The Urbana Free Library

210 West Green Street, Urbana, Illinois 61801 • 217-367-4057 • fax: 217-367-4061 • *urbanafreelibrary.org*

REQUEST FOR PROPOSAL #2122-004
TEPPER BUILDING MOLD REMEDIATION

The following is sought: Mold remediation services at the Tepper Building, 207 W. Elm St. Urbana, Illinois 61801

Requesting: The Urbana Free Library
Contact Person: Mike Hannan, Facility Manager
Address: 210 West Green Street
Telephone No.: (217) 531-7080
E-Mail Address: mhannan@urbanafree.org

Date of Request Posted on Library's website: 5/4/2022

Date Published in News-Gazette: 5/8/2022

The original Proposal MUST be submitted to the Requesting Department at or before the date and time specified below to receive full consideration:

Pre-Proposal Meeting Date: 5/17/2022 Time: 9:00 A.M. Central Time at the Tepper Building, 207 W. Elm St., Urbana, Illinois 61801

Site Inspection Date: Time: Immediately after Pre-proposal Meeting

Proposal Submission Date: 6/10/2022 Time: 2:00 P.M. Central Time

Allowable Means for Transmitting Proposals: hardcopy only
Public Proposal Opening Date: 6/10/2022
Time: 2:10 P.M. Central Time

Locations for above: Administrative Offices, The Urbana Free Library, 210 W. Green St., Urbana, IL 61801.

All Proposals submitted in response to this Request shall be irrevocable for a period of 90 days after the Proposal submission due date and may not be withdrawn by the Vendor during this period. After such time has elapsed, the Vendor may withdraw the proposal if it has not been selected prior to the request to withdraw. Such withdrawal shall be requested in writing.

PROPOSAL DOCUMENTS ARE AVAILABLE, M-F 9:00 am-5:00 pm, at the Circulation Desk on the first floor of The Urbana Free Library, 210 West Green Street, Urbana, Illinois.
The Urbana Free Library reserves the right to waive technicalities or to accept or reject any proposal or combination of proposals based upon the Library's determination of its best interest.

1. DEFINITIONS:

"Library" shall mean The Urbana Free Library of Urbana, Illinois.

"Contract" shall mean a written instrument that, once executed by the Successful Vendor and the Library, becomes legally binding and enforceable on the Library and the Successful Vendor. "Contract" shall also mean any and all exhibits, whether or not labeled as such, which are attached to or incorporated in the instrument by reference that may, but not necessarily, include, the Request, Proposal or a part or portions thereof.

"Project" shall mean the combination of goods and services, labor and materials or other work that the Library seeks to have performed and completed as described in this Request.

"Proposal" shall mean any response to this Request that is submitted to the Library, including any information appended to or included in such response.

"Request" shall mean this document and all exhibits appended to and/or which are referenced in this document.

"Specifications" shall mean the terms, conditions, and requirements described in this Request.

"Respondent" shall mean any contractor, consultant, professional, or vendor who submits a Proposal in response to this Request.

"Services" shall mean consulting, advisory and/or professional services, including the work product generated as the result of the performance thereof, which the Library seeks to retain and obtain pursuant to this Request.

"Successful Respondent" shall mean the contractor, consultant, professional, or vendor whose Proposal is selected by the Library to proceed forward with negotiation for the purpose of arriving at mutually acceptable Contract terms between such person and the Library.

"Time" shall mean calendar days, hours and minutes (Central Time) unless otherwise specified.

2. SPECIFICATIONS:

See EXHIBIT A – SPECIFICATIONS appended hereto and made a part hereof.

3. RESPONDENT QUESTIONS:

3.1. **Responsibilities of Respondent**: It shall be the responsibility of each Respondent to be fully familiar with the Specifications, General Instructions and other requirements contained in and included with this Request. No plea of error or ignorance by a Respondent of the Specifications, General Instructions and other requirements shall be accepted.

3.2. **Questions:** All questions pertaining to this Request must be received by the contact person identified on Page 1 of the Request at least five (5) business days prior to the deadline for submission of Proposals.

