work area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with nominal 2-inch by 4-inch wood or metal studs 16-inch on center, securely anchored to prevent movement, covered with minimum 1/4-inch thick hardboard, 1/2-inch gypsum wall board, or 1/2-inch plywood.

Provide Warning Signs at each visual and physical barrier.

12.3 Critical Barriers

Completely separate the work area from other portions of the building and the outside by sheet plastic barriers at least 6-mil in thickness, or by sealing with duct tape.

Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the work area with duct tape alone or with polyethylene sheeting at least 6-mil in thickness, taped securely in place with duct tape. Maintain seal until all work, including Project Decontamination, is completed. Take care in sealing off lighting fixtures to avoid melting or burning of sheeting.

12.4 Isolation of Work Area

Pre-clean all contaminated furniture, equipment, and/or supplies with a HEPA filtered vacuum cleaner or by wet cleaning prior to being moved or covered. All equipment, furniture, etc. is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or by the Owner's CONSULTANT.

Pre-clean all surfaces in work area with a HEPA filtered vacuum or by wet wiping prior to the installation of any sheet plastic. The owner's CONSULTANT is to inspect pre-cleaning before CONTRACTOR seals area with 6-mil polyethylene sheeting.

12.5 Wall and Floor Covering

If required, walls shall be covered with two-layers of polyethylene sheeting, overlapping in alternate layers with three-layers of polyethylene sheeting covering the floor as follows:
Use fire resistant polyethylene sheeting if potential for fire hazard exists
Floors shall be covered with three-layers of 6-mil (minimum) polyethylene sheeting
Polyethylene sheeting shall be sized to minimize seams. If the floor area necessitates seams, those on successive layers of sheeting shall be sufficiently spaced to reduce the potential for water to penetrate to the flooring material. Seams shall not be located at wall/floor joints
Floor sheeting shall extend, at minimum, 12-inches up the side walls of the work area
Walls shall be covered with a minimum of two-layers of 4-mil polyethylene sheeting. Where polyethylene sheeting must remain attached to porous wall surfaces for more than 48 hours, furring strips (or the equivalent) shall be used in addition to duct tape and/or spray glue to secure the wall plastic in place
Polyethylene for walls shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least 6-feet where possible
Polyethylene shall overlap floor sheeting by a minimum of 24-inches beyond the wall/floor joint to provide a better seal against water damage and to enhance the negative pressure strategy
Where construction of barrier wall frames is required, 2-inch by 4-inch studs shall be on 24-inch centers and covered with two (2) layers of 6-mil fire resistant polyethylene sheeting attached to the framing. If the attachment medium penetrates the sheeting, the penetration shall be sealed with duct tape.

12.6 Extension of Work Area

Extension of Work Area: If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add the affected area to the work area, and enclose it as required by this Specification.

12.7 Secondary Barrier

Secondary layer of plastic is recommended as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work.

PART 13 – REMOVAL PROCEDURES

13.1 Description of the Work

Minor Work: Use provisions of this section when minor work is to be performed on asbestos-containing materials.

Work done under this section must receive prior approval from the Owner's CONSULTANT.
Procedures to remove asbestos-containing materials must conform to 29 CFR 1926.1101. Alternative methods under this section are allowed when full asbestos control procedures are not feasible.
Comply with Part 12 - Temporary Enclosures of this Specification if the quantities of asbestos-containing materials are excessive, or if airborne fiber counts generated by the work exceed 0.1 fibers per cubic centimeter in the breathing zone of the person performing the work.

Disturbance of Asbestos-Containing Materials: Use provisions of this section when the work involves disturbance of, but not removal of, small areas of asbestos-containing materials.

13.2 Submittals

Before Start of Work, submit the required submittals found in Part 1.5 of this document and following to the Owner's CONSULTANT for review. Do not begin work until these submittals are returned with the Owner's CONSULTANT approval indicating that the submittal is returned for unrestricted use.
Historic Airborne Fiber Data (if requested): Submit airborne asbestos fiber count data from an independent air monitoring firm to demonstrate the ability to perform work of this section while maintaining an airborne fiber count below 0.1 fibers per cubic centimeter in the breathing zone of the individual performing the work. Include the following data for each procedure required by the work:
Date of measurements; operations monitored; sampling and analytical methods used and evidence of their accuracy; and number, duration, and results of samples taken.

Glove bags (if requested): Submit product data.

Mini-enclosure (if requested): Provide shop drawing of mini-enclosure arrangement to be used.

13.3 Products

13.3.1 Sheet Plastic

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mil thick as indicated, clear, frosted, or black as indicated.

Flame Resistant Polyethylene Sheet: Where needed, provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.

Reinforced Polyethylene Sheet: Where plastic sheet constitutes the only barrier between the Work Area and the building exterior, provide translucent, nylon reinforced or woven polyethylene, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted or black as indicated.

13.4 Miscellaneous Materials

Duct Tape: Provide duct tape in two-inch or three-inch widths as indicated, with an adhesive, which is formulated to stick aggressively to sheet polyethylene.

Spray Cement: Provide spray adhesive in aerosol cans, which is specifically formulated to stick to sheet polyethylene.

Wetting Materials: For wetting prior to disturbance of asbestos-containing materials use either amended water or a removal encapsulant:

Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a solution of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with 5 gallons of water. Airless sprayers shall be used when applying amended water or encapsulant to asbestos containing materials.

Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of asbestos-containing material. Use a material which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a solution of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with 5 gallons of water.

Glove Bag: Provide minimum 6-mil polyethylene, polyvinyl chloride or equivalent plastic sack, with two sealed inward projecting long sleeved gloves or mittens, preprinted with same warning notice as a disposal bag, equipped with a pouch for storage of tools, with designated location for wand or HEPA vacuum wand, and sufficient capacity to hold removed materials and permit sealing as specified.

Garden Sprayer: For glove bag use provide a hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or spray of liquid under pressure.

13.5 Worker Protection

Provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

13.6 Glove Bag

The glove bag technique shall be used for the removal of pipe insulation. It shall consist of a specially designed 6 to 12 mil bag fitted with long sleeved gloves, a tool pouch, a small opening for water, and a small opening for a HEPA vacuum hose. It shall be used for removal of pipe insulation following the "single use" only technique - one bag to one spot of asbestos. The bag shall not be moved along the pipe. The OWNER'S CONSULTANT'S Certified Industrial Hygienist and OWNER'S CONSULTANT'S representative is to approve all glove bags proposed for use, before use on the job.

Generally, two persons shall be required to perform removal. Removal with a glove bag shall never be done on hot pipes because the heat can cause the bag to melt.
Remove asbestos-containing material inside a glove bag according to the following procedure:
The amended water shall be mixed according to the manufacturer's instructions.
Employees involved with the removal shall don appropriate respiratory protection and protective clothing.

Inspect pipe where the work will be performed prior to removal. If the insulation is damaged in locations that cannot be handled inside the glove bag, these areas shall be wrapped in polyethylene and secured with duct tape.
One layer of duct tape shall be placed around the pipe at each location where the ends of the glove bag will be.
The top and sides of the glove bag shall be slit open to accommodate the pipe.
The required tools shall be placed into the pouch located inside the glove bag. This will usually include: bone saw, utility knife, rags, scrub brush, wire cutters, tin snips, steel wool pad, and pre-wetted cloth.
Wet cloths shall be precut into doughnut-shape with the inside diameter approximately 1/2 inch smaller than the diameter of the pipe and the outer diameter about three inches larger than the diameter of the pipe's insulation. Then a slit shall be cut in each of the two doughnuts so that they can be slipped around the pipe. Saturate with encapsulant and place in a separate plastic bag inside glove bag to be used later.
The glove bag shall be placed around the pipe and the plastic edges sealed with duct tape.
The bag shall be filled with smoke (using a smoke tube and aspirator bulb), the water hose port shall be sealed off, and gently squeeze the glove bag from top to bottom. If any leaks exist, the smoke will exit through the leaks. Repair any leaks in the glove bag with duct tape. Retest with smoke as necessary. The smoke leak test is recommended, but other methods will be considered but shall be submitted to the OWNER'S CONSULTANT'S representative for approval before use.
The CONTRACTOR is cautioned that some glove bags have a ready-made hose port at midpoint or lower on the bag. If this is the case, the CONTRACTOR shall not use that port, but carefully seal it off with duct tape. Next, cut another port of equal size near the top of the bag for the water wand use and insert the wand of the garden sprayer through the hose port and tape the plastic tightly around the wand.
One person shall place his/her hands into the long sleeved gloves, while the second person directs the garden sprayer at the work.
Thoroughly wet material to be worked on with amended water or penetrating encapsulant and allow soaking in. Wet adequately to penetrate and soak material through to substrate.
A flexible cable saw or bone saw, may be used to cut through the asbestos at each end of the section to be removed. A bone saw is a serrated, heavy gauge wire with ring-type handles at each end. While cutting, the asbestos shall be kept thoroughly soaked with amended water.
The section of insulation shall then be slit from end to end using a utility knife. The slit shall be made along the bottom of the pipe and continuously wetted.
The tools shall be rinsed with water inside the glove bag and placed back into the pouch.
The insulation shall then be lifted off the pipe and lowered carefully to the bottom of the glove bag.
Using a brush, wool pad, rags, and water, the pipe shall be cleaned of remaining residue.
The doughnut-shaped cloths shall be placed over the exposed ends of the insulation remaining on the pipe.
Clean, re-usable tools may be removed from pouch, depending upon type of glove bag. Place tools on glove inside the bag. Pull glove out of bag. Twist and seal the glove on the sleeve portion. Cut the glove sleeve through the twisted/taped section. Cover ends with duct tape. Tool pouch with the tools shall be placed in a bucket of water, opened underwater, and tools cleaned and dried. Discard rags as asbestos waste and filter water to 5 microns.
The water wand shall be removed from the bag and the nozzle of the HEPA vacuum attached. Workers shall briefly operate the vacuum to collapse the bag.
The bottom part of the bag shall be twisted and secured with duct tape.
The hose shall be removed and the opening sealed.
A six (6)- mil disposal bag shall then be slipped over the glove bag, the glove bag removed from the pipe, and folded down into the disposal bag.
The disposable clothing shall be removed and placed into the disposal bag.
Collapse the bag with a HEPA vacuum twist top of bag, seal with at least three (3) wraps of duct tape, bend over and seal again with at least three (3) wraps of duct tape.
The exterior of the respirator shall be wiped with a damp rag and the workers may leave the area. Respirator filters shall be disposed of as asbestos waste.
Personal air monitoring shall be conducted with glove bag projects. Area air monitoring shall be performed during and after glove bag work. Sample results of less than 0.01 fibers per cubic centimeter (f/cc) shall assure the area is cleared.
After the encapsulant on the doughnut-shaped cloths sets, another coat of encapsulant shall be brushed on to completely seal the exposed ends of the insulation.

NOTE: The procedure outlined is a known and proven procedure. Other alternative methods and procedures may be acceptable, but only with approval by the OWNER'S CONSULTANT and/or OWNER'S CONSULTANT representative.

13.7 Mini-Enclosures

A Mini-Enclosure consists of a small Work Room with an attached separate Change Room. Worker decontamination requires a remote personnel decontamination unit.
Sequence of Work: Before beginning work of this sub-section, complete the following:
Isolate the Area: Construction of a personnel decontamination unit in accordance with Part 14, Decontamination Units, of this Specification.
Work Room: Construct Work Room in the same manner as a Primary Barrier fabricated from 6-mil sheet plastic. Arrange so that Primary Barrier provides both a Critical and Primary Barrier. Line walls and floor of Work Room with a continuous Secondary Barrier.
Change Room: Provide an approximately 3-foot by 3-foot Change Room, with additional space as required for storage, attached to each Work Room. Fabricate Change Room from 6-mil sheet plastic in the same manner as a Primary Barrier. Locate so that access to Work Area is through Change Room.

Step Off Area: Cover floor in front of entry to Change Room with one layer of 6-mil sheet plastic. Securely anchor sheet plastic to prevent slipping.
Flapped Door Construction: Provide flapped door as entry to Change Room and entry from Change Room to Work Room. Fabricate each flapped door from overlapping contacting layers of sheet plastic.

Fasten each layer on the top and one side. Each flap is to be three-inches (3") longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side from duct tape on inside and outside of door.

Complete requirements of the following:
Part 17 of this Specification – Worker Protection.
Part 8 of this Specification – Respiratory Protection.
Part 11 of this Specification, – Negative Pressure System: HEPA filtered vacuum cleaner with vacuum in space outside Mini-Enclosure may be used for compliance with this section. Provide a minimum of 8 air changes per hour in the Work Room.

Entry to Work Room: Require that any time a worker enter the Work Room the following procedure is followed.
Outside of Change Room, remove all street clothes and don clean coveralls and respirator. A swimsuit or second disposable suit may be worn beneath outer coveralls.
Enter Change Room, be sure that entry is completely closed.
Enter Work Room, be sure that entry is completely closed.

Worker Decontamination: Require that any time a worker leaves the mini-enclosure the following procedure be followed:
Maintain a bucket of clean potable water in the Work Area. Do not amend with a wetting agent.
Remove contaminated suit inside the Work Area. Leave respirator in place.
Wash hands, face, and surface of respirator with water and wet paper towels. Use caution to avoid breaking seal between respirator face piece and face.
Proceed with respirator in place to Change Room.
Be sure that entry to Work Area is completely closed.
In Change Room, don clean disposable suit leaving respirator in place.
Exit Change Room be sure that entry to Change Room is completely closed. Proceed to next Mini-Enclosure, or a remote shower.
At end of workday, decontaminate fully in accordance with procedures in appropriate Specification section describing Worker Protection.

Material Decontamination: Require that the following procedure be used in removing equipment and bagged debris from the Work Room:
Three workers are required. One in the Work Room, one in the Change Room, and one on Step Off Area.
Equipment and bagged debris are to be removed from the Mini-Enclosure in separate operations.
Worker in Work Room cleans equipment and bagged debris and hands one piece of equipment or one bag of debris at a time to worker in Change Room.
Worker in Change Room wet cleans each piece of equipment or bag and stores them in Change Room. Equipment is sealed completely in 6-mil sheet plastic in the Change Room.
When the amount of stored material in the Change Room becomes large enough that the worker cannot clean incoming material without contacting previously cleaned material, the door between the Work and Clean Room is closed.
The worker in the Changing Room then passes each item into a new disposal bag held open in the doorway between the Changing Room and Step Off Area by the worker on the Step Off Area. The worker on the Step Off Area places each bag in a sealed cart for transport to the load out area. No bags are to be stored outside of the Mini-Enclosure.
All bags are to be transported through the building in clean, sealed containers that have never been in an asbestos Work Area, Mini-Enclosure, or Decontamination Unit.

Mini-Enclosure Decontamination: At completion of all work, decontaminate the Work and Changing Rooms as set forth in Part 19 of this Specification, Work Area Clearance.

13.8 Work Procedures

Preformed Pipe Insulation: Remove preformed pipe insulation air cell (corrugated paper) using the following procedures:
HEPA vacuum the work site.
Wet surface with amended water or removal encapsulant.
Use a hand pump garden sprayer to inject amended water or removal encapsulant into the corrugations of the insulation. Push the nozzle half way through the insulation and inject amended water or removal encapsulant until it begins to run out the joints on either end of the section of insulation.
Allow the amended water or removal encapsulant to soak in. If the insulation is the consistency of moist putty it may be removed, otherwise inject more amended water or removal encapsulant and wait for it to soak in.
Slit jacket of the insulation at both lateral and annular joints, cut metal bands, and lower into an asbestos disposal bag held open below the pipe.
Clean the exposed pipe with wet decontamination procedures as specified in Part14 of this Specification. Dispose of the rags or paper towels in the disposal bag used above.

Collapse the bag with a HEPA vacuum, twist top of bag, seal with, at least, three (3) wraps of duct tape, bend over and seal again with at least three (3) wraps of duct tape.
Seal exposed ends of remaining pipe insulation.

Job Molded Plaster Fitting Insulation: Thoroughly wet with amended water or removal encapsulant and allow to soak in. Wet adequately to penetrate and soak material through to substrate.

13.9 Removal of Entire Structure

Consists of the intact removal of both the asbestos material and supporting material. Worker decontamination requires a remote personnel decontamination unit.

Critical Barriers: Seal all exterior passages with 6-mil sheet plastic.

Cleaning Area: Cover the floor with 6-mil sheet plastic extending 10-feet to each side of the wrapping area.

Flapped Door Construction: Provide "Z" (3) flapped door as entry to the Work Area. Fabricate each flapped door from overlapping contacting layers of sheet plastic. Fasten each layer on the top and one side. Each flap is to be three-inches longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides are fastened on each layer. Form arrows pointing to entry side from duct tape on inside and outside of door.

Complete requirements of the following:
Part 17 of this Specifications – Worker Protection
Part 8 of this Specification – Respiratory Protection
Part 11 of this Specification – Negative System - Asbestos Abatement

Entry to Work Area: Require that any time a worker enters the Work Area the following procedure is followed:
Outside of Work Area, remove all street clothes and don clean coveralls and respirator. A swimsuit or second disposable suit may be worn beneath outer coveralls.
Enter Work Area be sure that entry is completely closed.

Worker Decontamination: Require that any time a worker leaves the Work Area the following procedure be followed:
Maintain a bucket of clean potable water in the Work Area. Do not amend with a wetting agent.
Remove contaminated suit inside the Work Area. Leave respirator in place.
Wash hands, face, and surface of respirator with water and wet paper towels. Use caution to avoid breaking seal between respirator face piece and face.
Proceed with respirator in place to the Cleaning Area.
Be sure that entry to Work Area is completely closed.
In Cleaning Area, don clean disposable suit leaving respirator in place.
Proceed to next Work Area or remote shower.
At end of workday, decontaminate fully in accordance with procedures in appropriate Specification section describing Worker Protection.

Material Decontamination: Require that the following procedure be used in removing equipment and bagged debris from the Work Area.
Multiple workers are required. Workers will be needed in the Work Area, the Cleaning Area, and the Load Out Area.
Equipment and bagged debris are to be removed from the Work Area in separate operations.
Worker in Work Area cleans equipment or wrapped structure and hands one (1) piece of equipment or one (1) section at a time to worker in Cleaning Area.
Worker in Cleaning Area wet cleans each piece of equipment or section. Equipment is sealed completely in 6-mil sheet plastic in the Cleaning Area.
Sections are sealed completely in an additional layer of 6-mil sheet plastic in the Cleaning Area.
The worker in the Cleaning Area then passes each item to the workers outside the Cleaning Area. These workers then place each section in a sealed cart for transportation to the load out area. No sections are to be stored outside the work area.
All sections are to be transported through the building in clean, sealed containers that have never been in an asbestos Work Area, Mini-Enclosure, or Decontamination Unit.
Each section will be gently stacked for transportation to the disposal site. Each layer of material will be covered with 6-mil sheet plastic before the next layer is stacked.

Work Area Decontamination: At the completion of all work, decontaminate the work and cleaning area.
HEPA vacuum or wet wipe all plastic sheets, mist the sheets with amended water, and fold into the center.
Place all plastic, cleaning materials into a disposal bag.
Removal of all critical barriers.
Removal of disposable suits and place into bag with waste.
Collapse the bag with a HEPA vacuum, twist top of bag, seal with, at least, three (3) wraps of duct tape, bend over and seal again with, at least, three (3) wraps of duct tape.

Place bag into a clean disposal bag and repeat above procedure.

13.10 Wet removal

Thoroughly wet to satisfaction of Owner's Consultant asbestos-containing materials to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions. Perforate outer covering of any installation which has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.

Mist the work area continuously with amended water whenever necessary to reduce the airborne fiber levels.

Remove saturated asbestos-containing material in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three (3) wraps of duct tape. Clean outside and move to wash down station adjacent to material decontamination unit.

Removal of floor tile is classified as "Class II asbestos work" under current OSHA's 29CFR 1926.1101 Regulations for Construction. In summary, the period of floor tile shall at a minimum adhere to the following:

Floor Tile: Spray with a mist of amended water or removal encapsulant. Allow time to completely saturate the material and loosen mastic bonding. The tile shall be removed using hand tools, such as wedges, to lift the tiles from the floor in as large of pieces as possible.
The floor tile pieces shall be placed in 6-mil thick polyethylene bags, which shall, in turn, be placed in a second impermeable container, which will contain the floor tile throughout removal and disposal. The floor area from which the tile has been removed and any apparent area where debris may have fallen shall be cleaned by use of HEPA-filtered vacuum cleaners and wet mopping and wiping.

13.11 Airborne Fiber Counts

General: Use work procedures that result in a fiber count less than that indicated in the section of these specifications on "Air Monitoring - Test Laboratory Services". If airborne fiber counts exceed this level, immediately mist the area with amended water to lower fiber counts and revise work procedures to maintain airborne fiber levels within the required limit.

