WORK PLAN FOR MOLD REMEDIATION WORK
AT
1930 VANCE STREET
MIDDLETOWN, OHIO 45044

PREPARED BY

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SIERRA PROJECT NO. BMHA.025

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PREPARED FOR
BUTLER METROPOLITAN HOUSING AUTHORITY
4110 HAMILTON-MIDDLETOWN ROAD
HAMILTON, OHIO 45011-6218

REMEDIATION WORK PLAN

PART 1 - SUMMARY OF WORK

1.1 DESCRIPTION

A. Work included - Base Bid: Contractor shall furnish all labor, materials, services, permits, insurance (specifically covering the handling and transportation of Contaminated Construction Material and Contaminated Waste Material), and equipment which is specified, shown, or reasonably implied for the following Remediation activities:

1. The removal and disposal, as contaminated waste, of the following Mold/Fungi Contaminated Building Material(s), including any existing debris, with no replacement, unless specified.

QUANTITIES ARE ESTIMATES, CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES AT JOB WALK.

1930 Vance Street

1st Floor, laundry room – Remove all drywall on walls and ceilings. All remaining surfaces shall be cleaned, disinfected, dried and sealed with an approved sealant.

1st Floor, living room – Remove all drywall on walls A and B. Remove drywall ceiling from middle of room to wall B. All remaining surfaces shall be cleaned, disinfected, dried and sealed with an approved sealant.

1st Floor, living room and laundry room – the adjacent unit drywall wall and framing shall be cleaned, disinfected, dried and sealed with an approved sealant, per the owners request.

The joint compound in this unit contains asbestos in concentrations <1% by PLM point count method. OSHA requirements for removal of building materials can be found in 29 CFR 1926.1101.

Entire Residence – Clean and sanitize entire unit to include HVAC system.

a. Wall and ceiling materials, including insulation and associated debris in the specified areas, clean and decontaminate all wall studs and joists, clean and decontaminate each remediation area with a disinfectant. Any building materials that will be left in-place shall be cleaned, disinfected, dried and sealed with an approved sealant.

2. Clean and wipe down all walls and surfaces in the residence with a disinfectant.

1.2 WORK NOT INCLUDED IN THE CONTRACT DOCUMENTS

A. The Contractor shall not remove or disturb any building materials unless necessary to fulfill job requirements.

1.3 BUILDING OCCUPANCY AND ACCESS RESTRICTIONS

A. The area shall not be occupied during the remediation operations.

1.4 SCHEDULING

A. All work shall be performed from: Monday through Friday or as directed by the Owner's Representative.

B. Coordinate with Owner's Representative on work hours and availability of workspaces and storage areas.

C. Obtain approval from Owner's Representative prior to altering work schedule.

1.5 OBSERVATIONS

A. The Owner's Representative will observe the status and progress of the Work for completeness and general compliance with the requirements of the Contract Documents.

1.6 SIGN-IN/OUT LOG

A. All Contractor personnel and Project Site visitors shall Sign-In/Out with the Owner's Representative on a daily basis for the duration of the project.

1.7 UTILITIES

A. Contractor may temporarily connect to existing permanent utilities during execution of the Work; connections to be made in locations designated by the Owner's Representative.

1.8 HVAC AND ELECTRICAL SYSTEM

A. Contractor will shut down and lock out HVAC and electrical systems for the Work Area. Main power distribution service to other areas can remain energized.

1.9 RULES

A. The Contractor shall abide by all applicable security rules and regulations. The Contractor must be in full compliance with all Owners' Representative safety protocols.

PART 2 - GENERAL

2.1 DESCRIPTION

A. **Work included:** Contractor shall furnish all labor, materials, services, permits, insurance (specifically covering the handling and transportation of Contaminated Building Materials, Construction Materials and Waste Materials), and equipment which is specified, shown, or reasonably implied for remediation activities specified in Summary of Work.