3.3. **Discrepancies and Omissions:** If a Respondent finds discrepancies or omissions in the Specifications or is in doubt as to the meaning of any requirement or term contained in this Request, the Respondent shall notify the Library at least five (5) business days prior to the deadline for submission of the Respondent's Proposal. The Library will send written instructions in the form of an addendum to all Respondents that have indicated their interest in submitting a Proposal to the Library if the information is deemed necessary by the Library for submitting Proposals. The Library will not be responsible for any oral instructions. The failure of the Respondent to request clarification prior to submitting a Proposal waives the Respondent's right to claim any ambiguity or discrepancy in the documents or lack of understanding of any term or requirement.

3.4. **Addenda:** If the Library deems it appropriate to issue one or more addenda to this Request, the Library shall send such addenda to all Respondents that have indicated to the Library an interest in submitting a Proposal in response to this Request. All such issued addenda shall be deemed a part of this Request. Respondents must acknowledge in their respective Proposals all addenda specifically sent by the Library. Failure to acknowledge receipt of addenda may disqualify a Respondent's Proposal from consideration by the Library.

3.5. **Contacting Library Staff:** Respondents are prohibited from contacting the Library staff regarding this Request except as specifically set forth in this Request. Failure to comply with this provision may result in rejection of any or all Proposals.

3.6. **Pre-Proposal Submission Conference:** The Library will convene a mandatory pre-Proposal submission conference at the location appearing on Page 1 of this Request.

3.7. **Pre-Proposal Submission Site Visit:** The Library will conduct a mandatory pre-Proposal submission site inspection at all locations related to this Request. The pre-Proposal submission site inspection will commence at the location appearing on Page 1 of this Request. Any prospective Respondent that wishes to make one or more additional inspections of the sites where custodial and/or maintenance services shall be rendered should contact the contact person identified on Page 1 of this Request for Proposal.

4. GENERAL INSTRUCTIONS; PROPOSAL CONTENT; FORMAT; SUBMISSION:

See EXHIBIT B – GENERAL INSTRUCTIONS; PROPOSAL CONTENT; FORMAT; SUBMISSION appended hereto and made a part hereof.

5. PROPOSAL EVALUATION CRITERIA:

See EXHIBIT C – EVALUATION CRITERIA appended hereto and made a part hereof.

6. AWARD OF CONTRACT:

6.1. **Proposal Guarantee:** All Proposals must be guaranteed and may not be withdrawn until ninety (90) days after the proposal submission due date.

6.2. **Rejection of Proposals:** If a Respondent is not selected as the Successful Respondent as contemplated in this Request, Respondents may withdraw their Proposals.

6.3. **Price:** It is the Library's custom and practice to award a Contract to the Successful Respondent based on lowest Proposal price. However, the Library may award the Contract, if any award is to be made, based on the other criteria provided in the Evaluation Criteria included in Exhibit C.

6.4. **Proposal Bond/Security**:

6.4.1. **Acceptable Bond/Security:** Each Proposal shall be accompanied by a bank draft, cashier's check, letter of credit, certified check or proposal bond issued by a licensed surety equal to ten percent (10%) of the total value of the Proposal to serve as a Proposal bond. Any check submitted to secure the Proposal must be made payable to the "The Urbana Free Library" with the Request number included in the memo part of the check. All security tendered shall be held by the Library's Administrative Offices until a Successful Vendor has been selected and Contract documents have been signed or until it is determined that such security shall be returned to the respective Vendors.

6.4.2. **Return of Bond/Security:** To all but the Successful Respondent, upon execution of a Contract between the Successful Respondent and the Library. To all Respondents upon the Library's rejection of all Proposals or termination of the solicitation process without executing any Contract and each Respondent that withdraws his/her Proposal prior to the Proposal public opening date or Proposal submission date specified on Page 1 of this Request, whichever date is later.