PART 14 – DECONTAMINATION UNITS

14.1 Description of the Work

Provide separate personnel and equipment decontamination facilities. Require that the Personnel Decontamination Unit be the only means of ingress and egress for the work area. Require that all materials exit the work area through the Equipment Decontamination Unit. A remote Decontamination Unit may be used if the CONTRACTOR can show that an attached Decontamination Unit is not feasible. Additional controls would be necessary and CONTRACTOR would submit anticipated procedures.

14.2 Related Work Specified Elsewhere

Refer to Part 10 of this Specification – Temporary Facilities - Asbestos Abatement for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

14.3 Products

Shower Head and Controls: Provide a factory made showerhead. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.

Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos contaminated water from the work area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.

Primary Filter - Pass particles 20 microns and smaller
Secondary Filter - Pass particles 5 microns and smaller

14.4 Personal Decontamination Unit

Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Shower Room, Equipment Room each separated by an airlock. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit.

Changing Room (clean room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.
Require workers to remove street clothes in this room, dress in clean, disposable coveralls, and don respiratory protection equipment.
Do not allow asbestos contaminated items to enter this room. Require workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.
Maintain floor of Changing Room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.
Disinfect shower and clean room daily.
Damp wipe all surfaces twice after each shift change with a disinfectant solution.
Provide a continuously adequate supply of disposable bath towels.
Provide posted information for emergency phone numbers and procedures.
Provide one (1) storage locker per employee.

Shower Room: Provide a completely water tight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Changing Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.
Construct room by providing a shower pan and two (2) shower walls in a configuration that will cause water running down walls to drip into pan.
Provide showerhead and controls.
Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.
Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.
Arrange so that water from showering does not splash into the Changing or Equipment Rooms.
Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.
Pump waste water to drain or to storage for use in amended water. If pumped to drain, provide 20 micron and 5 micron wastewater filters in line to drain or waste water storage. Change filters daily or more often if necessary.

Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers. Separate this room from the work area by a 6-mil polyethylene flap doorway.
Construct the room as follows:
Walls and Ceiling: Construct airtight walls and ceiling using polyethylene sheeting, at least 6-mil in thickness. Attach to existing building components or a temporary framework.
Floors: Use two (2) layers (minimum) of 6-mil polyethylene sheeting to cover floors in the Equipment, Shower (underneath shower pan), and Changing Rooms. Provide an additional layer in the Equipment Room for every shift change expected. Roll one (1) layer of plastic from Equipment Room into Work Area after each shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.
Doors: Fabricated from overlapping sheets with openings a minimum of three feet (3') wide. Configure so that sheeting overlaps adjacent surfaces. Weigh sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6') between entrance and exit of any room.
Visual Barrier: Where the decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 4-mil in thickness so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs covered with minimum 1/4-inch thick hardboard or 1/2-inch thick plywood. Where the solid barrier is provided, sheet need not be opaque.

14.5 Decontamination Sequence

Entering Work Area:

All personnel shall proceed first to the clean room, remove street clothes and dress in appropriate disposable coveralls, head and foot coverings, and respiratory protection. Replacement respiratory cartridges and protective clothing shall be provided by the CONTRACTOR and used by all personnel for each separate entry into the work area. Personnel wearing designated protective equipment shall proceed from the clean room, through the shower area, equipment room, and air locks to the main work area to begin designated activities.

Exiting Work Area:

Before leaving the work area, all personnel shall remove gross visible contamination from the outside of respirators and protective clothing by brushing, HEPA vacuuming, and/or wet-wiping techniques.

Personnel shall proceed to the equipment room for removal of all protective equipment except respirators. Where PAPR components are belt-mounted, the belt may be unfastened to allow removal of disposable clothing. After removing and discarding disposable clothing in the appropriate container, the belt around the waist shall be refastened to free hands for showering.

Reusable, contaminated footwear shall be stored in the equipment room when not in use in the work area. Upon completion of abatement, it shall be disposed of as asbestos-contaminated waste. Rubber boots may be decontaminated at the completion of the abatement project for future reuse.

Still wearing respirators, personnel shall proceed to the shower area and clean the outside of the respirators and exposed facial areas under running water before removal of the respirator. Personnel shall shower and shampoo to remove residual asbestos contamination. A PAPR respirator must remain operating throughout the decontamination process to provide adequate protection. The battery pack/cable connection shall be sealed with tape to keep out water while showering and other additional suitable precautions shall be taken to eliminate risk of electrical shock. Spent cartridges shall then be sealed and disposed of as asbestos-containing waste.

After showering and drying off, personnel shall proceed to the clean room.

14.6 Equipment Decontamination Units

Waste Container Handling:

Asbestos-containing waste that has been containerized shall be transported out of the work area through the waste container pass-out airlock and clean room airlock. The need for a separate waste load-out area will be determined on a case-by-case basis and will be approved by the Owner's Consultant.

Equipment or Material:

At the end of each day's activities, the CONTRACTOR shall provide in writing to the OWNER a count of the total bags and containers of asbestos debris leaving the removal site.

Waste pass-out procedures shall use two (2) teams of workers, an inside team and an outside team. The inside team, wearing appropriate protective clothing and respirators, shall clean the outside, including the bottoms, of properly labeled containers (bags, drums, or wrapped components) passing them into the waste container pass-out airlock. No worker from the inside team shall exit the work area through this airlock. The outside team, wearing appropriate half-mask (minimum) respirators, shall enter the airlock from outside the work area. They shall enclose bags in clean, labeled, 6-mil polyethylene bags and remove them from the airlock to the clean room. Drums shall also be properly labeled before being removed from the airlock. No worker from the outside team shall further enter the work area through this airlock.

14.7 Cleaning of Decontamination Units

Clean debris and residue from inside of Decontamination Units on a daily basis. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.

If the Changing Room of the Personnel Decontamination Unit becomes contaminated with asbestos-containing debris, abandon the entire decontamination unit and erect a new decontamination unit. Use the former Changing Room as an inner section of the new Equipment Room.

14.8 Signs

Post caution sign at each entrance to the work area.

PART 15 - ADDITIONAL REQUIREMENTS

CONTRACTOR shall be responsible to properly remove additional materials that may be suspected to contain friable asbestos and is not identified here. CONTRACTOR shall assume that there will be additional ACM to be removed, which was not previously identified and/or located. Removal costs of additional ACM shall be bid on a time and materials basis as bid in section 4.2 bid form.

Asbestos removal activities shall be performed in strict accordance with the requirements of OSHA 29 CFR 1926.1101 as well as the following:

1. CONTRACTOR shall be responsible for the proper removal and disposal of all ACBM.
2. Prior to set-up of enclosures and before commencing removal activities, the CONTRACTOR shall properly clean all debris from the work area.
3. All CONTRACTOR personnel must comply with all safety rules and regulations set forth by the OWNER at the subject site.

4. CONTRACTOR must, on a daily basis, stockpile and clean up all rubbish, trash, debris, etc., caused by work done under this project.

5. All negative air exhausts must be vented outdoors (when feasible).

6. The amount of negative air filtration units necessary to obtain the proper negative air differential within the work area will be subject to the OWNER'S and/or the owner's CONSULTANT'S approval.

7. The OWNER or OWNER'S CONSULTANT must visually observe and approve all enclosures set up (including mini enclosures) and their requirements before commencing any removal activities.

8. CONTRACTOR shall collect his/her own personal air samples and submit analytical results to the OWNER'S CONSULTANT to document employee exposure. Air monitoring shall be conducted in accordance with OSHA regulations.

9. The OWNER or OWNER'S CONSULTANT must approve the decontamination area location, CONTRACTOR parking, dumpster location, and entrances that the CONTRACTOR may use for the movement of supplies and personnel.

10. CONTRACTOR shall allow the Owner's CONSULTANT to inspect and approve for use all equipment and materials used. Inspections shall be performed before the start of any work.

11. CONTRACTOR shall allow the Owner's CONSULTANT to check or evaluate the contractors' air monitoring methods, procedures and quality assurance.

12. A clear view port with a minimum size of 12" x 12" shall be installed to allow a view of the interior of the work area.

13. All personnel on the job site shall be state certified to do any work from Pre-clean/prep to and including tear down.

14. Waste Load-out Area: All containments shall be constructed to include a waste load out area. This area shall be separate from the decontamination unit and shall be used as a temporary storage area for bagged waste and as a port for transferring waste to the transport vehicle. All waste load-out areas must have a minimum of three separate chambers separated by air locks.

PART 16 - ADDITIONAL CONSIDERATIONS

This section provides some technical information that may be of interest to the awarded CONTRACTOR. The following procedures shall be conducted in the order in which they appear:

1. Negative pressure air filtration units equipped with HEPA filters shall be operated continuously from the time of barrier construction through the time that acceptable final air clearance monitoring results are obtained. These units shall exhaust filtered air to the outside of the building when the length of exhaust duct required to do so does not overburden the negative air units.

2. Erect critical barriers, establish a negative pressure differential of -0.020" between the work area and surrounding area, and construct the decontamination unit and waste load out.

3. HEPA vacuum or wet wipe all surfaces contaminated with visible dust or debris. All movable objects shall be cleaned of dust and debris by HEPA vacuum or wet wiped before removal from the work area.

4. Dispose of all dust and debris, filters, mop heads and other contaminated waste as ACWM.

5. After pre-cleaning work area, begin prep of work area.

PCM analysis will be utilized for "clean air" (post abatement) air sampling utilizing aggressive sampling. However, the Owner's CONSULTANT may elect to use TEM analysis when deemed appropriate.

The CONTRACTOR shall be responsible to properly remove additional materials that may be suspected to contain asbestos and is not identified here. It is expected the CONTRACTOR will perform any work necessary to remove ACBM that is encountered during renovation/demolition.

PART 17– WORKER PROTECTION

This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

17.1 Related Work Specified Elsewhere

Respiratory Protection is specified in Part 8 of this Specification.

17.2 Worker Training

AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the AHERA Regulation 40 CFR 763, Appendix C, Subpart E, April 30, 1987.
Train, in accordance with 29 CFR 1926, all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures.

17.3 Medical Examinations

Provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8-hour time weighted average. In the absence of specific airborne fiber data, provide medical examination for all workers who will enter the work

area for any reason. Examination shall as a minimum meet OSHA requirement as set forth in 29 CFR 1926. In addition, provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

17.4 Submittals

Before Start of Work: Submit the following to the Owner's CONSULTANT for review (if requested):
AHERA Accreditation: Submit copies of certificates from an EPA-approved AHERA Abatement Workers course for each worker as evidence that each asbestos Abatement Worker is accredited as required by the AHERA Regulation 40 CFR 763, Appendix C, Subpart E, April 30, 1987.
Report from Medical Examination: Conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the work area. Submit, at a minimum, for each worker the following:
Name and Social Security Number
Physician's Written Opinion from examining physician including, at a minimum, the following:
Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.
Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.
Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

17.5 Equipment

Disposable coveralls, head covers, and footwear covers shall be provided by the CONTRACTOR for the OWNER, Owner's CONSULTANT, and other authorized representatives who may inspect the job site.

Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the work area.

Each time the work area is entered, remove all street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

17.6 Decontamination Procedures

Require all workers to adhere to the following personal decontamination procedures whenever they leave the work area:
When exiting area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the Equipment Room.
Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering.

The following procedure is required as a minimum:
Thoroughly wet body, including hair and face. With respirator still in place, thoroughly wash body, hair, and respirator face piece. Carefully wash face piece of respirator inside and out. Shower completely with soap and water. Rinse thoroughly. Rinse shower room walls and floor prior to exit. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

17.7 Within Work Area

Require that workers NOT eat, drink, smoke, and chew gum or tobacco in the work area. To eat, chew, drink, or smoke, the workers shall follow the procedure described above, then dress in street clothes before entering the non-work areas of the building.

PART 18 - AIR MONITORING

18.1 Description of the Work

This section describes air monitoring carried out by the OWNER or owner’s CONSULTANT representative to verify that the building beyond the work area and the outside environment remain uncontaminated. This section also sets forth airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the CONTRACTOR if an action level is met or exceeded.

Personal air monitoring required by OSHA is work of the CONTRACTOR and is not covered in this section.

Air Monitoring: During work area clearance is described in Part 19 of this Specification.

18.2 Air Monitoring

Work Area Isolation: The purpose of the Owner's air monitoring will be to detect faults in the work area isolation such as:
Contamination of the building outside of the work area with airborne asbestos fibers.
Failure of filtration or rupture in the negative pressure system.

Should any of the above occur the CONTRACTOR should immediately cease asbestos abatement activities until the fault is corrected. Work shall not recommence until authorized by THE OWNER'S CONSULTANT.

Work Area Airborne Fiber Count: The owner's CONSULTANT shall monitor airborne fiber counts in the work area. The purpose of this air monitoring will be to detect airborne fiber counts to protect the environment from contamination by airborne fibers.

The owner's CONSULTANT shall be conducting air monitoring throughout the course of the project, which may include personal air samples on CONTRACTOR employees. This does not release the CONTRACTOR of his responsibilities to meet OSHA's requirements.

18.3 Stop Action Levels

Inside Work Area: Maintain an average airborne count in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts rise above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber counts for any work shift or 8-hour period exceeds the Stop Action Level, stop all work except corrective action, and leave pressure differential and air circulation system in operation.

STOP ACTION LEVEL(f/cc)	IMMEDIATE STOP LEVEL (f/cc)	MINIMUM RESPIRATOR REQUIRED	MINIMUM PROTECTION FACTOR
0.1	1.0	Half Face	10
0.5	5.0	PAPR	50
1.0	10.0	Type C	100

If airborne fiber counts exceed Immediate Stop Level given above for type of respiratory protection in use for any period of time, cease all work except corrective action. Do not recommence work until fiber counts fall below Stop Action Level given above for the type of respiratory protection in use.

Outside Work Area: If any air sample taken outside of the work area exceeds the base line established level, immediately and automatically stop all work to determine the cause. If this air sample was taken inside the building and outside of critical barriers around the work area, erect new critical barriers as set forth Part 12 - Temporary Enclosures of this Specification, to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).

Respiratory protection as set forth in Part 8 - Respiratory Protection of this Specification, shall be worn in affected area until area is cleared in accordance with Part 19 - Work Area Clearance of this Specification.

Leave Critical Barriers in place until completion of work and insure that the operation of the negative pressure system in the work area results in a flow of air from the balance of the building into the affected area.

18.4 Fibers Counted

The following procedure will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts.

"Airborne Fibers:" Referred to above include all fibers regardless of composition as counted by phase contrast microscopy (PCM), unless additional analysis by transmission electron microscopy (TEM) demonstrates to the satisfaction of the Owner's CONSULTANT that non-asbestos fibers are being counted. "Airborne Fibers" counted in samples analyzed by transmission electron microscopy shall be all asbestos fibers.

Phase Contrast Microscopy (PCM): Will be performed using the NIOSH 7400 method. This analysis will be carried out at the job site.

Transmission Electron Microscopy (TEM): Will be performed using the analysis method set forth in the AHERA Regulation 40 CFR, Part 763.

Before Start of Work: The owner's CONSULTANT shall secure Air Samples to establish a base line before start of work.
18.5 Personal Monitoring

Owner's Consultant shall perform all monitoring, as necessary, to meet OSHA requirements (29 CFR 1926.1101) for maintenance of time-weighted average (TWA) fiber counts for types of respiratory protection provided. CONTRACTOR will not be performing air monitoring to meet these OSHA requirements.

The services of a testing laboratory will be employed by the Owner to perform laboratory analysis of the air samples. A microscope and technician will be set up at the job site, or samples will be sent daily by overnight mail, so that verbal reports on air samples can be obtained within 24 hours.

PART 19 – WORK AREA CLEARANCE

General: Decontamination of the Work Area following asbestos abatement.

If the asbestos abatement work is on undamaged and non-friable materials, then the building space is deemed uncontaminated before start of the work
All surfaces must be clean and/or encapsulated following asbestos abatement, thus preventing contamination of the building when the work area isolation barriers are removed
Operation of the negative pressure system is used to remove airborne fibers generated by the abatement work.

Work Area Clearance: Air testing and other requirements, which, must be met before release of CONTRACTOR and re-occupancy of the work area, are specified in Part 19 of this Specification.

Clearance Criteria is set forth in 40 CFR, Part 763.

19.1 First Cleaning

Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Absolute (HEPA) filtered vacuum. Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

Remove All Filters in Air-handling System(s) and dispose of as asbestos containing waste in accordance with requirements Part 20 of this Specification – Off-Site Transportation and Disposal.

Wait 24 hours to allow negative air machines to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain negative pressure system in operation for the entire 24-hour period.

Encapsulation of substrate: Perform encapsulation of substrate where required at this time. Maintain negative air system in operation during encapsulation work.

19.2 Second Cleaning

Carry out a second cleaning of all surfaces in the work area in the same manner as the first cleaning.
Immediately following the second cleaning of the primary plastic, remove all Primary Barrier sheeting and Material Decontamination Unit, if there is one, leaving only:
Critical Barrier: which forms the sole barrier between the work area and other portions of the building or the outside.
Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.

Decontamination Unit: For personnel in operating condition.

Negative Pressure System: Maintain in continuous operation.

19.3 Third Cleaning

Carry out a third cleaning of all surfaces in the work area in the same manner as the first cleaning immediately after removal of primary plastic. This cleaning is now being applied to existing room surfaces. Take care to avoid watermarks or other damage to surfaces.

Cleaning Carpeting: At the completion of cleaning of all surfaces except carpeting, HEPA vacuum carpeting designated to remain in work areas using a floor cleaning attachment adjusted so that rubber skirting is in contact with carpet surface. Use a passive (non power brush type) floor attachment with rubber floor seals and adjustable above floor height. Completely clean carpeting in one direction with each pass of the floor attachment overlapping the previous pass by one-half the attachment width. At the completion of one such cleaning, vacuum clean in the same manner in a direction at right angles to the initial cleaning.

Wait 24 hours to allow negative air machines to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain negative pressure system in operation for the entire 24-hour period.

19.4 Final Cleaning

Final Cleaning: Carry out a final cleaning of all surfaces in the work area in the same manner as the previous cleaning.

Wait 24 hours to allow negative air machines to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain negative pressure system in operation for the entire 24-hour period.

19.5 Visual Inspection

After 24 Hours Perform a Complete Visual Inspection of the entire work area including: decontamination unit, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. If any such debris residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the certification, by OWNER'S CONSULTANT.

19.6 Final Air Sampling

Phase Contrast Microscopy (PCM): After the work area is found to be visually clean, air samples will be taken and analyzed in accordance with the procedure for phase contrast microscopy set forth in Part 19 of this Specification.

Clearance Criteria is set forth in 40 CFR, Part 763.

If Release Criteria is not met, repeat Final Cleaning and continue decontamination procedure from that point. If Release Criteria is met, remove the interior of the decontamination unit leaving in place only the Critical Barriers separating the work area from the rest of the building and the operating negative pressure system.

Any small quantities of residual material found upon removal of the plastic sheeting shall be removed with a HEPA filtered vacuum cleaner and local area protection. If significant quantities, as determined by the Owner's CONSULTANT, are found then the entire area affected shall be decontaminated as specified herein for the Final Cleaning.

Transmission Electron Microscopy (TEM) (if required): After the work area is found to be visually clean, air samples will be taken and analyzed in accordance with the procedure for transmission electron microscopy set forth in Part 19 of this Specification.

If Release Criteria is not met, repeat Final Cleaning and continue decontamination procedure from that point.

If Release Criteria is met, remove the interior of the decontamination unit leaving in place only the Critical Barriers separating the work area from the rest of the building and the operating negative pressure system.

19.7 Completion of Abatement Work

Seal negative air machines with 6-mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area. Asbestos Abatement Work is Complete upon meeting the work area clearance criteria and fulfilling the following:
Remove all equipment, materials, and debris from the work site.
Dispose of all asbestos containing waste material as specified in Part 20 of this Specification.
Repair or replace all interior finishes damaged during the course of asbestos abatement work.
Fulfill Project Closeout Requirements of Part 20 of this Specification – Off-Site Transportation and Disposal

19.8 Certificate of Visual Inspection

On the last page of this Specification is a "Certificate of Visual Inspection". This certification is to be completed b y the CONTRACTOR and certified by the OWNER'S CONSULTANT. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

PART 20 – OFF-SITE TRANSPORTATION AND DISPOSAL

20.1 Disposal

Friable asbestos-containing waste material and debris, which is packaged in accordance with the provision of this Specification, may be disposed of at a designated sanitary landfill. Contractor shall use an approved landfill. Owner may request the use of a specific landfill.