B. **Applicable Publications:** The publications listed below form a part of these Specifications to the extent referenced. The publications are referred to in the text by the basic designation only.

1. Code of Federal Regulations (CFR) Publications:

29 CFR 1910.1200	Hazard Communication
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.132	General Requirements - Personal Protective Equipment
29 CFR 1910.133	Eye and Face Protection
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.145	Specifications for Accident Prevention, Signs and Tags, 40 CFR 61, Subpart A
40 CFR 361.150	Standard for Waste Disposal for Manufacturing, Demolition, Renovation, Spraying and Fabrication Operations
29 CFR 1926.62	Lead in Construction Standard
29 CFR 1926.1101	Asbestos Standard

2. American National Standard Institute (ANSI) Publications:

Z9.2-1979	Fundamentals Governing The Design and Operation of Local Exhaust Systems
Z88.2-1992	Practices for Respiratory Protection
ANSI/IIRC S520-2008	Standard and reference Guide for Professional Mold Remediation

4. Underwriters Laboratories, Inc. (UL) Publications:

586-77 (R1982)	Test Performance of High Efficiency, Particulate, Air Filter Units

2.2 QUALITY CONTROL

A. Safety Compliance: In addition to requirements of this Work Plan, comply with laws, ordinances, rules, and regulations of federal, state, regional, and local authorities and publications regarding handling, storing, transporting, and disposing of Contaminated Waste materials.

2.3 SUBMITTALS AND NOTIFICATIONS

A. **Notifications:** All submittals and copies of all notifications (if any) and correspondence shall be submitted to Owner's Representative.

B. **Personnel Training:** Prior to work, Contractor shall submit (1) declaration certifying that all Contractor's employees have been adequately trained, and (2) a photocopy of training certificates for each employee from their respective training agency or organization.

C. **Respirators:** Submit manufacturer's certification that the respirators to be used in this Project comply with government agency requirements. Contractor's certifications for each employee must clearly state that each employee has been fit tested and properly trained for respirator use.

D. **Medical Examinations:** Submit proof that all persons providing labor and/or professional services who will be entering contaminated areas have had current and appropriate medical examinations.

E. **Remediation Product Data**: Submit manufacturer's catalogue, samples, Material Data Safety Sheets, (MSDS) and other items needed to demonstrate fully the quality of the proposed remediation materials including but not limited to the following:

1. Disinfectants
2. Protective packaging
3. Solvents
4. Other chemicals used

F. **Permits**: Submit proof satisfactory to the Owner's Representative that all required permits have been obtained. If no permits are required, submit signed letter stating such.

G. **Waste Transportation**: If applicable, submit the method of transport of Waste, including the name, address, license number, EPA ID number, and telephone number of the Transporter(s).

H. **Waste Disposal Facility:** If applicable, submit the name, address, EPA ID number, and telephone number of the Disposal Facility(s) to be used.

I. **Contractor's Work Plan:** Submit for approval, prior to start of work, a detailed plan of the work procedures to be used in the removal, repair, clean-up or decontamination of contaminated materials. Such a plan shall include:

1. Location of Work Areas.
2. Layout and construction details of Decontamination Enclosure Systems.
3. Project schedule.
4. Personal air monitoring procedures (if any).
5. Description of the method to be employed in order to control pollution, including negative air equipment calculations.
6. Names of Superintendent, Foremen, Project Manager and other key personnel, and their day time and emergency telephone numbers.
7. Emergency evacuation plan for injured workers, compressor failure, fire and other emergencies.

8. A contingency plan, in the event of a major contamination incident caused by fire, a breech in the Work area containment barrier, breakage of the buildings exterior windows or sabotage.
9. The Plan must be approved in writing by the Owner's Representative before the start of any work.

J. **Equipment Certification:** Submit certification that vacuums, negative air pressure equipment filters, and other local exhaust ventilation equipment conform to ANSI Z9.2-1979.