In all other instances, the Library shall retain the aforesaid security tendered by the Respondents. Further, if the Successful Respondent fails to submit any additional documents in the form and within the date and time requested by the Library following selection as the Successful Respondent, or fails to execute a Contract to which the Successful Respondent agreed, the Library shall retain the Proposal bond/security, not as a penalty, but as liquidated damages.By submission of a Proposal, a Respondent acknowledges the impracticability of calculating the actual damages which would be suffered by the Library for the Respondent's failure to comply with the Request and agrees that the sum posted is reasonable.

7. CUSTOMER/CLIENT SERVICE:

The Library expects the Successful Respondent to deliver a high level of customer/client service regarding all aspects of the Successful Respondent's performance of his/her obligations and responsibilities as set forth in his/her Contract with the Library.

8. GENERAL LEGAL MATTERS:

See EXHIBIT D – GENERAL LEGAL MATTERS and EXHIBIT E – REQUIRED FORMS TO BE COMPLETED AND SUBMITTED WITH PROPOSAL.

Exhibit A

Fungal Abatement Specifications

Urbana Free Library Annex Building
210 West Green Street
Urbana, Illinois

PREPARED FOR:

Urbana Free Library

PREPARED BY:

OEHS
Occupational Environmental Health Solutions, Inc.

March 2022

SPECIFICATION SECTIONS

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Specification Sections

Division 1 - General Requirements

Division 2 - Site Work

DIVISION 1

GENERAL REQUIREMENTS

S ECTION 01013 - SUMMARY OF THE WORK- MICROBIOLOGICAL ABATEMENTPART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and other Division I specification sections, apply to thissection.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The project consists of

I. Project Location: Urbana Free Library Property, Annex Building, 2 IO WestGreen Street Urbana, Illinois.

2. Owner: Urbana Free Library 210 West Green Street, Urbana, Illinois

3. The work includes removal and decontamination of microbiological contaminated building materials located in the basement of the building.

1.3 WORK UNDER OTHER CONTRACTS

A. Separate Contract: The owner will award a separate contract for performance of certain construction operations at the site.

1. Contract: A contract will be awarded to ---------- for work and mold remediation. This will consist of three (3) phases:

2. Phase I: Demolition and removal of microbiological contaminated buildingmaterials (See Figure l) Basement - Conference Room, Office 1, Office 2, Mechanical Room, Storage Room l, Restrooms, Storage Room 2.
3. Phase 2: Decontamination and cleaning of microbiological contaminated building materials (See Figure I)
4. Phase 3: Cleaning of the ground and second floors.

B. Separate Contract: The owner will award a separate contract for performance ofcertain construction operations at the site. Those operations will be conducted subsequent to work under this contract. That contract includes the following:

1. Contract: A separate contract has been awarded to ----------to perform rebuilding of the demolition. The renovation will be conducted at the completion of each remediation phase.

C. Cooperate fully with separate contractors so that work under those contracts may becarried out smoothly, without interfering with or delaying work under this contract.