20.2 Submittals

Submit copies of all manifests and landfill receipts to Owner on a weekly basis or as requested by Owner's Representative.

When drums, bags, and wrapped components have been removed from the work area, they shall be loaded into an enclosed or covered truck/trailer for transportation. If a rented vehicle is used, the OWNER of the vehicle shall be notified of its intended use and a copy of the notification shall be given to the Owner's Consultant.

The enclosed cargo area of the vehicle shall be free of debris and lined with two layers of 6-mil polyethylene sheeting to prevent contamination from leaking or damaged containers. Floor sheeting shall be installed first and be extended up to the sidewalls. Wall sheeting shall be overlapped and taped into place.

Proper tools/equipment shall be provided to safely expedite container handling. Drums shall be placed on level surfaces in the cargo area and packed tightly together to prevent shifting and tipping. Large structural components shall be secured to prevent shifting.

Personnel handling asbestos-containing waste shall be protected by disposable clothing, including head, body and foot protection, and, at a minimum, shall wear half-face piece, air-purifying, dual cartridge respirators equipped with high efficiency filters.

Disposal must occur at an authorized site in accordance with regulatory requirements of the EPA regulations and any applicable State and local guidelines and regulations.

Copies of all original disposal receipts, trip tickets, transportation manifests, and other records of disposal shall be delivered to the OWNER for documentation purposes. CONTRACTOR must obtain and provide certification by and other satisfactory evidence from the OWNER(s) or operators(s) of the waste disposal facility(ies) attesting to the fact that all disposal activities were conducted and concluded in conformance with the requirements of 40 CFR 61.156 and all other applicable laws and regulations.

Certification and other evidence (including, but not limited to, that above) satisfactory to OWNER of the landfill and completed disposal of all waste and waste containers must be submitted to and received by OWNER before final payment to CONTRACTOR. The CONTRACTOR may request copies of these records for their documentation records. If a separate hauler is employed, their name, address, telephone number, and signature shall also appear on the form.

PART 21 – PROJECT CLOSEOUT

This section specifies administrative and procedural requirements for project closeout after removal is complete.

21.1 Substantial Completion

Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following: (List exceptions in the request)

In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the work claimed as substantially complete. Include supporting documents for completion as indicated in these Contract Documents.
Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

Inspection procedures: On receipt of a request for inspection, the Owner's Consultant will either proceed with inspection or advise the CONTRACTOR of unfilled requirements.

The Owner's Consultant will repeat inspection when requested and assured that the work has been substantially completed.

Results of the completed inspection will form the basis of requirements for final acceptance.

CERTIFICATE OF VISUAL INSPECTION:

In accordance with Part 19.8 of this Specification, the CONTRACTOR hereby certifies that CONTRACTOR has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and has found no dust, debris or residue.

By: Signature_____ Date: _____

(Print Name)_____

(Print Title)_____

OWNER'S CONSULTANT CERTIFICATION

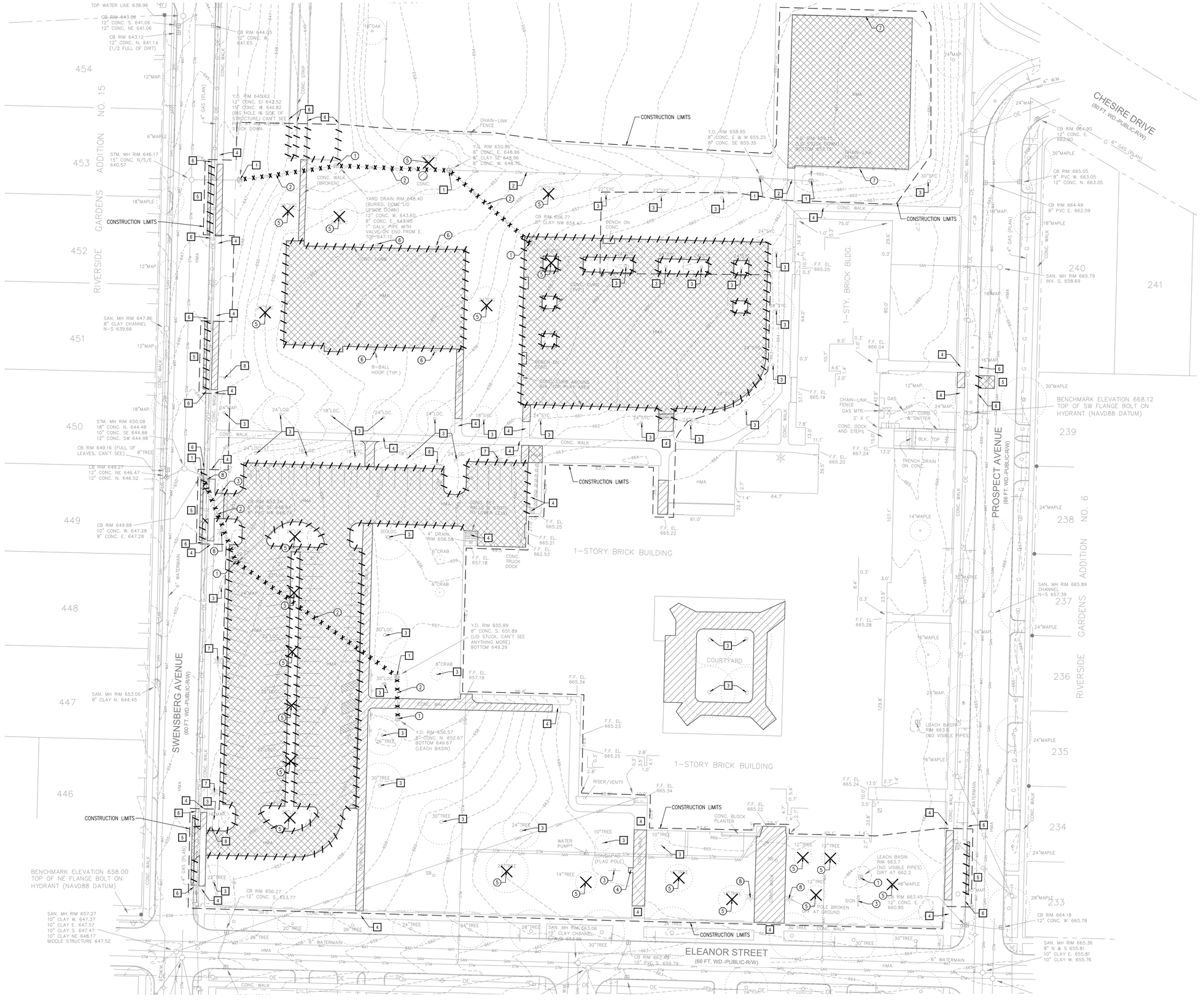
The OWNER'S CONSULTANT hereby certifies that the OWNER'S CONSULTANT has accompanied the CONTRACTOR on the visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the contractor's certification above is a true and honest one.

By: Signature_____Date: _____

(Print Name)_____

(Print Title)_____

APPENDIX D
CONSTRUCTION DRAWINGS



DEMOLITION NOTES

1. THE INFORMATION CONTAINED ON THESE DRAWINGS PERTAINING TO EXISTING CONDITIONS, SUCH AS BUT NOT LIMITED TO, UTILITIES, AND TOPOGRAPHY IS FURNISHED SOLELY AS THE BEST INFORMATION AVAILABLE AND ITS ACCURACY IS NOT GUARANTEED. THE USE OF THIS INFORMATION DOES NOT PROVIDE THE CONTRACTOR RELIEF FROM ANY RESPONSIBILITY FOR DAMAGES DUE TO ANY INACCURACIES.

2. CONTRACTOR SHALL CONTACT MISS DIG AT 811 OR (800)-482-7171 AT LEAST 3 WORKING DAYS PRIOR TO ANY EXCAVATION TO CONFIRM THE LOCATIONS OF EXISTING BURIED UTILITIES. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF EXISTING UTILITIES, IF REQUIRED, WITH THE UTILITY OWNER AND BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES AND REPAIRING DAMAGE TO EXISTING UTILITIES RESULTING FROM THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS OF REPAIRING OR REPLACING ANY DAMAGED UTILITIES AT NO EXPENSE TO THE OWNER. THE CONTRACTOR SHALL LOCATE ANY PRIVATE UTILITIES (I.E. LIGHTING, ETC.) INCIDENTAL TO THE WORK.

3. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING HORIZONTAL AND VERTICAL CONTROL POINTS, BENCHMARKS, ETC. CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONSTRUCTION STAKING AND FIELD LAYOUT. IT IS RECOMMENDED THAT TWO (2) BENCHMARKS BE USED FOR VERIFICATION OF ALL CONSTRUCTION ELEVATIONS. SET ADDITIONAL BENCHMARKS, AS NEEDED, TO COMPLY WITH THIS REQUIREMENT.

4. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY HAND DIGGING. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH LIKE MATERIAL IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING NECESSARY TO COMPLETE THE WORK NOTED ON THESE PLANS. WATER REMOVED BY DEWATERING EQUIPMENT SHALL NOT BE DISPOSED OF INTO EXISTING SANITARY SEWERS.

6. CONTRACTOR SHALL CONDUCT ALL EXCAVATION, FILLING, GRADING, AND CLEAN-UP OPERATIONS IN A MANNER SUCH THAT SEDIMENT GENERATED BY WIND OR WATER IS NOT DISCHARGED OFF SITE INTO THE AIR, ANY STORM SEWER OR UNDERGROUND UTILITY SYSTEM, DRAINAGE DITCH, RIVER, OR LAKE. STAGE THE WORK TO MINIMIZE THE AREA OF EXPOSED SOIL, THEREBY REDUCING THE OPPORTUNITY FOR SOIL EROSION.

7. CONCRETE PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING CONTROL JOINT OR ISOLATION JOINT BEYOND AREA INDICATED ON THE PLANS TO BE REMOVED. CONCRETE AND BITUMINOUS PAVEMENT SHALL BE SAWCUT FULL DEPTH AND SQUARE TO EX. CURB WHEN PRESENT. REMOVALS WILL BE MADE TO PROVIDE FOR PROPER GRADE TRANSITIONS AND CONNECTIONS.

8. ALL AREAS DISTURBED OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION AND TO THE SATISFACTION OF THOSE HAVING JURISDICTION, UNLESS NOTED OTHERWISE ON THE PLANS.

9. ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE SEEDED AND MULCHED. SEEDING AND MULCHING SHALL BE DONE IN ACCORDANCE WITH THE GENERAL SPECIFICATIONS.

10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS REQUIRED FOR CONSTRUCTION.

DEMOLITION LEGEND

- CONSTRUCTION LIMITS
- UNDERGROUND UTILITY TO BE REMOVED
- REMOVE EXISTING CONCRETE CURB
- REMOVE EXISTING CONCRETE SURFACE, SAWCUT AT REMOVAL LIMITS
- REMOVE EXISTING HMA SURFACE, SAWCUT AT REMOVAL LIMITS
- TREES TO BE REMOVED

SITE PROTECTION KEY

1. PROTECT EX. UTILITY STRUCTURE TO REMAIN.
2. PROTECT EX. UNDERGROUND UTILITY TO REMAIN.
3. PROTECT EX. TREE TO REMAIN.
4. PROTECT EX. CONCRETE TO REMAIN.
5. PROTECT EX. ASPHALT TO REMAIN.
6. PROTECT EX. CONCRETE CURB TO REMAIN.
7. PROTECT EX. LIGHT POLE TO REMAIN.
8. PROTECT EX. SIGN TO REMAIN.

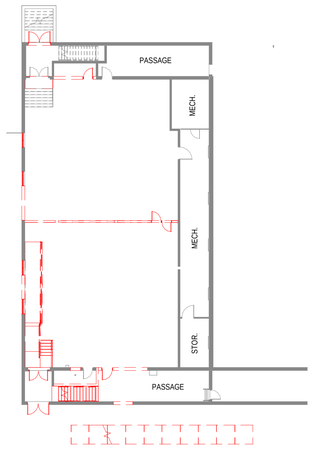
SITE REMOVAL KEY

1. REMOVE EX. DRAINAGE STRUCTURE.
2. REMOVE EX. UNDERGROUND UTILITY.
3. REMOVE AND SALVAGE EX. SIGN.
4. REMOVE AND SALVAGE EX. FLAG POLE.
5. REMOVE EX. TREE.
6. REMOVE AND SALVAGE EX. BASKETBALL HOOP.
7. REMOVE EX. FENCE.
8. REMOVE AND SALVAGE EX. LIGHT POLE.

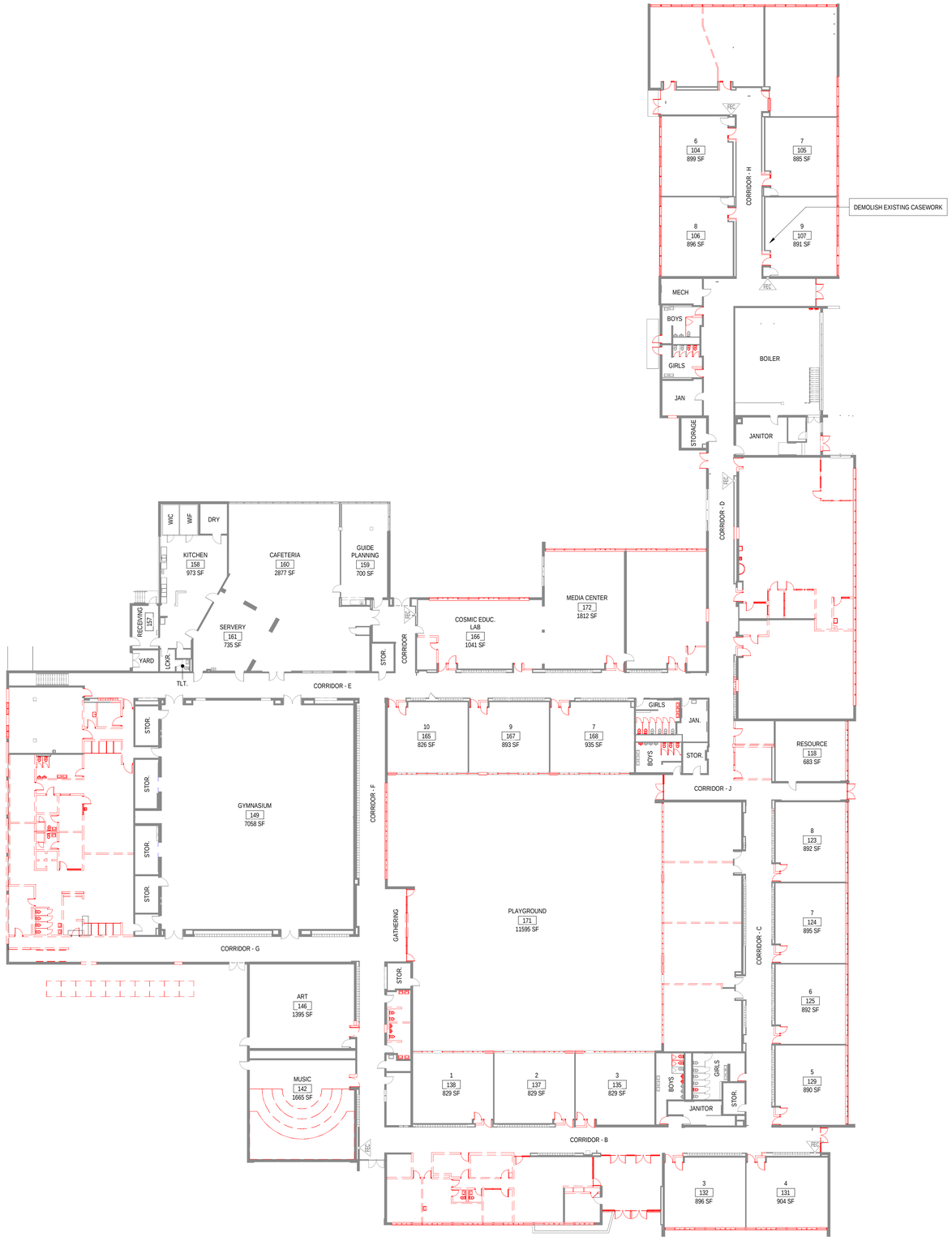
SD - SITE DEMOLITION PLAN

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



DEMOLITION PLAN - LOWER LEVEL - OVERALL
1" = 20'-0"



DEMOLITION PLAN - FIRST LEVEL - OVERALL
1" = 20'-0"

DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR & FRAME TO BE REMOVED
- EXISTING BUILDING COMPONENT & STRUCTURE TO REMAIN
- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

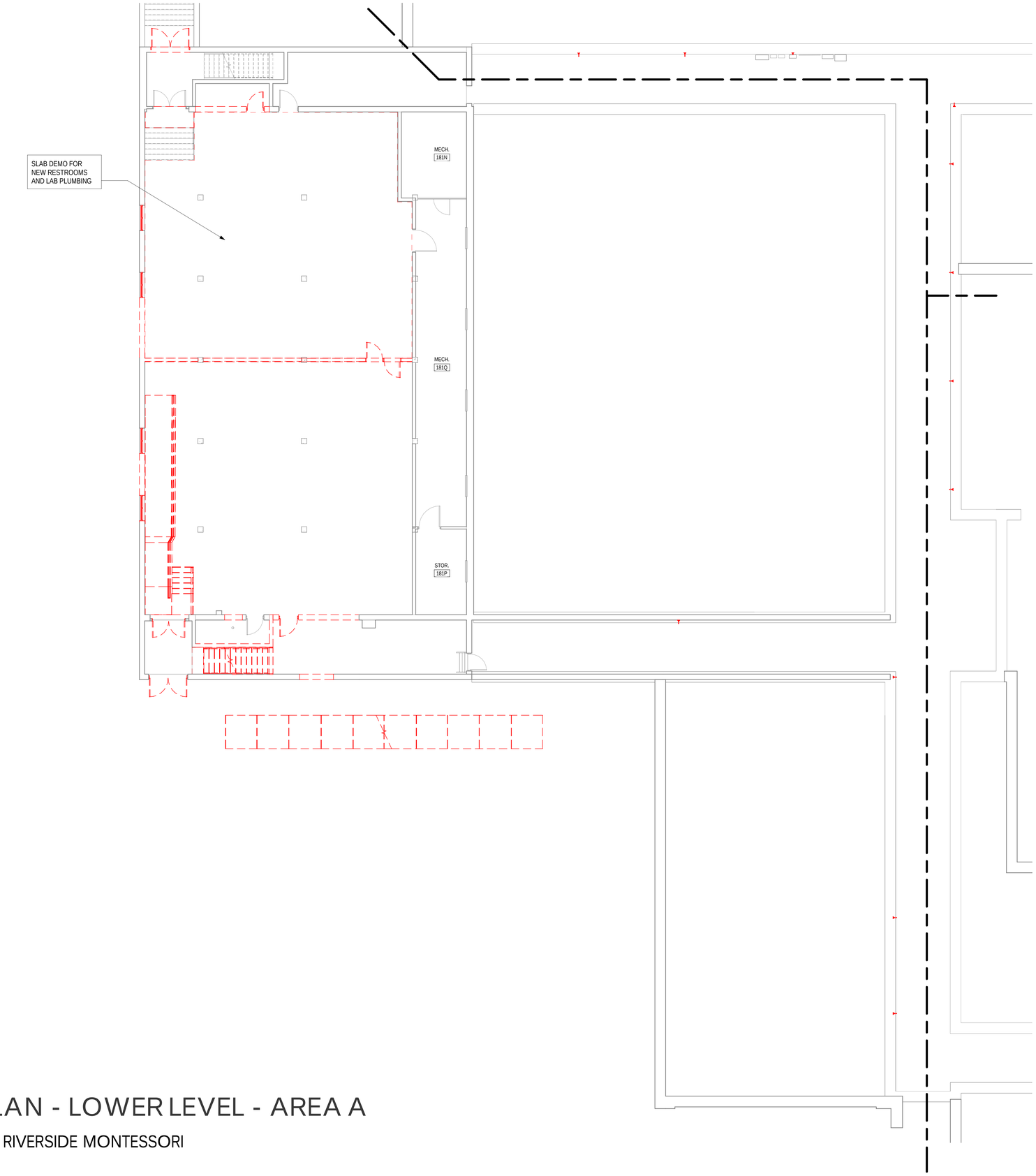
GENERAL DEMOLITION NOTES:

1. ALL EXISTING ITEMS TO BE RETAINED BY THE OWNER WILL BE REMOVED PRIOR TO DEMOLITION. ANY ITEMS LEFT IN THE DEMOLITION AREA BECOME THE PROPERTY OF THE DEMOLITION CONTRACTOR.
2. REFER TO ALL CONTRACT DOCUMENTS, INCLUDING SPECIFICATIONS, FOR ADDITIONAL DEMOLITION NOTES AND INFORMATION.
3. SHORE AND BRACE ALL WORK REQUIRED TO REMAIN.
4. CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID TO BECOME FAMILIAR WITH EXISTING CONDITIONS.
5. CONTRACTORS ARE TO COORDINATE DEMOLITION WORK WITH OWNER PRIOR TO START OF WORK.
6. U.N.O., PATCH AND PREPARE FLOOR W/ CONCRETE (OR FLORSTONE) TO FLUSH WITH ADJACENT FLOOR SURFACE. FILL ANY SLOPING OR RECESSED AREAS TO LEVEL WITH TYPICAL FINISH FLOOR ELEVATION TO ACCOMMODATE NEW FLOOR COVERINGS.
7. INFILL EXISTING CHASE OPENINGS AND/OR PENETRATIONS IN FLOORS, CEILINGS, OR ROOF DECK. FIRE-RATING OF NEW CONSTRUCTION IS TO MATCH EXISTING.
8. DEMO ALL CEILING AND FLOOR FINISHES.