K. **Notifications**: Contact any government agencies in writing that is required by regulations prior to work. If no notification is required, provide written notice so stating.

All notifications shall contain as a minimum the following information:

1. Name, address and telephone number of the Owner's Representative including the contact person.
2. Name, address, EPA numbers, license number and telephone number of the Contractor including the contact person.
3. Name, address and description of the building, including size, age, and prior use of building.
4. The type and quantity of material involved and the description of the Work.
5. Scheduled starting and completion dates for Abatement Work.
6. Procedures that shall be employed to comply with the regulations.
7. The name, address, EPA number and telephone number of the Transporter.
8. The name and address of the Hazardous Waste Disposal Facility where the Waste shall be deposited. All waste shall be disposed of as friable asbestos waste in leak-proof containers.

L. Certification naming the manufacturer of supplied-air (Type C) respirator equipment, if used. Include certification of compliance with Occupational Safety and Health Administration, Environmental Protection Agency, and all other pertinent regulatory agencies.

M. Submittal Checklist

a. Pre-Work Submittals:
    1. Work schedule
    2. Copies of all notifications
    3. Copies of training (contractor/subcontractors)
    4. Equipment and product data and MSDS
    5. Registry of approved contractor and sub-contractor personnel
    6. Worker training documentation/certificates
    7. Worker medical records/certificates
    8. Worker respirator fit test documentation
    9. Certificates of Insurance (contractor/subcontractors)
    10. List of subcontractors
    11. Contractor's written OSHA respiratory protection plan
    12. Contractor's written security/emergency plan

b. Pre-Final Completion Submittals/Close-out Documentation:

1. If required, copies of waste manifests and waste shipment records
2. HEPA equipment service/maintenance records
3. Water filtration equipment service/maintenance records
4. If required, pressure differential (manometer) records
5. Visitor's register/sign-in logs
6. Daily site and containment entry/exit logs
7. Personal air monitoring results
8. Copies of any citations/violations
9. Copies of safety meeting attendance records
10. Copies of reports of any accidents/first aid administration

2.4 ADMINISTRATION OF THE CONTRACT

A. All Work is to be performed under the observation of the Owner's Representative, who shall be free to enter and review all Work.

PART 3 - PRODUCTS

3.1 GENERAL

A. Contractor shall furnish, provide and utilize the following products in the Work as specified.

3.2 PROTECTIVE COVERING (PLASTIC)

A. Six (6) mil polyethylene sheets in sizes to minimize the frequency of joints. Protective covering shall be flame retardant when required by local regulatory agencies.

3.3 PROTECTIVE PACKAGING

A. Appropriately labeled clear, double six (6) mil sealable polyethylene bags as a minimum.

3.4 CLEANING AGENTS

A. Provide suitable cleaning and disinfecting agents as required for project. Provide ventilation of Work Area as required by manufacturer. Vent exhaust to the exterior of the building and in a manner that will not result in adverse affects to other areas of the building, adjacent facilities or public areas.

3.5 TOOLS AND EQUIPMENT

A. Provide suitable tools for removal and cleaning.

B. Negative air pressure equipment: High-efficiency particulate air (HEPA) filtration systems shall have filtration equipment in compliance with ANSI Z9.2-1979, local exhaust ventilation.

C. Manometer:
   1. If applicable, have a built-in alarm. Continuous hard copy readout required.

D. HEPA Vacuums:
   1. Shall comply with ANSI Z9.2-1979.

E. Dehumidifiers and Fans:
   1. Shall be installed in the work area following remediation to facilitate drying of the work areas.