SD - OVERALL DEMOLITION PLANS

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR & FRAME TO BE REMOVED
- EXISTING BUILDING COMPONENT & STRUCTURE TO REMAIN
- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

GENERAL DEMOLITION NOTES:

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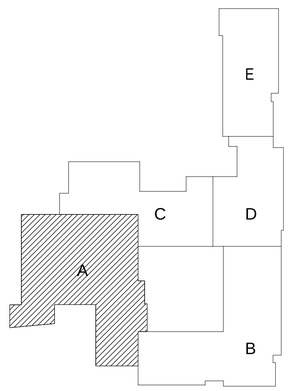
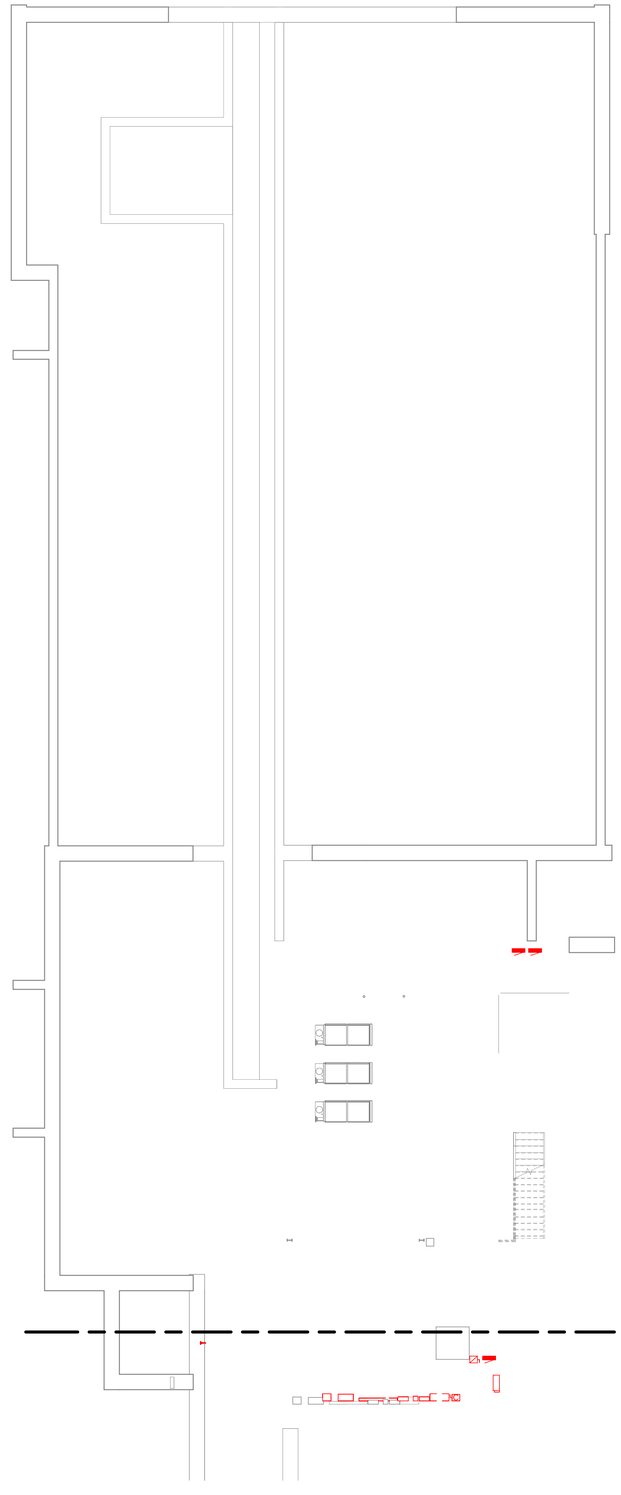
6. U.N.O., PATCH AND PREPARE FLOOR W/ CONCRETE (OR FLORSTONE) TO FLUSH WITH ADJACENT FLOOR SURFACE. FILL ANY SLOPING OR RECESSED AREAS TO LEVEL WITH TYPICAL FINISH FLOOR ELEVATION TO ACCOMMODATE NEW FLOOR COVERINGS.
7. INFILL EXISTING CHASE OPENINGS AND/OR PENETRATIONS IN FLOORS, CEILINGS, OR ROOF DECK. FIRE-RATING OF NEW CONSTRUCTION IS TO MATCH EXISTING.
8. DEMO ALL CEILING AND FLOOR FINISHES.



SD - DEMOLITION PLAN - LOWER LEVEL - AREA A

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR & FRAME TO BE REMOVED
- EXISTING BUILDING COMPONENT & STRUCTURE TO REMAIN
- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

GENERAL DEMOLITION NOTES:

1. ALL EXISTING ITEMS TO BE RETAINED BY THE OWNER WILL BE REMOVED PRIOR TO DEMOLITION. ANY ITEMS LEFT IN THE DEMOLITION AREA BECOME THE PROPERTY OF THE DEMOLITION CONTRACTOR.
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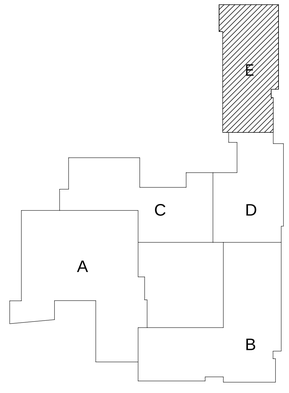
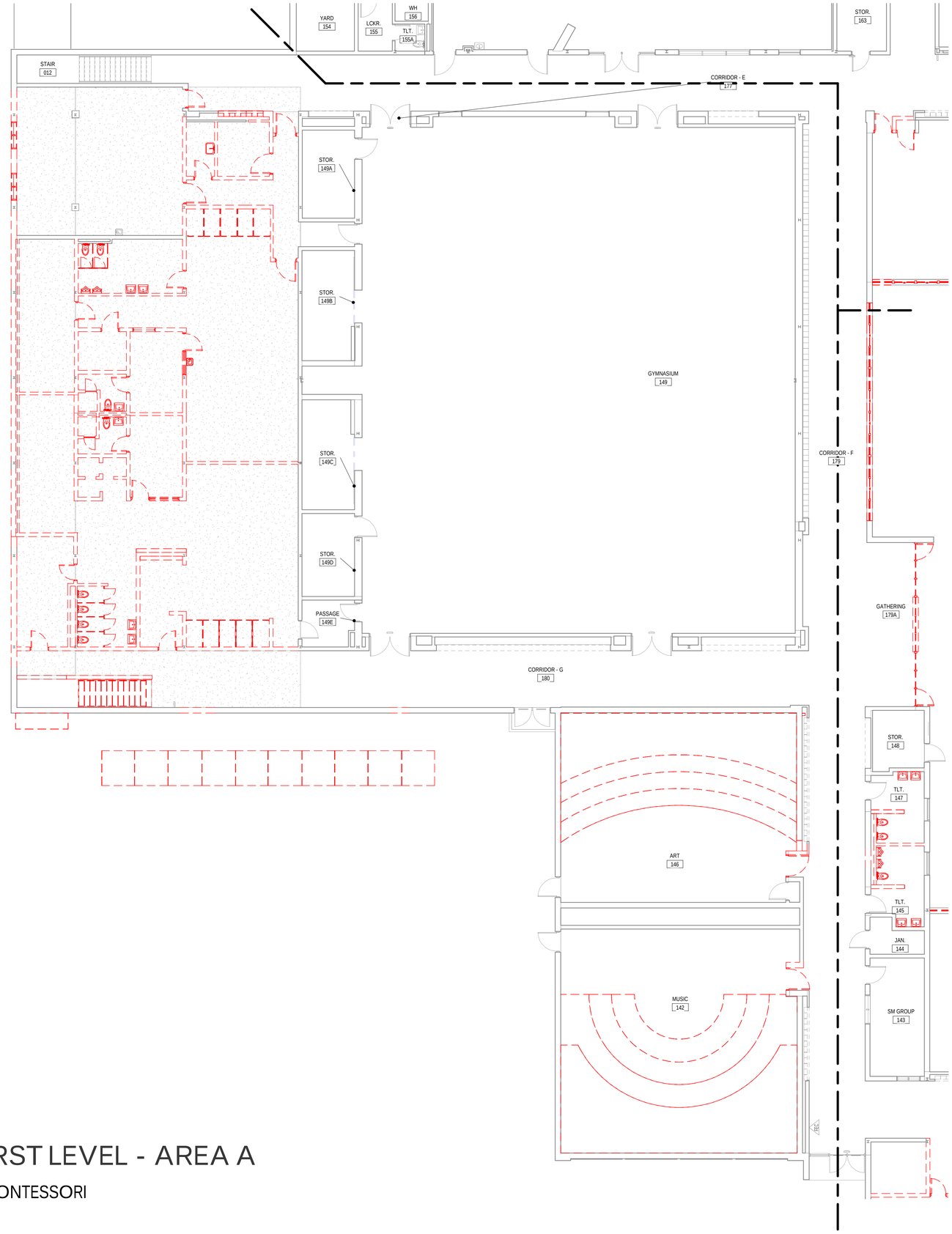


SD - DEMOLITION PLAN - LOWER LEVEL - AREA E

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



DEMO PLAN LEGEND:

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- EXISTING DOOR TO REMAIN
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- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

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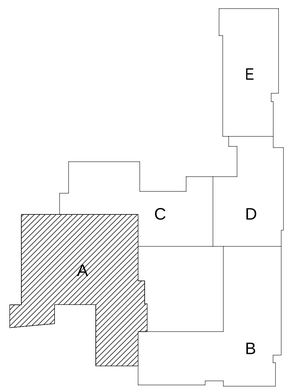
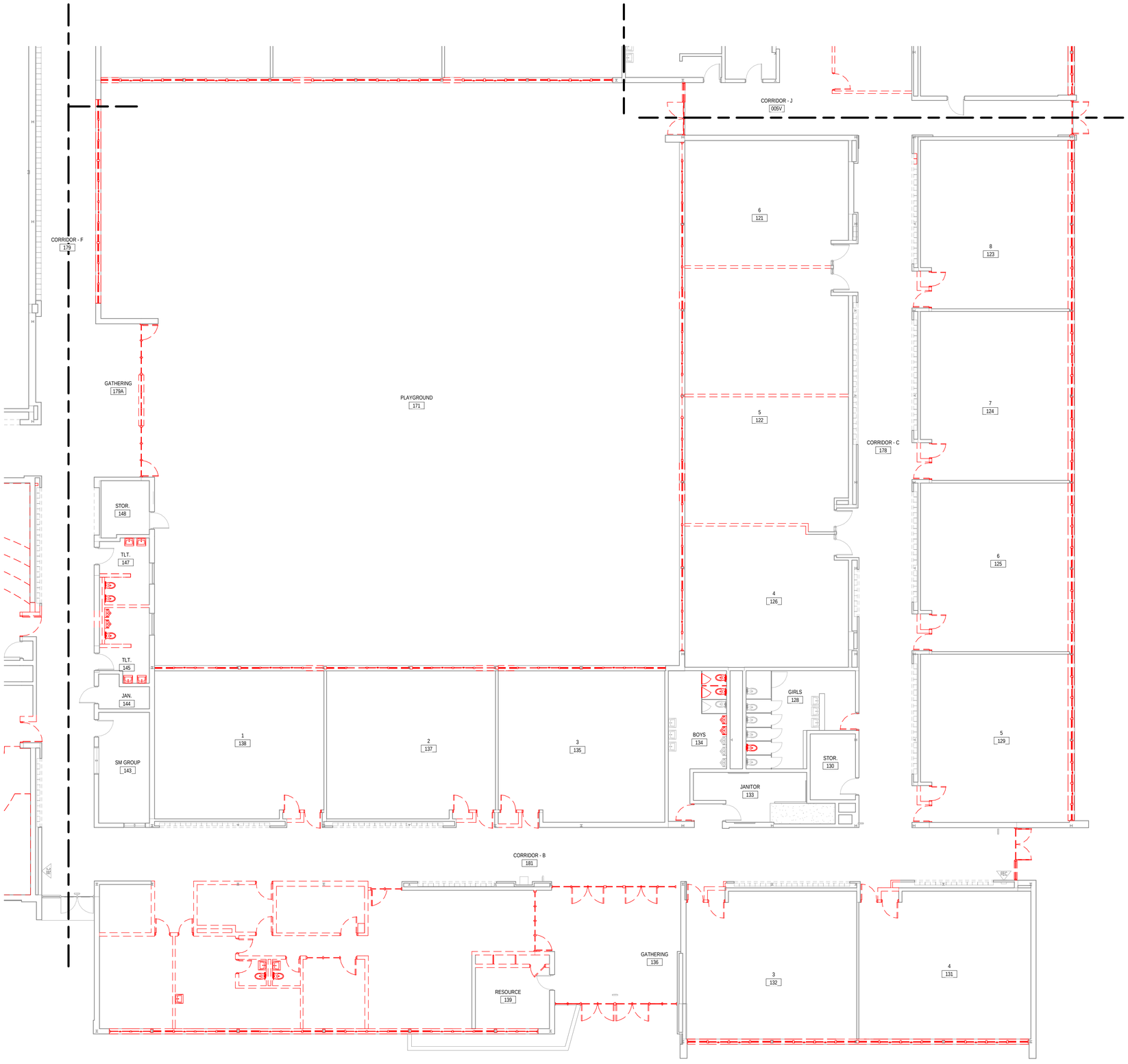


SD - DEMOLITION PLAN - FIRST LEVEL - AREA A

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025

c2ae



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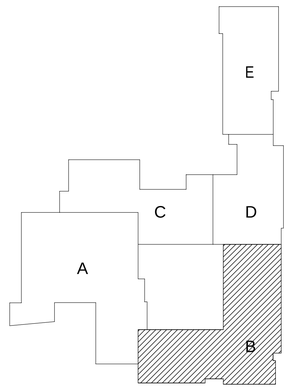

SD - DEMOLITION PLAN - FIRST LEVEL - AREA B

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025

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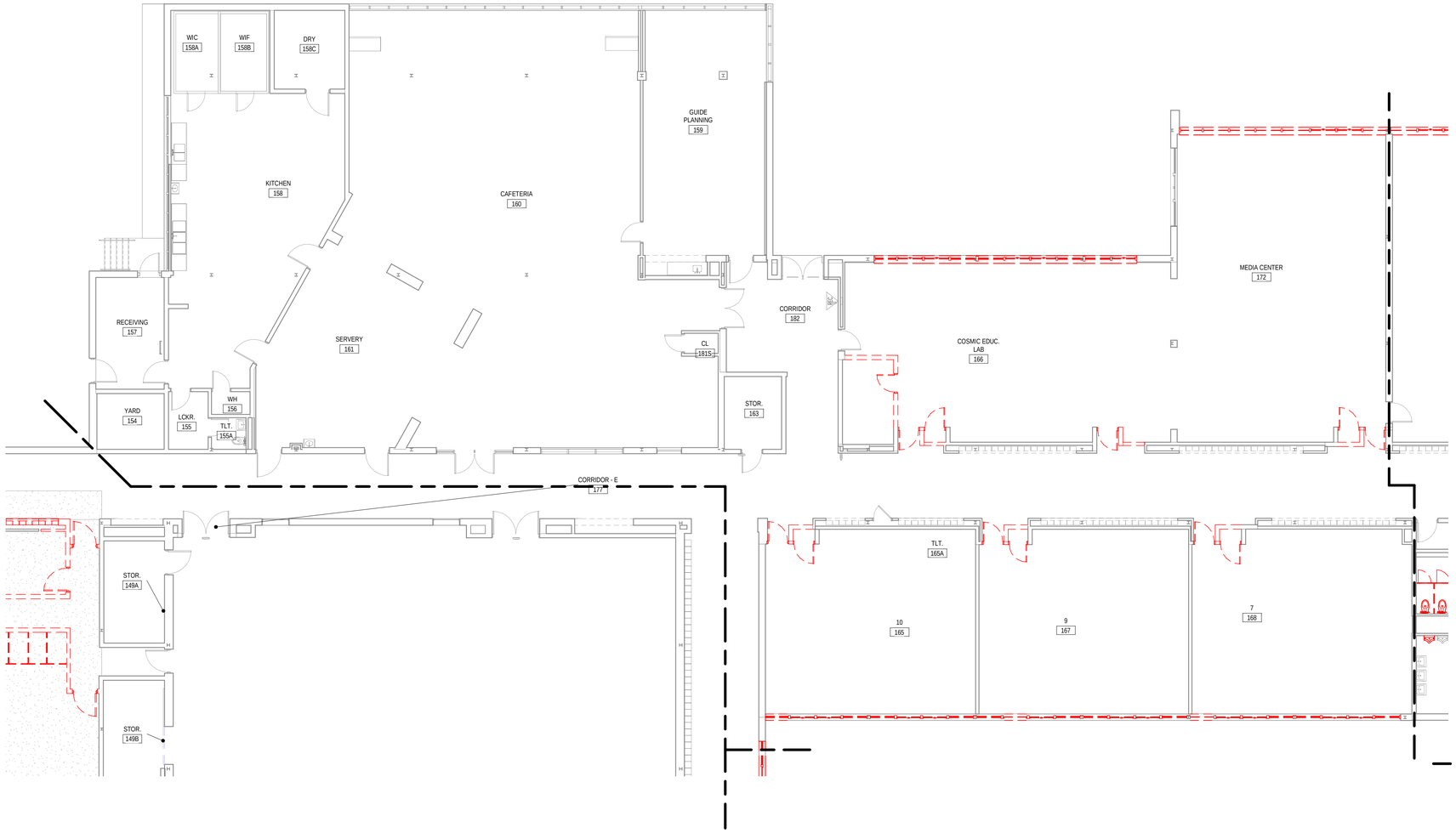

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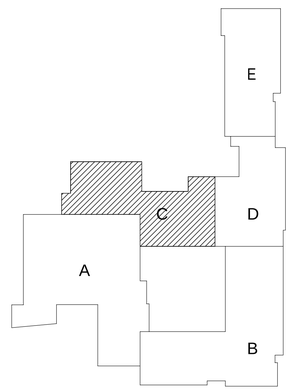
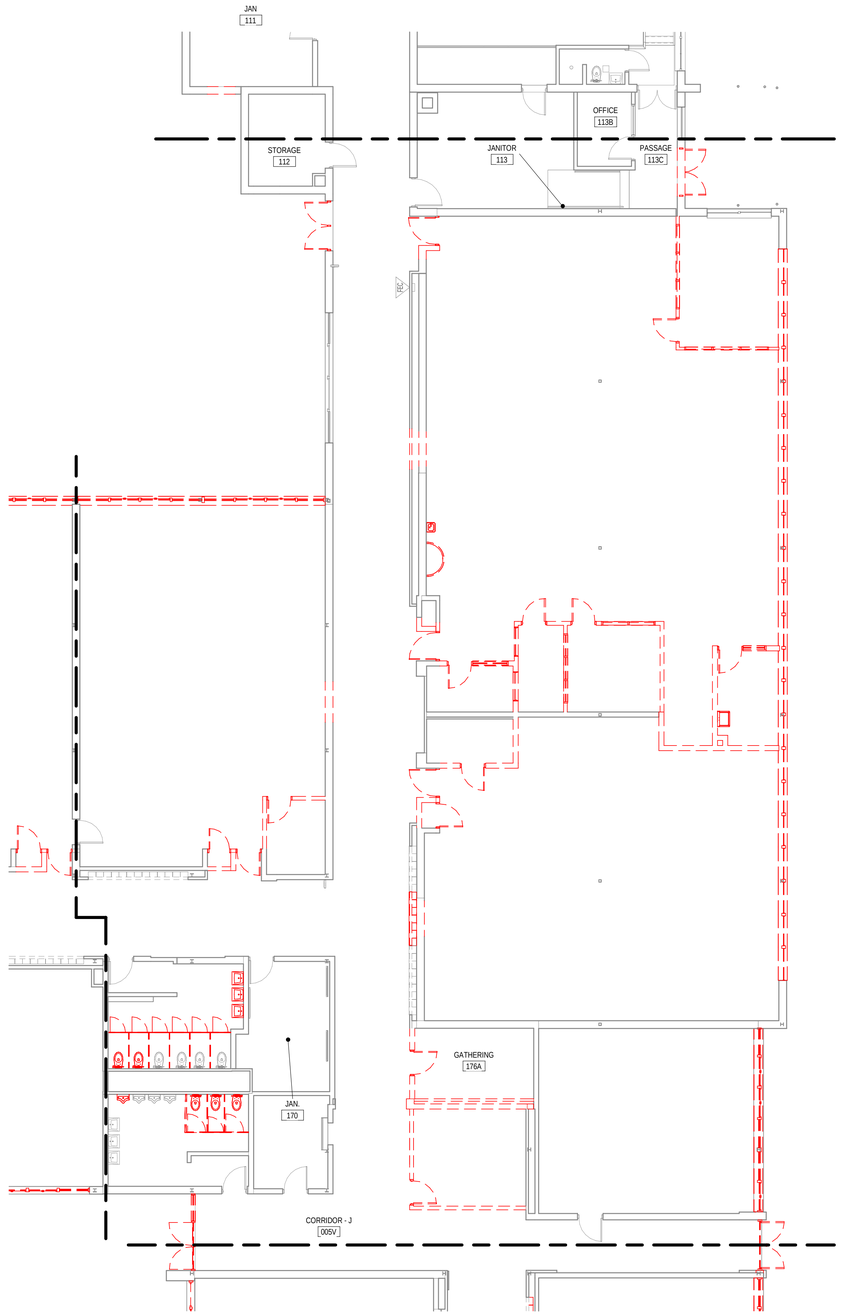


SD - DEMOLITION PLAN - FIRST LEVEL - AREA C

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



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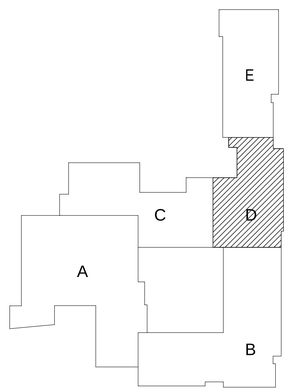
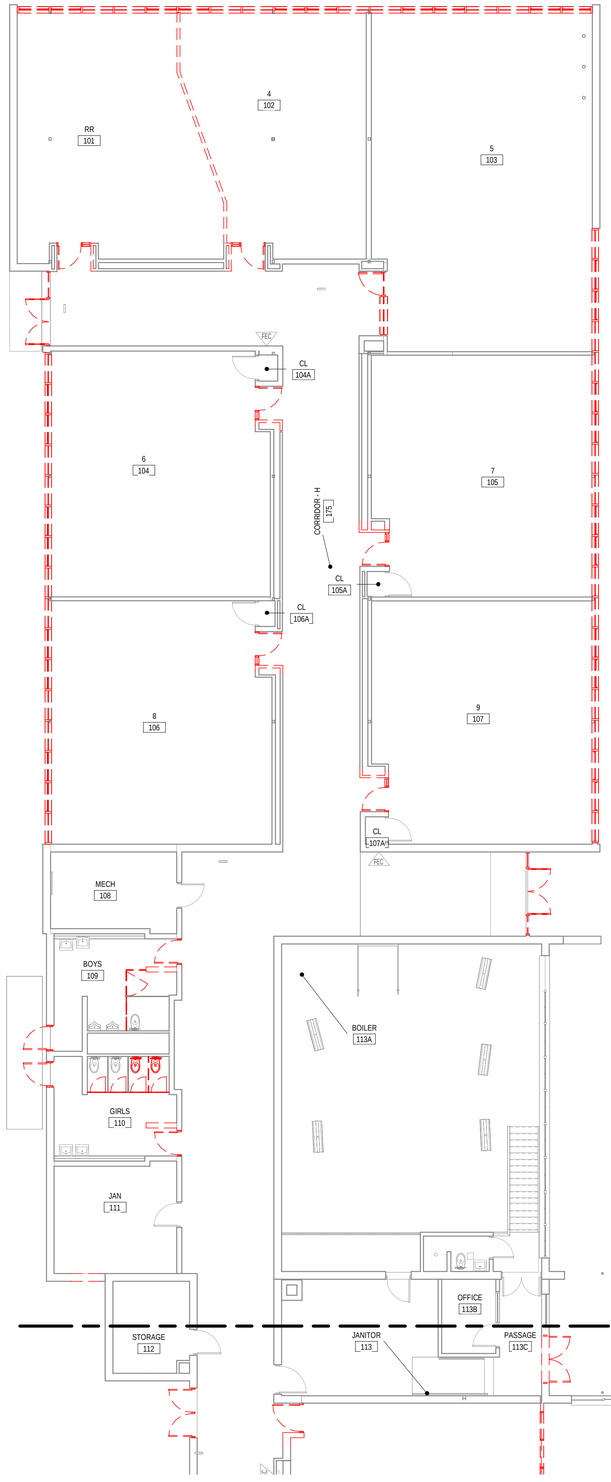


SD - DEMOLITION PLAN - FIRST LEVEL - AREA D

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



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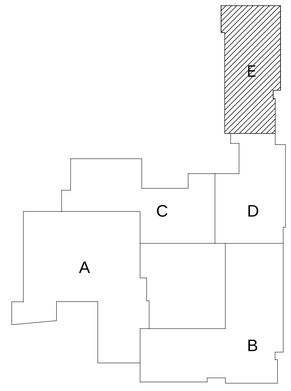
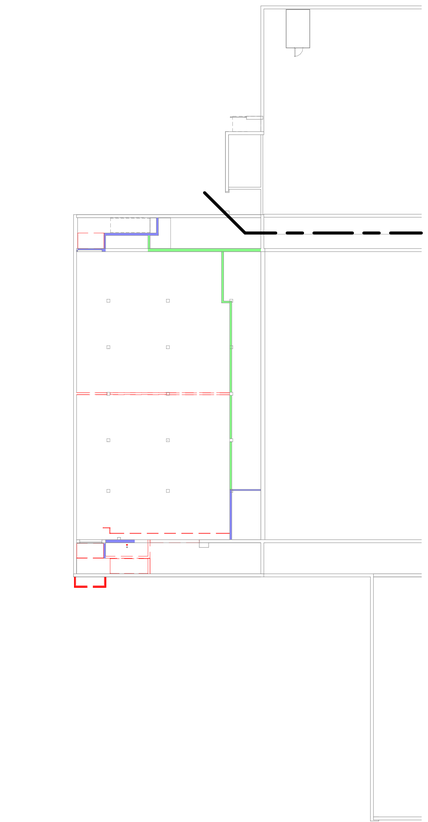


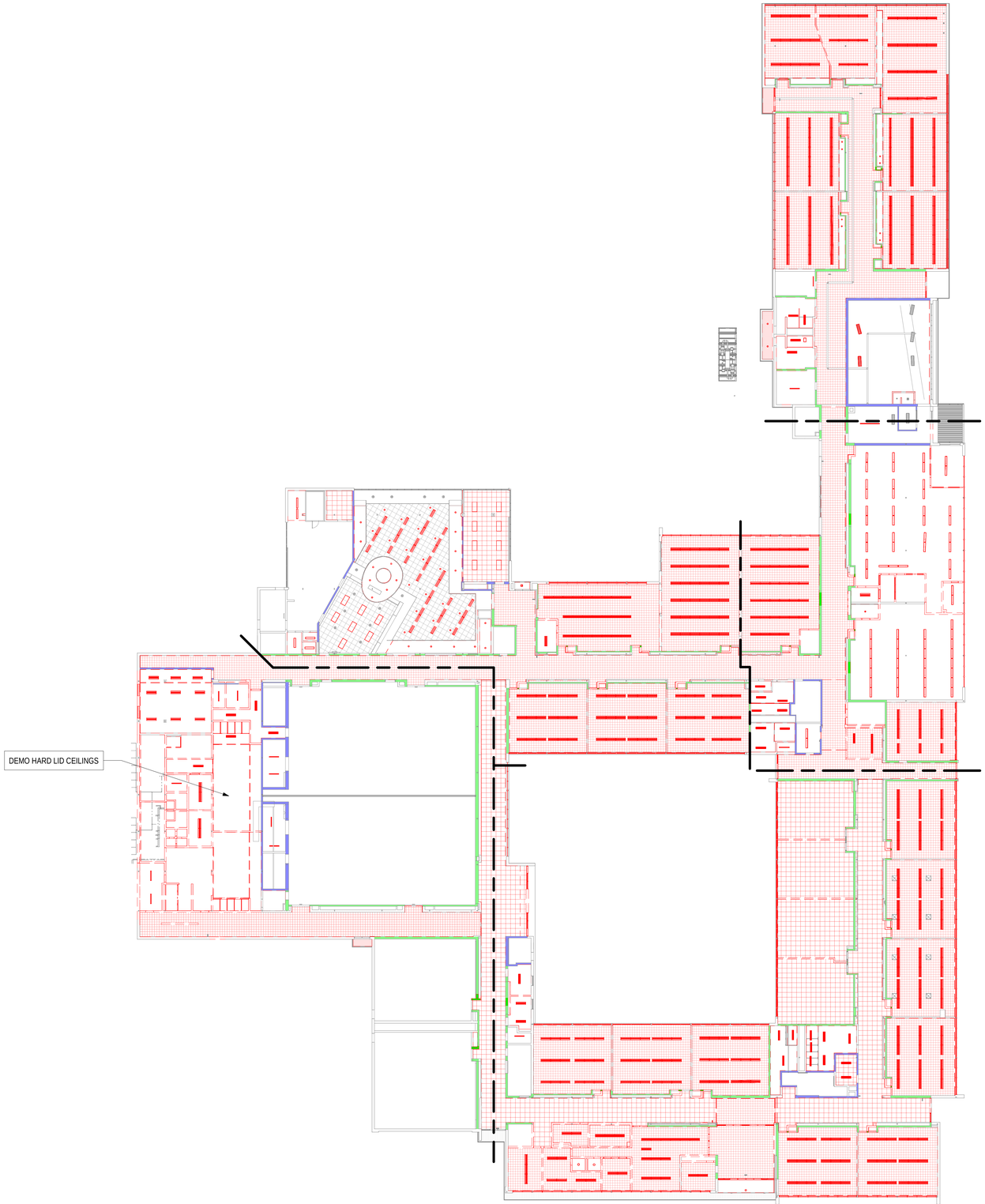
SD - DEMOLITION PLAN - FIRST LEVEL - AREA E

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



DEMOLITION REFLECTED CEILING PLAN - LOWER LEVEL - OVERALL
1" = 20'-0"



DEMOLITION REFLECTED CEILING PLAN - FIRST LEVEL - OVERALL
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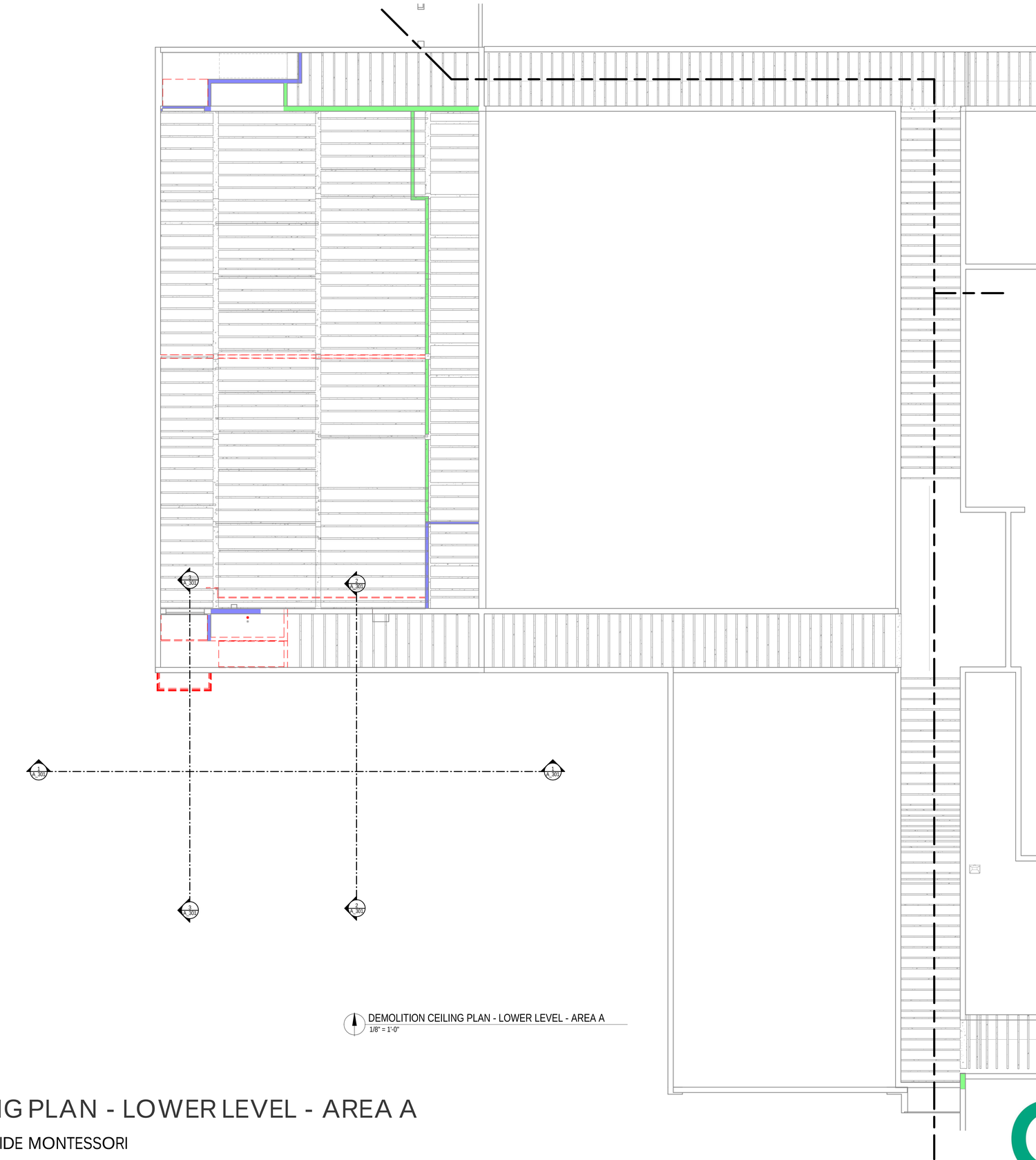
SD - OVERALL DEMOLITION CEILING PLANS

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



DEMOLITION CEILING PLAN - LOWER LEVEL - AREA A
1/8" = 1'-0"

DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
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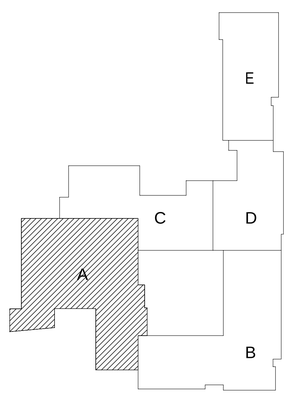

SD - DEMOLITION CEILING PLAN - LOWER LEVEL - AREA A

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

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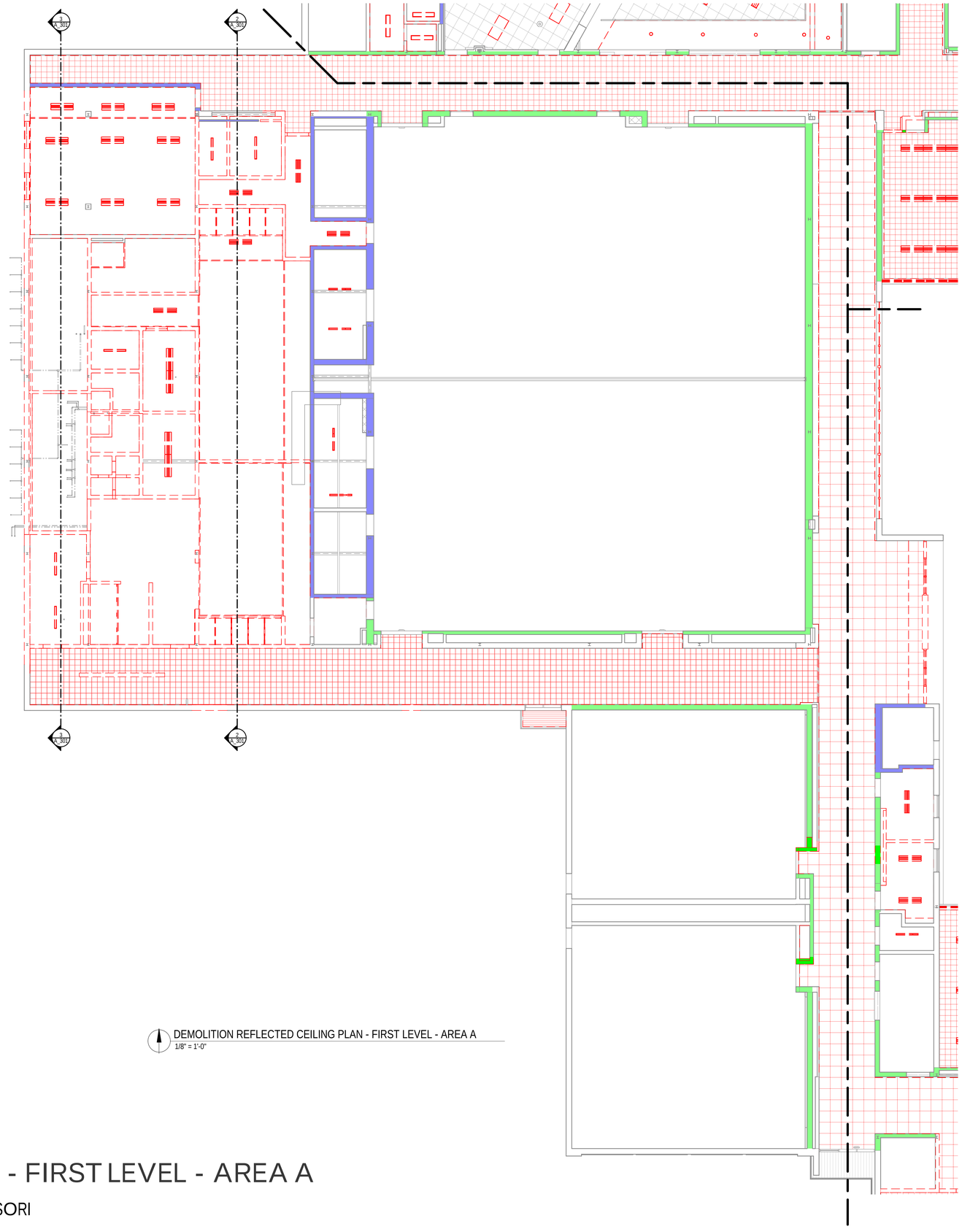

DEMOLITION REFLECTED CEILING PLAN - FIRST LEVEL - AREA A
1/8" = 1'-0"

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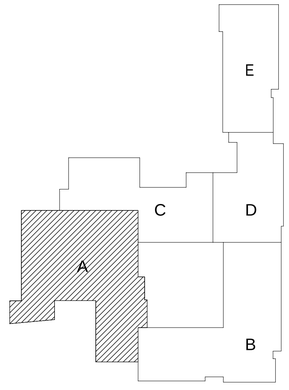