PART 4 - EXECUTION

4.1 WORK AREA PREPARATION

A. Preparation Procedures for: The removal of mold/fungi and environmental contaminated materials:

1. Removal of the above or other materials, unless specified otherwise, shall be executed in a "Contained" Work Area.
2. Contractor shall isolate the Work Area for the duration of the Project, completely sealing all openings including, but not limited to, HVAC ducts diffusers and grilles, skylights, doorways, and windows, with six (6) mil polyethylene taped securely to a clean surface. Spray adhesive, used on finished surfaces, should be avoided where possible. Construct barriers that enclose or separate Work Areas.
3. Contractor shall design his Work Area preparation and engineering controls as specified and/or as required preventing damage to and contamination of the adjacent areas.
4. The Owner shall remove all objects that will be saved. The Contractor shall remove and dispose of all other items within each work area.
5. The Contractor shall check regularly (at beginning, middle and end of each shift as a minimum) all polyethylene isolation and containment (protective) barriers for punctures, loose seals, and contact with heat-generating devices, etc. Problem areas shall be repaired or mended immediately.
6. Provide and maintain appropriate fire extinguisher inside and outside the Work Area. One 30-pound type "ABC" fire extinguisher is required for each 2,000-sq. ft. of floor area.
7. Shutdown of electric power within the work area is mandatory unless directed otherwise. Provide temporary power and lighting when necessary, and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements including appropriate Ground Fault protection. Temporary light fixtures will be explosion proof. When power shutdown is required, the Contractor shall check for conditions where shutdown will pose a danger to the building or to the building's components. Contractor shall take all precautions necessary, including inspections and testing, to insure the safety of his employees and other building occupants from electrical hazards during the course of the Project. Existing fire, smoke detection and other life safety systems shall be kept in operation at all

times, or, the Contractor shall install and maintain a temporary system or alternate acceptable to the Owner and fire officials.

8. The Contractor shall install and maintain Negative Air Pressure Equipment during the abatement and decontamination phases of the Project until the Clearance Test has passed. In unoccupied facilities a sufficient amount of air shall be exhausted by the unit(s) to create four (4) air changes per hour. If only one unit is necessary to provide the specified negative air pressure in a Work Area, the Contractor shall have a backup unit in place should the first unit fail, and for filter changes.
9. Notify the Observation Service twenty-four (24) hours in advance of when preparatory steps will be completed. Remediation Work shall not commence until: all preparation requirements have been completed; all tools, equipment, and materials are on hand; all required submittals, notices and permits have been approved, and until the Observation Service authorizes in writing that Work may commence.

4.2 DECONTAMINATION ENCLOSURE SYSTEMS

A. Decontamination Enclosure Systems (Worker and Equipment) general requirements:
   1. Build suitable wood, metal or PVC framing as described herein and as approved by the Observation Service prior to start of work.

B. Decontamination Enclosure System for remediation work in "Contained" Work Areas:
   1. Construct a Decontamination Enclosure System consisting of two totally enclosed chambers, as follows:
      a. Two stage decontamination unit
   2. Construction of an Equipment Decontamination Enclosure System is optional.
      a. A Washroom with an Air Lock to a designated staging area of the Work Area and a Curtained Doorway to the Holding Room.
      b. A Holding Room with a Curtained Doorway to the Washroom and a doorway to an uncontaminated area.

4.3 CONTAMINATED MATERIAL REMOVAL

A. Contaminated material shall be removed in manageable sections. Any material, which falls to the floor, shall be picked up immediately. Removed material shall be packed into approved and labeled packaging. The outside of all containers shall be cleaned before leaving the Work Area. Move containers to the Holding Area and wet-clean each container thoroughly.

B. The Work Area shall be kept orderly, clean and clear of work materials, polyethylene sheeting, tape, cleaning material, and clothing, and all other disposable material or items used in the Work Area shall be packed into properly labeled protective packaging and removed from the Work Area.

C. Carefully remove all building materials and insulation in the areas of suspected contamination. HEPA vacuum and decontaminate entire work area.

D. HEPA vacuum and decontaminate the floor with a fungicide solution. Avoid generation of dust.

E. Clean and decontaminate entire work area using HEPA vacuums, mold cleaning solutions and any other acceptable methods.