SD - DEMOLITION CEILING PLAN - FIRST LEVEL - AREA A

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025

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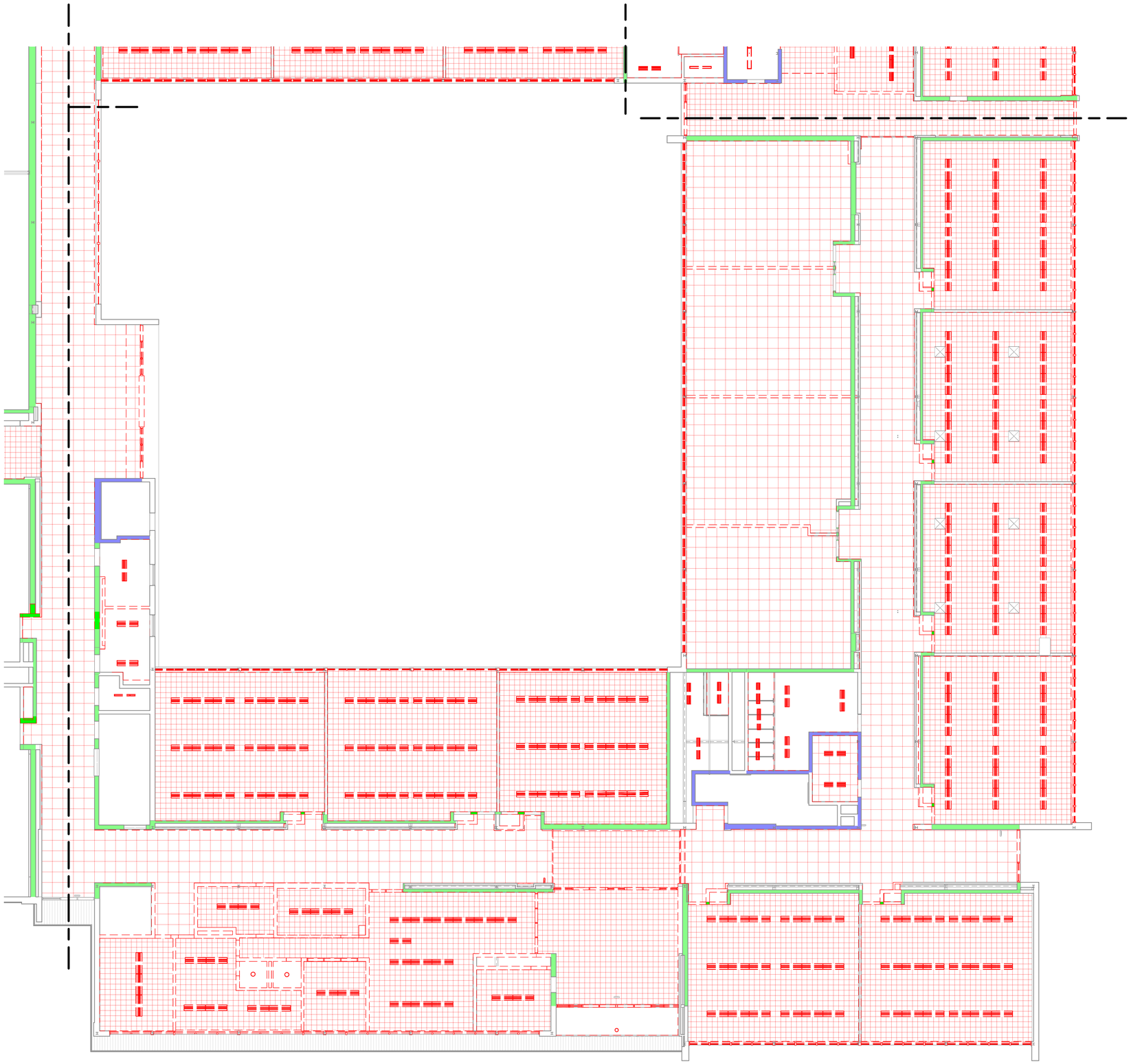

DEMOLITION REFLECTED CEILING PLAN - FIRST LEVEL - AREA B
1/8" = 1'-0"

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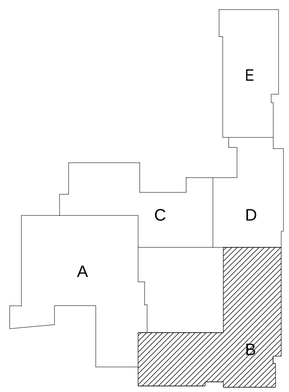

SD - DEMOLITION CEILING PLAN - FIRST LEVEL - AREA B

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

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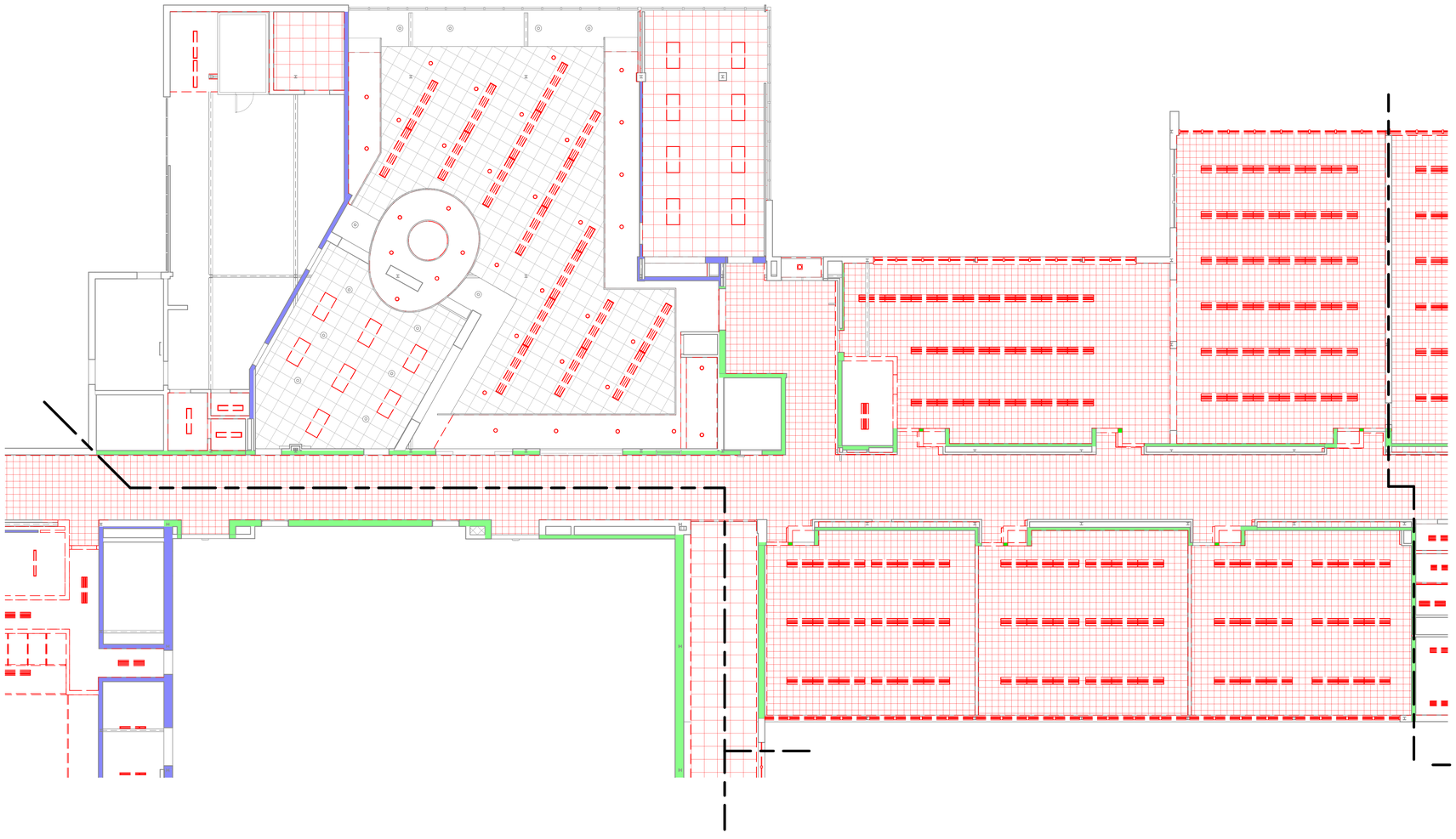

DEMOLITION REFLECTED CEILING PLAN - FIRST LEVEL - AREA C
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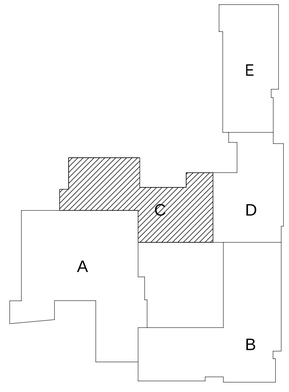
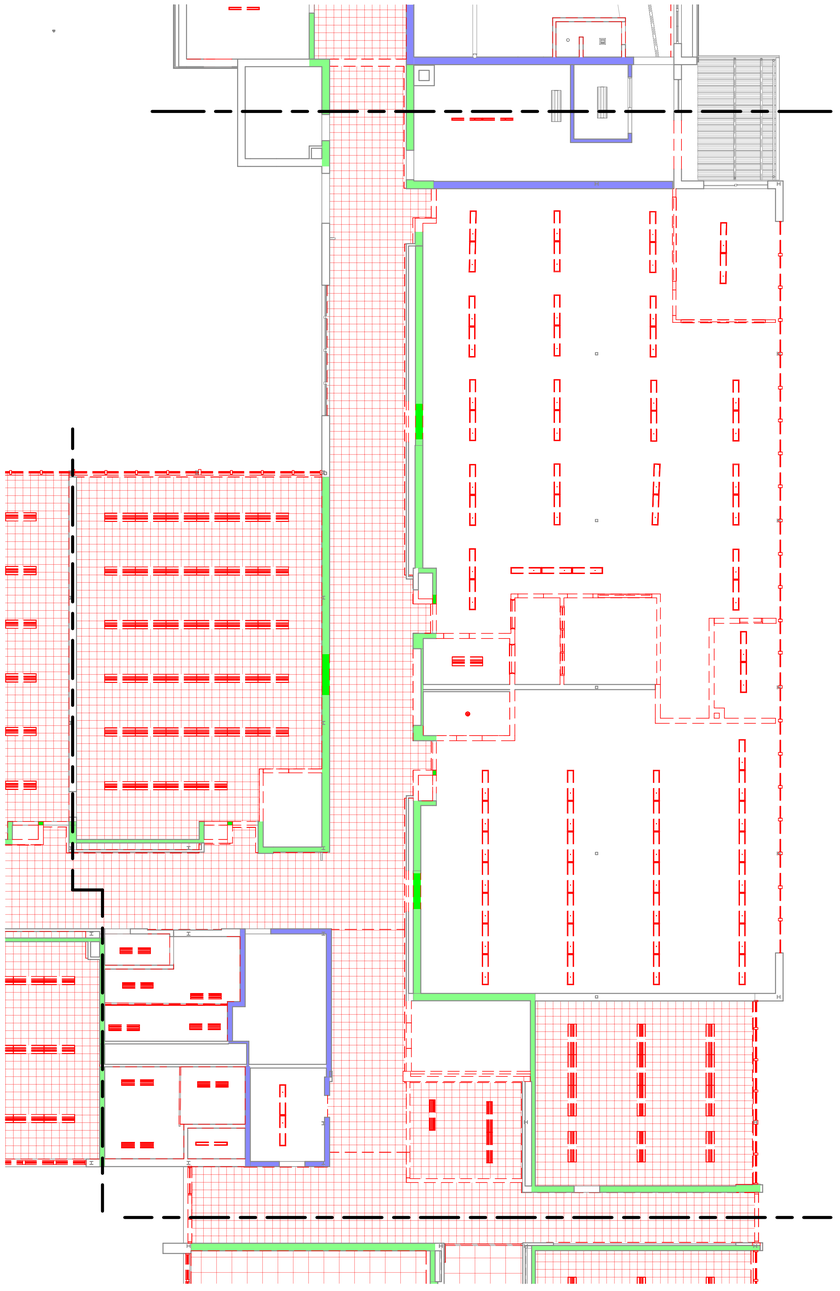
4. CONTRACTORS SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID TO BECOME FAMILIAR WITH EXISTING CONDITIONS.
5. CONTRACTORS ARE TO COORDINATE DEMOLITION WORK WITH OWNER PRIOR TO START OF WORK.
6. U.N.O., PATCH AND PREPARE FLOOR W/ CONCRETE (OR FLORSTONE) TO FLUSH WITH ADJACENT FLOOR SURFACE. FILL ANY SLOPING OR RECESSED AREAS TO LEVEL WITH TYPICAL FINISH FLOOR ELEVATION TO ACCOMMODATE NEW FLOOR COVERINGS.
7. INFILL EXISTING CHASE OPENINGS AND/OR PENETRATIONS IN FLOORS, CEILINGS, OR ROOF DECK. FIRE-RATING OF NEW CONSTRUCTION IS TO MATCH EXISTING.
8. DEMO ALL CEILING AND FLOOR FINISHES.



SD - DEMOLITION CEILING PLAN - FIRST LEVEL - AREA C

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



1 DEMOLITION REFLECTED CEILING PLAN - FIRST LEVEL - AREA D
1/8" = 1'-0"

DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR & FRAME TO BE REMOVED
- EXISTING BUILDING COMPONENT & STRUCTURE TO REMAIN
- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

GENERAL DEMOLITION NOTES:

1. ALL EXISTING ITEMS TO BE RETAINED BY THE OWNER WILL BE REMOVED PRIOR TO DEMOLITION. ANY ITEMS LEFT IN THE DEMOLITION AREA BECOME THE PROPERTY OF THE DEMOLITION CONTRACTOR.
2. REFER TO ALL CONTRACT DOCUMENTS, INCLUDING SPECIFICATIONS, FOR ADDITIONAL DEMOLITION NOTES AND INFORMATION.
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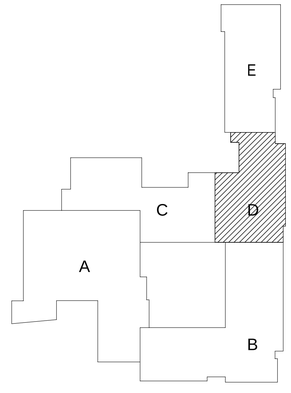
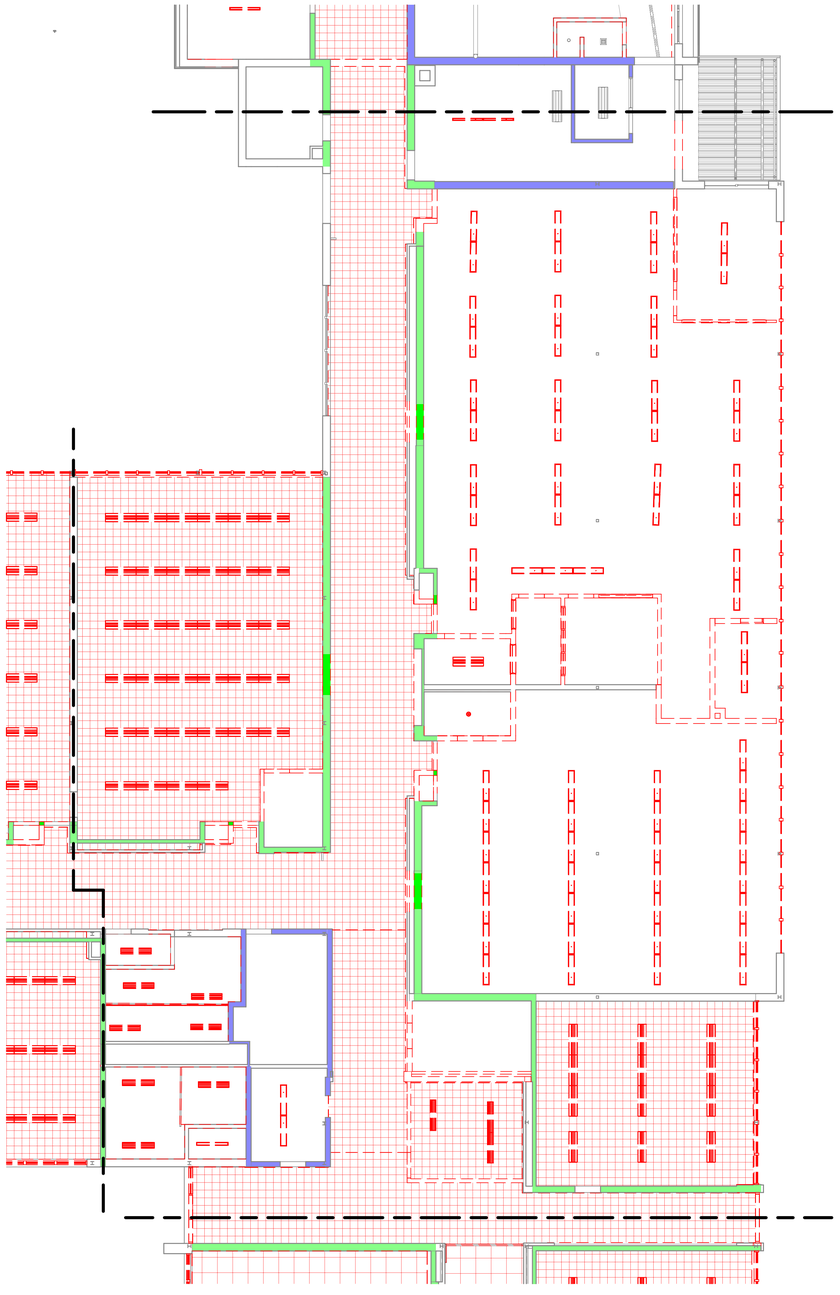


SD - DEMOLITION CEILING PLAN - FIRST LEVEL - AREA D

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025



DEMOLITION REFLECTED CEILING PLAN - FIRST LEVEL - AREA E
1/8" = 1'-0"

DEMO PLAN LEGEND:

- EXISTING WALL OR PARTITION TO REMAIN
- EXISTING WALL/PARTITION OR EXISTING ITEMS TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR & FRAME TO BE REMOVED
- EXISTING BUILDING COMPONENT & STRUCTURE TO REMAIN
- EXISTING ASSEMBLY TO BE REMOVED

NOTE: ALL ITEMS SHOWN DARK AND DASHED ARE TO BE DEMOLISHED- U.N.O.

GENERAL DEMOLITION NOTES:

1. ALL EXISTING ITEMS TO BE RETAINED BY THE OWNER WILL BE REMOVED PRIOR TO DEMOLITION. ANY ITEMS LEFT IN THE DEMOLITION AREA BECOME THE PROPERTY OF THE DEMOLITION CONTRACTOR.
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8. DEMO ALL CEILING AND FLOOR FINISHES.

SD - DEMOLITION CEILING PLAN - FIRST LEVEL - AREA E

GRAND RAPIDS PUBLIC SCHOOLS RIVERSIDE MONTESSORI

27-JAN-2025

APPENDIX E
NESHAP ASBESTOS BUILDING INSPECTION REPORT

NESHAP HAZARDOUS BUILDING MATERIALS INSPECTION REPORT

Report Prepared For:

Grand Rapids Public Schools

Project Site:

Riverside Middle School

Project Dates:

December 2024

***MicroAir Project No.*: MA-151-24**

MicroAir Consulting, LLC ▫ Gowen, Michigan 49326 ▫ (616) 302-0819 ▫ www.microairconsulting.com

January 8, 2025
Project No.: MA-151-24

Mr. Marc Bennett
Director of Projects & Maintenance
Facilities & Operations
Grand Rapids Public Schools
900 Union, NE
Grand Rapids, MI 49503

Micro Air Consulting, LLC
13351 Oakcrest Avenue
Gowen, MI 49326
Phone: 616-302-0819
Web: microairconsulting.com
Email: microairconsulting@gmail.com

RE: NESHAP Hazardous Building Materials Inspection at Riverside Middle School

Dear Mr. Bennett:

MicroAir Consulting, LLC (MicroAir) is pleased to submit this NESHAP Hazardous Building Materials Inspection Report for Riverside Middle School (Riverside). Riverside is located at 265 Elenor Street, NE in in Grand Rapids, Michigan. The inspection was conducted on December 19th & December 27th, 2024.

Please find the enclosed inspection report and supporting documents including our inspection procedures, findings, sample results, and conclusions. This report is for the explicit use of Grand Rapids Public Schools. This document is not intended to be used as an asbestos project design or abatement specification.

MicroAir is glad to be of service to you and your team. If you have any questions or require additional information, please contact me at 616-302-0819 or microairconsulting@gmail.com.
Thank you.

Sincerely,

MicroAir Consulting, LLC

Christian T. Decker

Christian T. Decker, MS
Industrial Hygienist

Grand Rapids Public Schools

Riverside Middle School

NESHAP Hazardous Building Materials Inspection

Report prepared by:

Christin T. Decker

Chris Decker, MS
Industrial Hygienist
Michigan Asbestos Building Inspector, A26685
MicroAir Consulting, LLC

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Appendix B: Digital Photograph Log
Appendix C: Analytical Reports

1.0 EXECUTIVE SUMMARY

MicroAir Consulting was retained by Grand Rapids Public Schools to conduct a NESHAP Hazardous Building Materials Inspection of Riverside Middle School (Riverside). Riverside is located at 265 Elenor Street, NE in Grand Rapids, Michigan. Riverside was constructed in 1956. The inspection was conducted on December 19th, 2024.

A total of eighty-six (82) samples were collected of suspect asbestos-containing building materials at Riverside. The samples collected were from forty-seven (47) homogeneous area building materials identified within Riverside as part of the NESHAP asbestos inspection. Of the samples collected, eight (8) building materials were found to be asbestos-containing. These materials are:

- **Exterior transite soffits and transite window coverings**
- **Exterior window caulking on windows**
- **Fire rated tagged fire doors**
- **Mudded pipe fitting insulation**
- **Interior window glazing**
- **Mudded roof drain insulation**
- **Exterior window glazing**
- **Straight pipe insulation (mag & air cell)**

The following materials are assumed positive as they have not been tested due to the destructive nature of the bulk sampling: Wood floor underlayment, Glue pods associated with wall boards, and Roofing materials.

The nine (9) paint chip samples collected for lead, cadmium, and chromium VI-based paint laboratory analysis. The laboratory reported 2 paints (RSM-Pb-1 & RSM-Pb-8) that are lead-based paints. The remainder of the paints collected resulted in the paints being under the detection limit.

A table of the building materials containing asbestos and assumed asbestos-containing building materials can be found in the tables of this report. The Appendices of this report also contain supporting information including: sampling locations, known ACM locations diagrams, digital photographs of the suspect building materials, and the asbestos and heavy metal-based paint analytical results.

The asbestos-containing building materials, identified in this NESHAP inspection report, that may be disturbed during demolition or renovation activities are required to be removed prior to the commencement of such activities. If suspect ACMs not identified within the report are encountered during demolition or renovation activities for which no analytical data exists, we recommend the material(s) remain undisturbed until the asbestos content of the material(s) is determined in accordance with the United States Environment Protection Act (USEPA) and Occupational Safety and Health Administration (OSHA) regulations.

The OSHA construction standard does not specifically list a concentration that is considered a hazardous level for lead content within building materials. However, the building owner is obligated to inform contractors if lead-based paints are present at the worksite and provide contractors with a copy of the analytical report. The employer of a contractor is required to perform air monitoring for their employees depending on the scope of work. When lead-based paints are present on a worksite, lead-in-air monitoring must be conducted for compliance with the OSHA standard to ensure the employees are not exposed to concentrations above the action level or permissible exposure limit (PEL) for lead-in-air.

2.0 INTRODUCTION

MicroAir Consulting was retained by Grand Rapids Public Schools to conduct a NESHAP Hazardous Building Materials Inspection of Riverside. The inspections intent was to identify asbestos-containing building materials and identify building materials which may be disturbed in any scheduled upcoming renovation or demolition activities. The inspection also included paint chip sampling of painted surfaces inside and outside Riverside. Prior to any renovation/demolition, an inspection is required by the USEPA under the National Emission Standard for Hazardous Air Pollutants (NESHAP) standard and enforced by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) in the State of Michigan. The inspection was conducted by Mr. Chris Decker, a State of Michigan Accredited Building Inspector (A26683) on December 19th, 2024 and January 2, 2025.

Riverside was constructed in 1956. Riverside is an approximately 88,000 square foot educational building and is located at in Grand Rapids, Michigan. Riverside has a tunnel system that runs underneath the building. The exterior siding includes EIFS, concrete block, brick/mortar. The interior walls consist of brick/mortar, plaster, drywall, cement block/mortar, and ceramic/grout. Flooring consists of assorted vinyl floor tiles, terrazzo, wood flooring, ceramic tile, carpet, and bare concrete. The roof is a flat roof membrane system.

Renovation activities took place in 2014. During this renovation, flooring materials were removed from the following rooms: 101, 102, 104, 106, 123, 124, 136, 136A, 136B, 136D, 137, 139, 140, 166, 167, 168, and 171.

3.0 ASBESTOS

3.1 Inspection and Sampling Procedures

MicroAir Consulting conducted a visual assessment, identified, and estimated quantities of suspect ACMs associated with Riverside, and assigned a homogenous area number to each suspect ACM observed. A homogenous area, as defined by USEPA's Asbestos Hazard Emergency Response Act (AHERA, 40 CFR Part 763), is an area of thermal system insulation (TSI), surfacing material, or miscellaneous material that appears uniform in color and texture.

The asbestos bulk samples were submitted to Apex Research, Inc., which is an accredited laboratory by the National Voluntary Laboratory Accreditation Program (NVLAP), for asbestos analysis of the bulk samples via Polarized Light Microscopy (PLM). Results of the submitted asbestos bulk samples are presented in Appendix C.

3.2 Findings and Conclusions

The following table identifies the **confirmed positive for asbestos homogeneous building materials** at Riverside. The table provides the building materials' corresponding identification number, location, and estimated quantity of each identified ACM at Riverside:

Asbestos-Containing Materials at Riverside Middle School (Confirmed Positive)		
HA #	**Materials Description**	**Location / Est. Qty.**
RSM-6	Exterior soffits and window transite	Exterior soffits and above windows (600 SF)
RSM-7	Exterior window caulk	Exterior windows (5,000 LF)

Asbestos-Containing Materials at Riverside Middle School (Confirmed Positive)		
RSM-11	Fire rated tagged fire doors	Exterior doors (14 doors)
RSM-12	Mudded pipe fittings	Boiler rooms/Mechanical Rooms/Tunnels/Hallways/Classrooms/ Locker Rooms (2,000 LF)
RSM-14	Interior window glazing	Boiler Room/Classrooms/Hallways (5,000 LF)
RSM-24	Mudded roof drain insulation	Hallways/Classrooms above ceilings (100 LF)
RSM-39	Exterior window glazing (Room 114)	Exterior windows (5,000 LF)
RSM-47	Straight pipe insulation (mag & air cell)	Tunnels/Hallways/Classrooms (3,400 LF)

The following table identifies the suspect homogeneous building materials that tested negative (None Detected) or less than one percent (<1%) at Riverside:

Tested Building Materials Resulting in Non-Detect for Asbestos at Riverside		
HA #	**Materials Description**	**Est. Qty.**
RSM-1	Brick mortar	>5,000 linear feet
RSM-2	Block mortar	>5,000 linear feet
RSM-3	Concrete	>10,000 square feet
RSM-4	Exterior decorative block mortar	<5,000 linear feet
RSM-5	Exterior decorative slab mortar	<5,000 linear feet
RSM-8	Ceramic grout	<1,000 square feet
RSM-9	Wall and ceiling plaster (Office)	<10,000 square feet
RSM-10	Tan cove base and mastic	<1,000 square feet
RSM-13	1'x1' splined ceiling tile	>10,000 square feet
RSM-15	12"x12" Dark grey floor tile with mastic	<10,000 square feet
RSM-16	Black cove base and mastic	<1,000 square feet
RSM-17	1'x1' ceiling tile (with holes) and glue pod	>10,000 square feet
RSM-18	Light grey cove base and mastic	<1,000 square feet
RSM-19	2'x2' ceiling tile	>10,000 square feet
RSM-20	12"x12" grey with light grey spots floor tile and mastic	<10,000 square feet
RSM-21	Older chalkboards (not tested)	>1,000 square feet
RSM-22	Wood floor underlayment (not tested)	>10,000 square feet
RSM-23	Vibration dampener	>5,000 square feet
RSM-25	Grey cove base and mastic	>1,000 square feet
RSM-26	Grey vinyl stair tread and mastic	>1,000 square feet
RSM-27	12"x12" floor tile (tan with squares) and mastic	>5,000 square feet
RSM-28	Red vinyl stair tread and mastic	<1,000 square feet
RSM-29	Roofing materials (not tested)	<10,000 square feet
RSM-30	Plaster ceiling in the Boiler Room	>1,000 square feet
RSM-31	Boiler #3 gasket	100 linear feet
RSM-32	Boiler #2 – Outer insulation	800 square feet

Tested Building Materials Resulting in Non-Detect for Asbestos at Riverside		
HA #	**Materials Description**	**Est. Qty.**
RSM-33	Textured drywall above lockers	>1,000 square feet
RSM-34	Red 12"X12" floor tile	>1,000 square feet
RSM-35	Drywall, tape, and mud	>5,000 square feet
RSM-36	Wall & ceiling plaster (rm. 166A)	>10,000 square feet
RSM-37	Dark blue 12"x12" floor tile and mastic (health office)	>1,000 square feet
RSM-38	Grey with grey spots 12"x12" floor tile and mastic (rm. 101)	>1,000 square feet
RSM-40	Light grey 12"x12" floor tile and mastic (rm. 115)	>1,000 square feet
RSM-41	Light blue 12"x12" floor tile and mastic	>1,000 square feet
RSM-42	Brown and tan 12"x12" floor tile and mastic (rm. 166A)	>1,000 square feet
RSM-43	2'x2' suspended ceiling tile (lower game room)	>1,000 square feet
RSM-44	Sink undercoating	300 square feet
RSM-45	Pink 12"x12" floor tile and mastic	<1,000 square feet
RSM-46	Roof flashing (not tested)	<5,000 square feet

Quantities in the tables above represent building materials that were accessible at the time of the inspection. Additional quantities and building materials may exist that were not accessible at the time of the inspection based on the project scope. Refer to the tables and appendices of this inspection report for further information and details.

4.0 Lead-Based Paint and Other Metals

4.1 Inspection and Sampling Procedures

MicroAir conducted a visual assessment and identified commonly painted surfaces in the building likely to be impacted by renovation/demolition activities. During the inspection, a total of nine (9) paint chip samples were collected for lead-based paint, cadmium, and chromium analysis at Riverside. The samples were submitted to APEX Research Inc., which is accredited by the American Industrial Hygiene Associates (AIHA) Environmental Lead Laboratory Accreditation Program (ELLAP), for paint chip analysis via flame atomic absorption (FAA).

4.2 Findings and Conclusions

The paint chip samples collected inside Riverside resulted in all nine paints being less than the detection limit. The analytical data for the paint chip samples is included in Appendix C of this report.

A summary of the paint color, substrate, and paint locations, as well as lead content of the paint chip samples are presented in the table below:

Suspect Lead-Based Paint Chip Sampling Results at Riverside Middle School					
Sample #	**Paint Description / Substrate**	**Location**	**Lead Conc.**	**Cd Conc.**	**Cr-VI Conc.**
RSM-Pb-1	Orange on block walls	Hallways	<3.80 %	<0.05%	0.60%
RSM-Pb-2	White on walls and ceilings / plaster-block-drywall	Classrooms/Hallways	<0.05 %	<0.05 %	<0.05 %
RSM-Pb-3	Blue on block walls	Hallways	<0.03 %	<0.03 %	<0.03 %

Suspect Lead-Based Paint Chip Sampling Results at Riverside Middle School					
Sample #	**Paint Description / Substrate**	**Location**	**Lead Conc.**	**Cd Conc.**	**Cr-VI Conc.**
RSM-Pb-4	Blue on steel lockers	Lockers	<0.05 %	<0.05 %	<0.05 %
RSM-Pb-5	White ceiling on steel roof deck	Roof deck (Boiler room)	0.12 %	<0.01 %	<0.01 %
RSM-Pb-6	Brown on doors, door frames, and window frames	Hallways	0.38 %	<0.09 %	<0.09 %
RSM-Pb-7	Beige walls / plaster-drywall	Classrooms	<0.01 %	<0.01 %	<0.01 %
RSM-Pb-8	Yellow walls / plaster-drywall	Classrooms	3.48 %	<0.04%	0.45%
RSM-Pb-9	Tan on doors, door frames, and window frames	Hallways and classrooms	<0.13 %	<0.13 %	<0.13 %

The OSHA construction standard does not specifically list the concentration of lead-based paint that is considered a hazardous level within a building material. The building owner is obligated to inform any contractors that lead was detected at the site and provide them with a copy of the laboratory analytical report. The employer of contractor is required to perform lead-in-air monitoring for their employees, depending on the scope of work, when lead-based paint is present on a project site (if required). Contractors that disturbing these painted building materials are responsible for performing lead-safe work practices.

The OSHA Lead Exposure in Construction Standard (29 CFR Part 1926.62 is applicable to construction activities when lead is present regardless of the concentration of lead in the paint. Lead-based paint could pose inhalation or ingestion exposure hazards if subjected to torch cutting, welding/burning, or if pulverized.

The OSHA 29 CFR 1910.1027 and Part 309 Cadmium Exposure in Construction Standard states that any paint with a cadmium content above the analytical detection limit (ADL) is considered cadmium based by OSHA and LARA. The PEL for cadmium is 5 ug/m3 in an 8-hour period.

The OSHA 29 CFR 1910.1026 and Part 604 Chromium (VI) Exposure in Construction Standard states that any paint with a chromium VI content above the analytical detection limit (ADL) is considered hexavalent chromium based by OSHA and the Michigan Department of License and Regulatory Affairs (LARA). The PEL for hexavalent chromium is 5 ug/m3 in an 8-hour period.

When lead-based paint is present at any concentration above the detection limit, employers are required to assess their workers' exposures to airborne lead dust/fumes. The employer must perform an exposure assessment to determine if any employee is exposed at or above the action level or permissible exposure limit as calculated over a time-weighted average (TWA).

5.0 REGULATORY COMPLIANCE AND OBLIGATIONS

The OSHA Asbestos Standard for Construction, (29 CFR 1926.1101), MIOSHA Part 305, and the OSHA Asbestos Standard for General Industry, (29 CFR 1910.1001), requires that all building facilities (excluding owner-occupied residential homes) constructed prior to 1981, where employees may enter, work, or contact building materials must be inspected for asbestos-containing building materials.

Buildings scheduled for renovation or demolition must have an asbestos building inspection completed prior to the start of the renovation or demolition. The inspection must be performed by a Michigan accredited asbestos building inspector. The building inspections must also include the presence, location, and quantity of all suspected building materials.

The Michigan Asbestos Abatement Contractors Licensing Act (i.e., Act 135, P.A. 1986, as amended) requires asbestos abatement contractors to notify the Michigan Labor and Economic Opportunity (MLEO) Asbestos Program of any asbestos abatement project exceeding 10 linear feet or 15 square feet, or both, of friable asbestos building materials. This requires a 10-calendar day notice.

The Notification of Intent to Demolish form required by the USEPA NESHAP regulations must be prepared and submitted to EGLE at least 10 working days prior to demolition of a building, regardless of whether or not ACMs are present in the building. If ACM is present and included for removal and the quantity is greater than 260 linear feet and/or 160 square feet, a 10 working-day notice is required.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The asbestos-containing building materials identified in this inspection are as follows:

- **Exterior transite soffits and transite window coverings**
- **Exterior window caulking on windows**
- **Fire rated tagged fire doors**
- **Mudded pipe fitting insulation**
- **Interior window glazing**
- **Mudded roof drain insulation**
- **Exterior window glazing**
- **Straight pipe insulation (mag & air cell)**

If these materials are to be disturbed during renovation/demolition activities, they are required to be removed prior to the commencement of those activities by a State of Michigan accredited asbestos abatement contractor.

MicroAir recommends that the asbestos-containing building materials identified in this inspection that may be disturbed during the demolition activities be handled and removed by a State of Michigan accredited asbestos abatement contractor due to the required training, engineering controls, and best industry practices.

We recommend that an asbestos abatement project design be developed by a State of Michigan accredited Asbestos Project Designer prior to any abatement or demolition/renovation activities begin. Additionally, we recommend the building owner hire an on-site consultant and hygienist to perform third-party asbestos air monitoring and oversight during the abatement process.

If suspect ACMs not identified within the report are encountered during demolition activities for which no analytical data exists, we recommend the material(s) remain undisturbed until the asbestos content of the material(s) is determined in accordance with USEPA and OSHA regulations. Our estimated quantities and other information in this inspection report should not be used as an exclusive source of information for bid formulation or for notification to regulatory agencies.
Any contractor performing work within the building must have adequate and up-to-date asbestos and lead awareness training. The building owner is obligated to inform any contractors that lead-based

paint and/or asbestos was detected at the project site and provide them with a copy of the analytical report.

The employer of any contractor that may be impacting building materials containing lead-based paint must perform exposure monitoring on their employees to comply with the OSHA construction standard.

7.0 LIMITATIONS

Materials may be found inside wall cavities and in ceiling cavities that were inaccessible at the time of the inspection. Roofing materials were not tested at the time of the inspection.

In conducting the ACM inspection there are a number of obstacles and limitations that can affect the final outcome of the report. These limitations include but are not limited to the following factors: access concerns, materials that cannot be intrusively sampled or damaged, materials that have been replaced by renovation activities, materials with conflicting laboratory results, and materials that are located in inaccessible and/or concealed areas which limits its quantification. Due to these limitations, the results of this investigation cannot be construed as a certification of the presence or absence of ACM, beyond the materials identified, but rather a diligent and prudent review of available data within an established work scope, and time and budgetary constraints.

If you have any questions or require additional information, please contact me at 616-302-0819 or microairconsulting@gmail.com. Thank you.

End of report

APPENDIX A

Drawing Showing Sample Locations

Grand Rapids Public Schools

DRAWING UPDATED: 09-30-03
ORIGINAL BUILDING: 1956
ADDITION(S):

SCHOOL ADDRESS:
265 ELEANOR NE
GRAND RAPIDS, MI. 49505
PH: 771.2969 FAX: 771.2981

N

Riverside South

FLOOR LEVEL
1st
88380 SF

APPENDIX B

Site Photograph Log

Site Photograph Log

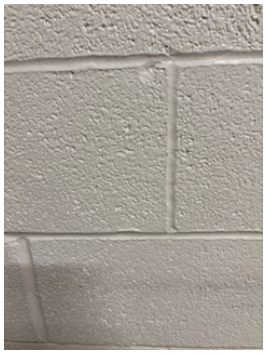
Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24

Exterior View of Riverside Middle School

HA #: RSM-1

MATERIAL DESCRIPTION
Brick mortar

ADDITIONAL NOTES
This material does not contain asbestos.



HA #: RSM-2

MATERIAL DESCRIPTION
Block mortar

ADDITIONAL NOTES
This material does not contain asbestos.

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24

HA #: RSM-3

MATERIAL DESCRIPTION
Concrete

ADDITIONAL NOTES
This material does not contain asbestos.

HA #: RSM-6

MATERIAL DESCRIPTION
Exterior soffits and window transite

ADDITIONAL NOTES
This material **contains asbestos**.

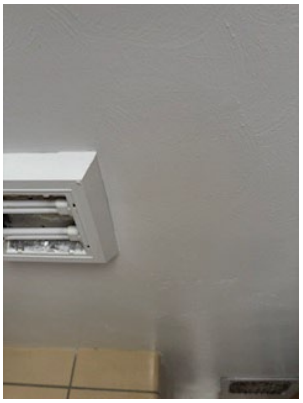
HA #: RSM-7

MATERIAL DESCRIPTION
Exterior window caulk

ADDITIONAL NOTES
The material does not contain asbestos

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24



HA #: RSM-9

MATERIAL DESCRIPTION
Wall and ceiling plaster (Office)

ADDITIONAL NOTES
The material does not contain asbestos

HA #: RSM-11

MATERIAL DESCRIPTION
Fire rated tagged fire doors

ADDITIONAL NOTES
This material **contains asbestos**.

HA #: RSM-12

MATERIAL DESCRIPTION
Mudded pipe fittings on fiberglass lines

ADDITIONAL NOTES
This material **contains asbestos**.

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24

HA #: RSM-13

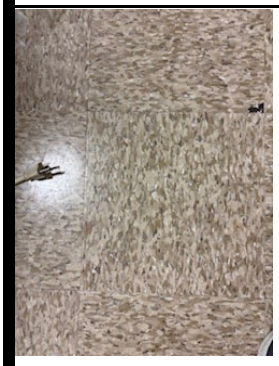
MATERIAL DESCRIPTION
1'X1' splined ceiling tile

ADDITIONAL NOTES
This material does not contain asbestos.

HA #: RSM-14

MATERIAL DESCRIPTION
Interior window glazing

ADDITIONAL NOTES
This material **contains asbestos**.