4.4. DECONTAMINATION OF WORK AREA

A. Decontamination procedures for "Contained" Work Areas:

1. Contractor shall perform a complete visual inspection of the Work Area to ensure that the Work Area is free of any contamination.
2. If any evidence of contaminated material or debris is encountered, the Contractor shall remove the contaminants and shall wet-clean all surfaces within the Work Area to remove residue.
3. Sealed bags, and all equipment used in the Work Area, shall be included in the cleanup and shall be removed from the Work Area at the appropriate time in the cleaning sequence.
4. Upon completion of his visual inspection and any necessary cleaning, the Contractor shall notify the Owner's Representative in advance that the Work Area is ready for Initial Review.
5. Upon proper notification, the Owner's Representative will review the Work Area for general conformance with the Specifications. Any nonconformance of the Work shall be remedied by the Contractor until the Work Area is in compliance, and at the Contractor's expense.
6. Upon proper notification, the Owner's Representative will review the encapsulated surfaces for general conformance with the Work Plan. Any nonconformance of the Work shall be remedied by the Contractor until the Work is in compliance, and at the Contractor's expense.
7. Upon successful compliance with the Review of the Owner's Representative, the Work Area is ready for Clearance Testing.
8. Upon notification from the Owner's Representative that the Work Area has passed the standard for Clearance Testing, the Contractor may remove the isolation barriers at any time.

4.5 WASTE DISPOSAL

A. Waste Materials shall be packed into approved sealed protective packaging. Waste shall be placed into double 6 mil bags and disposed of as friable asbestos-containing material.

B. Containers removed from the Holding Area must be removed by Workers who have entered from uncontaminated areas dressed in clean coveralls. Workers must not enter from uncontaminated areas into the Washroom or the Work Area.

C. Contractor shall deliver Waste Materials to the pre-designated Disposal Facility in accordance with the guidelines of the EPA.

D. The Contractor shall notify the Owner's Representative, in advance, when Contaminated Waste Materials are to be removed from the site. The Owner's Representative must be present during the removal of Contaminated Waste Materials from the Work Area.

E. At the conclusion of Work, the Contractor shall provide evidence (such as a "Bill of Lading") that the Waste Material was disposed of at the approved Waste Disposal Facility. If applicable, the Contractor shall indicate on the "Bill of Lading" the weight, in tons, of the Waste Material generated from the Project.

F. The Contractor shall be responsible for the safe handling and transportation of all Waste, generated by the Project of this Contract, to the designated Waste Disposal Facility. The Contractor shall bear all costs for all claims, damages, losses, and clean up expenses against the Owner or the Owner's Representative, including but not limited to attorney's fees rising out of, or resulting from, spills on the site or spills en route to the Waste Disposal Facility.

G. Materials generated from this Project shall be disposed of as friable asbestos waste at an EPA approved waste disposal facility.

4.6 AIR MONITORING AND TESTING

A. Clearance Testing:

1. Contained Work Areas: The Contractor shall not be released until final inspection and air-testing results have met the Clearance Standard. The indoor mold spore species will be compared with the outdoor mold spore species for similarities. If the mold species of these samples are similar and less than 500 total spore counts/per cubic meter, the area will be deemed as clean. The presence of any Stachybotrys spores shall result in failure of air clearance.

2. If the tests show that the Work Area has not been decontaminated, the Contractor shall repeat the cleaning until the Work Area is in compliance. Contractor shall incur all additional costs, including but not limited to, running additional air testing necessary for the Work Area to become in compliance.

4.7 STOPPING THE WORK

A. If, at any time, the Owner's Representative decides that Work Practices are violating pertinent regulations, these Specifications or, in his opinion, endangering Workers or the public, he will immediately notify the Contractor (followed up in writing) that operations shall cease until corrective action is taken, and the Contractor shall take such corrective action before proceeding with the Work. Loss or Damages due to a Stop Work Order shall be borne by the Contractor.

END OF SECTION