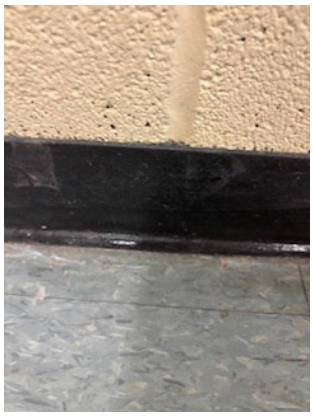
HA #: RSM-15

MATERIAL DESCRIPTION
Dark grey 12"x12" floor tile and mastic

ADDITIONAL NOTES
These materials do not contain asbestos

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24



HA #: RSM-16

MATERIAL DESCRIPTION
Black cove base and mastic

ADDITIONAL NOTES
The material does not contain asbestos

HA #: RSM-17

MATERIAL DESCRIPTION
1'x1' ceiling tile (with holes) and glue pod

ADDITIONAL NOTES
The material does not contain asbestos

HA #: RSM-19

MATERIAL DESCRIPTION
2'X2' suspended ceiling tile

ADDITIONAL NOTES
The material does not contain asbestos

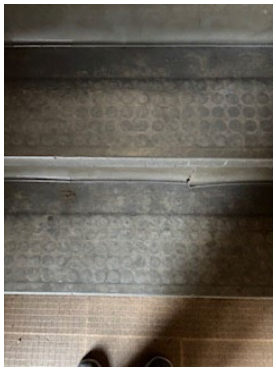
Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24

HA #: RSM-20

MATERIAL DESCRIPTION
12”x12” grey with light grey spots and mastic

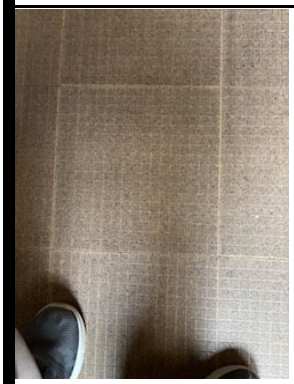
ADDITIONAL NOTES
This material does not contain asbestos.



HA #: RSM-26

MATERIAL DESCRIPTION
Grey stair tread

ADDITIONAL NOTES
The material does not contain asbestos



HA #: RSM-27

MATERIAL DESCRIPTION
12”x12” floor tile (tan with squares) and mastic

ADDITIONAL NOTES
The material does not contain asbestos

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24

HA #: RSM-28

MATERIAL DESCRIPTION
Red vinyl stair tread and mastic

ADDITIONAL NOTES
The material does not contain asbestos

HA #: RSM-30

MATERIAL DESCRIPTION
Plaster ceiling in the boiler room

ADDITIONAL NOTES
The material does not contain asbestos

HA #: RSM-32

MATERIAL DESCRIPTION
Boiler #2 Outer insulation

ADDITIONAL NOTES
The material does not contain asbestos

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24

HA #: RSM-33

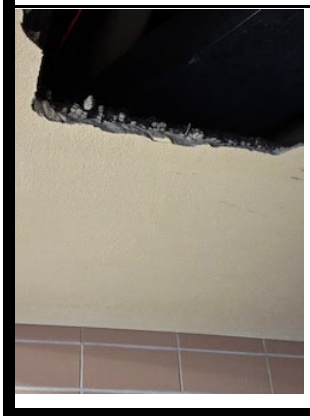
MATERIAL DESCRIPTION
Textured drywall above lockers

ADDITIONAL NOTES
This material does not contain asbestos.

HA #: RSM-35

MATERIAL DESCRIPTION
Drywall, tape, and mud

ADDITIONAL NOTES
The material does not contain asbestos



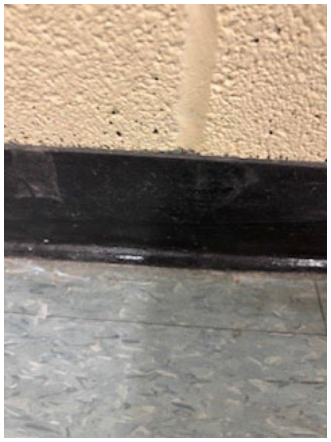
HA #: RSM-36

MATERIAL DESCRIPTION
Wall and ceiling plaster

ADDITIONAL NOTES
The material does not contain asbestos

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24



HA #: RSM-37

MATERIAL DESCRIPTION
Dark blue 12”x12” floor tile and mastic

ADDITIONAL NOTES
The material does not contain asbestos

HA #: RSM-38

MATERIAL DESCRIPTION
Grey with grey spots 12”x12” floor tile and mastic

ADDITIONAL NOTES
The material does not contain asbestos

HA #: RSM-39

MATERIAL DESCRIPTION
Exterior window glazing

ADDITIONAL NOTES
This material **contains asbestos**.

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24

HA #: RSM-24

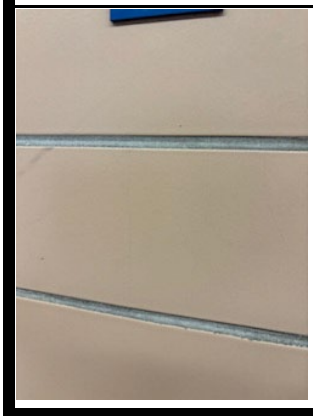
MATERIAL DESCRIPTION
Mudded roof drain insulation

ADDITIONAL NOTES
This material **contains asbestos**

HA #: RSM-43

MATERIAL DESCRIPTION
2'x2' suspended ceiling tile

ADDITIONAL NOTES
The material does not contain asbestos



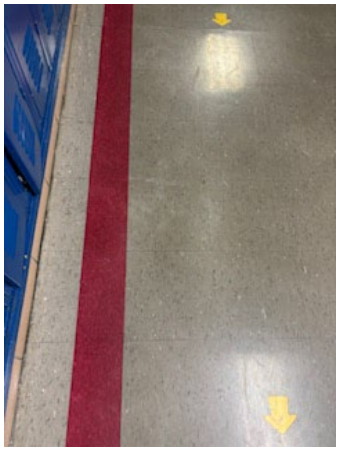
HA #: RSM-8

MATERIAL DESCRIPTION
Ceramic grout

ADDITIONAL NOTES
The material does not contain asbestos

Site Photograph Log

Client Name: Grand Rapids Public Schools
Project Name: Riverside Middle School
MicroAir Project No.: MA-151-24



HA #: RSM-34

MATERIAL DESCRIPTION
Red 12”x12” floor tile and mastic

ADDITIONAL NOTES
The material does not contain asbestos

APPENDIX C

Analytical Reports

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 01 Cust. #: RSM-1 Material: Brick Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 02 Cust. #: RSM-3 Material: Concrete Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 03 Cust. #: RSM-4 Material: Decorative Block Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 04 Cust. #: RSM-5 Material: Decorative Slab Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 05 Cust. #: RSM-6-1 Material: Ext. Entrance Overhead Plaster Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 2%	Other - 98%
Lab ID #: 87005 - 06 Cust. #: RSM-6-2 Material: Ext. Entrance Overhead Plaster Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 07 Cust. #: RSM-6-3 Material: Ext. Entrance Overhead Plaster Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 87005 - 08 Cust. #: RSM-7 Material: Exterior Window Caulk Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 5%	Other - 95%
Lab ID #: 87005 - 09 Cust. #: RSM-8 Material: Ceramic Grout Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

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Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 10 Cust. #: RSM-9-1 Material: Plaster Finish Coat Wall/Ceiling Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 10a Cust. #: RSM-9-1 Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 11 Cust. #: RSM-9-2 Material: Plaster Base Coat Wall/Ceiling Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 12 Cust. #: RSM-9-3 Material: Plaster Finish Coat Wall/Ceiling Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 12a Cust. #: RSM-9-3 Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 13 Cust. #: RSM-9-4 Material: Plaster Finish Coat Wall/Ceiling Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Project : GRPS- Riverside MS

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Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 13a Cust. #: RSM-9-4 Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 14 Cust. #: RSM-9-5 Material: Plaster Finish Coat Wall/Ceiling Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 14a Cust. #: RSM-9-5 Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 15 Cust. #: RSM-9-6 Material: Plaster Finish Coat Wall/Ceiling Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 15a Cust. #: RSM-9-6 Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 16 Cust. #: RSM-9-7 Material: Plaster Texture Wall/Ceiling Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 16a Cust. #: RSM-9-7 Material: Plaster Finish Coat Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 17 Cust. #: RSM-10 Material: Tan Cove Base Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 87005 - 17a Cust. #: RSM-10 Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 18 Cust. #: RSM-12-1 Material: Mudded Pipe Fittings Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 15%	Cellulose - 10% Mineral Wool - 5% Fiberglass - 20% Other - 50%
Lab ID #: 87005 - 19 Cust. #: RSM-12-2 Material: Mudded Pipe Fittings Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 87005 - 20 Cust. #: RSM-12-3 Material: Mudded Pipe Fittings Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : GRPS- Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87005
Date Collected: 10/13/19
Date Received: 10/18/19
Date Analyzed: 10/21/19
Date Reported: 10/21/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87005 - 21 Cust. #: RSM-13 Material: 1x1 Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 95% Other - 5%
Lab ID #: 87005 - 22 Cust. #: RSM-14 Material: Interior Window Glaze Location: Appearance: beige,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 2%	Other - 98%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples tested and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification,approval, or endorsement by NVLAP, NIST, or any agency of the US Government. APEX Research Inc. is not responsible for the accuracy of the results for layered samples or samples comprising multiple materials. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project : Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
P.O. Box 908
Greenville, MI 48838

ARI Report # 19-87657
Date Collected: 11/25/19
Date Received: 11/27/19
Date Analyzed: 11/27/19
Date Reported: 11/29/19

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 87657 - 01 Cust. #: RSM-17 Material: 1x1 Ceiling Tile Location: Appearance: brown,fibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 87657 - 01a Cust. #: RSM-17 Material: Glue Pod Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
13351 Oakcrest Avenue
Gowen, MI 49326

ARI Report # 24-115082
Date Collected: 12/18/24
Date Received: 12/23/24
Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 01 Cust. #: RSM-30-1 Material: Plaster Finish Coat Ceiling Location: Boiler Room Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 01a Cust. #: RSM-30-1 Material: Plaster Base Coat Location: Boiler Room Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 115082 - 02 Cust. #: RSM-30-2 Material: Plaster Finish Coat Ceiling Location: Boiler Room Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
13351 Oakcrest Avenue
Gowen, MI 49326

ARI Report # 24-115082
Date Collected: 12/18/24
Date Received: 12/23/24
Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 02a Cust. #: RSM-30-2 Material: Plaster Base Coat Location: Boiler Room Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 03 Cust. #: RSM-30-3 Material: Plaster Finish Coat Ceiling Location: Boiler Room Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 03a Cust. #: RSM-30-3 Material: Plaster Base Coat Location: Boiler Room Appearance: grey,fibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 04 Cust. #: RSM-31-1 Material: Gasket Location: Boiler #3 Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Fiberglass - 90% Other - 10%
Lab ID #: 115082 - 05 Cust. #: RSM-31-2 Material: Gasket Location: Boiler #3 Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Fiberglass - 90% Other - 10%
Lab ID #: 115082 - 06 Cust. #: RSM-31-3 Material: Gasket Location: Boiler #3 Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 40% Fiberglass - 40% Other - 20%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 07 Cust. #: RSM-32-1 Material: Outer Insulation Location: Boiler #2 Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Fiberglass - 90% Other - 10%
Lab ID #: 115082 - 08 Cust. #: RSM-32-2 Material: Outer Insulation Location: Boiler #2 Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 30% Fiberglass - 40% Other - 30%
Lab ID #: 115082 - 09 Cust. #: RSM-32-3 Material: Outer Insulation Location: Boiler #2 Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 30% Fiberglass - 40% Other - 30%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 10 Cust. #: RSM-33-1 Material: /Plaster Finish Coat Location: Above Lockers Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 10a Cust. #: RSM-33-1 Material: Plaster Base Coat Location: Above Lockers Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 11 Cust. #: RSM-33-2 Material: Textured Drywall Location: Above Lockers Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Fiberglass - 5% Other - 95%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 12 Cust. #: RSM-33-3 Material: Textured Drywall Location: Above Lockers Appearance: white,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 40% Other - 60%
Lab ID #: 115082 - 13 Cust. #: RSM-33-4 Material: Textured Drywall Location: Above Lockers Appearance: grey,fibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 115082 - 13a Cust. #: RSM-33-4 Material: Joint Compound Location: Above Lockers Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 14 Cust. #: RSM-33-5 Material: Textured Drywall Location: Above Lockers Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 115082 - 15 Cust. #: RSM-33-6 Material: Texture Location: Above Lockers Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 16 Cust. #: RSM-33-7 Material: Textured Drywall Location: Above Lockers Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 17 Cust. #: RSM-34 Material: Red 12"x12" Floor Tile Location: Appearance: red,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 18 Cust. #: RSM-23-1 Material: Vibration Dampener Location: Appearance: green,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 65% Other - 35%
Lab ID #: 115082 - 19 Cust. #: RSM-23-2 Material: Vibration Dampener Location: Appearance: green,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 65% Other - 35%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 20 Cust. #: RSM-23-3 Material: Vibration Dampener Location: Appearance: green,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 115082 - 21 Cust. #: RSM-35-1 Material: Drywall/Plaster Finish Coat Location: Room 121 Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 21a Cust. #: RSM-35-1 Material: Plaster Base Coat Location: Room 121 Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 22 Cust. #: RSM-35-2 Material: Drywall Location: Room 123 Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 2% Fiberglass - 2% Other - 96%
Lab ID #: 115082 - 23 Cust. #: RSM-35-3 Material: Drywall Location: Room 123 Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 2% Other - 98%
Lab ID #: 115082 - 24 Cust. #: RSM-35-4 Material: Drywall Location: Room 125 Appearance: white,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 24a Cust. #: RSM-35-4 Material: Mud Location: Room 125 Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 24b Cust. #: RSM-35-4 Material: Tape Location: Room 125 Appearance: brown,fibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 60% Other - 40%
Lab ID #: 115082 - 25 Cust. #: RSM-35-5 Material: Joint Compound Location: Room 125 Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 25a Cust. #: RSM-35-5 Material: Plaster Finish Coat Location: Room 125 Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 26 Cust. #: RSM-35-6 Material: Joint Compound Location: Room 112 Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 26a Cust. #: RSM-35-6 Material: Tape Location: Room 112 Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 65% Other - 35%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 27 Cust. #: RSM-35-7 Material: Joint Compound Location: Room 112 Appearance: grey,fibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 27a Cust. #: RSM-35-7 Material: Tape Location: Room 112 Appearance: beige,fibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 115082 - 28 Cust. #: RSM-36-1 Material: Wall & Ceiling Plaster Base Coat Location: Locker Room Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 29 Cust. #: RSM-36-2 Material: Wall & Ceiling Plaster Finish Coat Location: Classrooms Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 29a Cust. #: RSM-36-2 Material: Plaster Base Coat Location: Classrooms Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 30 Cust. #: RSM-36-3 Material: Wall & Ceiling Plaster Base Coat Location: Classrooms Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 31 Cust. #: RSM-36-4 Material: Wall & Ceiling Plaster Finish Coat Location: Room 166A Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 31a Cust. #: RSM-36-4 Material: Plaster Base Coat Location: Room 166A Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 32 Cust. #: RSM-36-5 Material: Wall & Ceiling Plaster Finish Coat Location: Room 166A Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 32a Cust. #: RSM-36-5 Material: Plaster Base Coat Location: Room 166A Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 33 Cust. #: RSM-36-6 Material: Wall & Ceiling Plaster Finish Coat Location: Media Center Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 33a Cust. #: RSM-36-6 Material: Plaster Base Coat Location: Media Center Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 34 Cust. #: RSM-36-7 Material: Wall & Ceiling Plaster Base Coat Location: Media Center Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 35 Cust. #: RSM-15 Material: Dark Grey 12"x12" Floor Tile Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 35a Cust. #: RSM-15 Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

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Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: Riverside MS

Report To:
Mr. Chris Decker
MicroAir Consulting
13351 Oakcrest Avenue
Gowen, MI 49326

ARI Report # 24-115082
Date Collected: 12/18/24
Date Received: 12/23/24
Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 36 Cust. #: RSM-16 Material: Black Cove Base Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 36a Cust. #: RSM-16 Material: Mastic Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 37 Cust. #: RSM-18 Material: Gray Cove Base Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Robert T. Letarte Jr., Laboratory Director

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Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 37a Cust. #: RSM-18 Material: Glue Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 38 Cust. #: RSM-26 Material: Vinyl Stair Tread (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 38a Cust. #: RSM-26 Material: Mastic Location: Appearance: beige,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Robert T. Letarte Jr., Laboratory Director

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Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 39 Cust. #: RSM-27 Material: Tan 12"x12" Floor Tile Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 39a Cust. #: RSM-27 Material: Mastic Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 40 Cust. #: RSM-28 Material: Red Vinyl Stair Tread Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Robert T. Letarte Jr., Laboratory Director

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Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 40a Cust. #: RSM-28 Material: Mastic Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 41 Cust. #: RSM-37 Material: Dark Blue 12"x12" Floor Tile Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 41a Cust. #: RSM-37 Material: Mastic Location: Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Robert T. Letarte Jr., Laboratory Director

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ARI Report # 24-115082
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Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 42 Cust. #: RSM-38 Material: Grey w/ Light Grey Spots 12"x12" Floor Til Location: Room 101 Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 42a Cust. #: RSM-38 Material: Mastic Location: Room 101 Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 43 Cust. #: RSM-39 Material: Exterior Window Glaze Location: Room 114 Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 2%	Other - 98%

For Layered Samples, each component will be analyzed and reported separately.

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Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 44 Cust. #: RSM-40 Material: Light Grey 12"x12" Floor Tile Location: Room 115 Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 44a Cust. #: RSM-40 Material: Mastic Location: Room 115 Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 45 Cust. #: RSM-41 Material: Light Blue 12"x12" Floor Tile Location: Room 115 Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 45a Cust. #: RSM-41 Material: Mastic Location: Room 115 Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 46 Cust. #: RSM-42 Material: Brown & Tan 12"x12" Floor Tile Location: Room 166 (Media Center) Appearance: beige,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 115082 - 46a Cust. #: RSM-42 Material: Mastic Location: Room 166 (Media Center) Appearance: black,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 47 Cust. #: RSM-43 Material: 2'x2' Suspended Ceiling Tile Location: Room 1 Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 30% Mineral Wool - 30% Other - 40%
Lab ID #: 115082 - 48 Cust. #: RSM-44 Material: Sink Undercoat Location: Room 115/101/102-106 Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 115082 - 49 Cust. #: RSM-45 Material: Pink 12"x12" Floor Tile Location: Appearance: beige,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

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Date Collected: 12/18/24
Date Received: 12/23/24
Date Analyzed: 12/23/24
Date Reported: 12/24/24

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 115082 - 50 Cust. #: RSM-2 Material: Block Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	
Lab ID #: Cust. #: Material: Location: Appearance: Layer: of	Asbestos Present:	

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Certificate of Analysis - Metals in Paint

Method: EPA SW846-7190M, EPA SW846-7130M, EPA SW846-7420M

Project: Riverside MS Pb

Report to:
Mr. Chris Decker
MicroAir Consulting
13351 Oakcrest Avenue
Gowen, MI 49326

ARL Report #: 25-L26901
Date Sampled: 01/02/25
Date Received: 01/07/25
Date Analyzed: 01/08/25
Date Reported: 01/09/25

Laboratory ID:	Client ID:	Reporting Limit:	Chromium:	Cadmium:	Lead:
L26901-01	RSM-Pb-1 Orange-Block Walls	0.05%	**Cr -** 0.60%	**Cd -** < 0.05%	**Pb -** 3.80%
L26901-02	RSM-Pb-2 White-Walls + Ceiling	0.05%	**Cr -** < 0.05%	**Cd -** < 0.05%	**Pb -** < 0.05%
L26901-03	RSM-Pb-3 Blue-Block Walls	0.03%	**Cr -** < 0.03%	**Cd -** < 0.03%	**Pb -** < 0.03%
L26901-04	RSM-Pb-4 Blue-Steel Lockers	0.05%	**Cr -** < 0.05%	**Cd -** < 0.05%	**Pb -** < 0.05%
L26901-05	RSM-Pb-5 White Ceiling Steel Deck	0.01%	**Cr -** < 0.01%	**Cd -** < 0.01%	**Pb -** 0.12%
L26901-06	RSM-Pb-6 Brown-Doors/Frames/Window Frames	0.09%	**Cr -** < 0.09%	**Cd -** < 0.09%	**Pb -** 0.38%
L26901-07	RSM-Pb-7 Beige Walls	0.01%	**Cr -** < 0.01%	**Cd -** < 0.01%	**Pb -** < 0.01%
L26901-08	RSM-Pb-8 Yellow Walls	0.04%	**Cr -** 0.45%	**Cd -** < 0.04%	**Pb -** 3.48%
L26901-09	RSM-Pb-9 Tan-Doors/Frames/Windows	0.13%	**Cr -** < 0.13%	**Cd -** < 0.13%	**Pb -** < 0.13%

Reporting Limit of 0.01% is based on minimum sample weight of 100mg per our SOP, and may vary based on smaller sample size. APEX Research is not responsible for sample collection activities, and results apply to samples as received. Methods have been slightly modified. Samples received in acceptable condition unless otherwise noted. This certificate of analysis relates only to the samples tested and to ensure the integrity of the results, may only be reproduced in full. Liability limited to cost of analysis. APEX Research, Inc. (Laboratory ID# 227441) is accredited by the AIHA Laboratory Accreditation Programs, LLC (AIHA LAP,LLC) in the Environmental Lead Laboratory Accreditation Program for Lead in Paint as documented by the Scope of Accreditation Certificate and associated Scope. Accreditation extends to lead analyses only.

Robert T. Letarte Jr., Laboratory Director