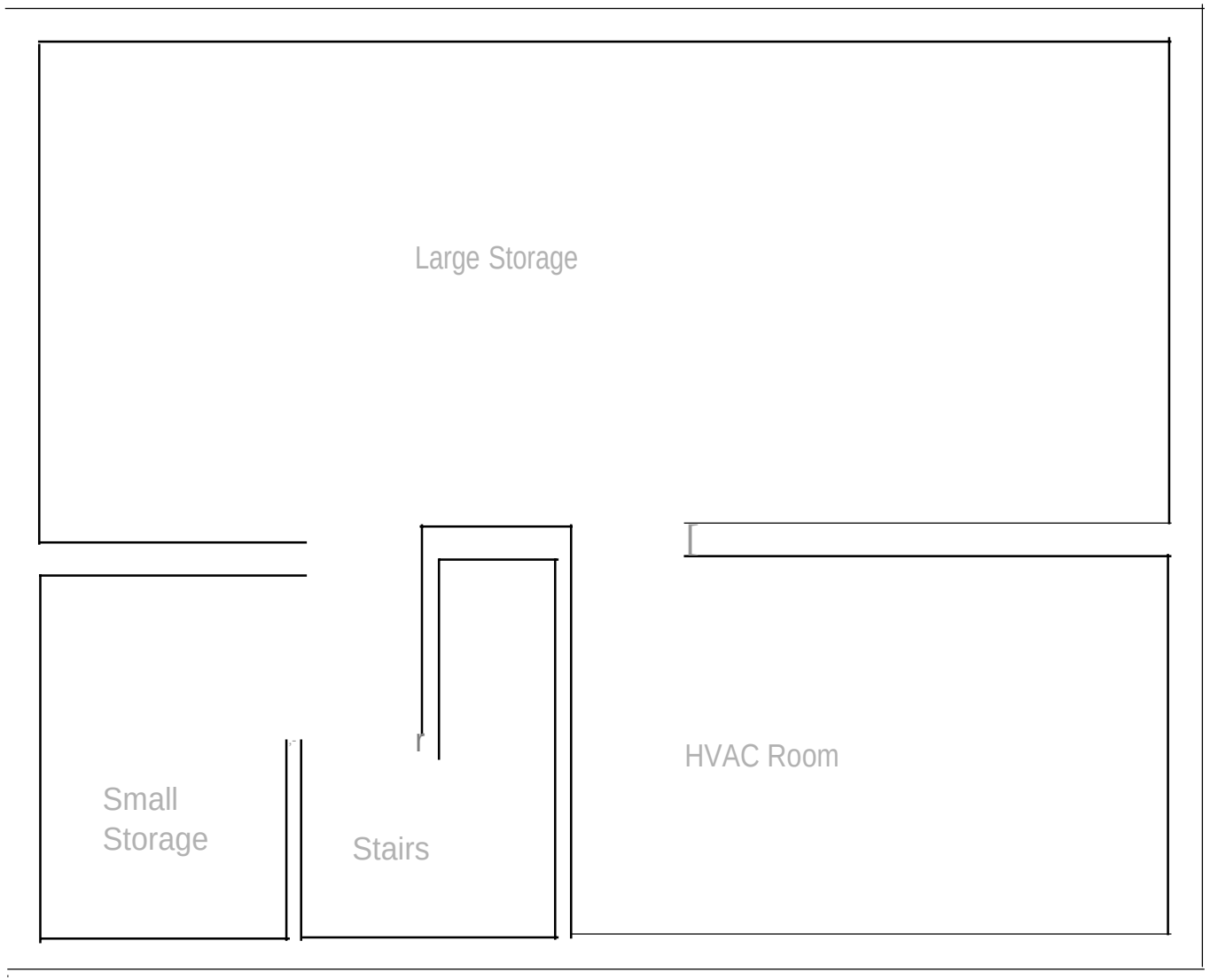
1.4 WORK SEQUENCE

A. The work will be conducted in three (3) phases.

Table 1
Annex Building Basement
Schedule of Microbiological Containing Materials

ITEM/LOCATION	Approximate Square Footage (Ft^2)	Abatement Action
Basement Drywall Foot of Stairs4 ft. Up from Floor	**~48**	Remove and Discard Drywall & spell Insulation. Clean Structural Lumber or Other Material
Mechanical Room Door 4 ft. Up from Floor	~24	Clean or If Necessary Remove and Discard Door.
All Poured and Concrete Block Surfaces	~3,452	Clean All surfaces of the Basement. (i.e. Walls Floors, and Ceilings)
NA	Total 3,524	**NA**

This chart is compiled based on information collected during the initial investigations and is not intended to be all inclusive. As work progresses and materials are removed, additional contamination may be discovered and the scope of work could be expanded to include new findings higher up the wall or in other areas discovered.



-----Areas to be Removed

-----Areas to be Cleaned

fSH

Occupational/Environmental/Health Solutions, Inc.

Urbana Free Library - Annex Building

Basement Fungal Abatement Specifications

February 16, 2022

FIGURE

1

4. Phase I: Demolition and removal of microbiological contaminated building materials (See Figure 1).
5. Phase 2: Decontamination and cleaning of microbiological contaminated building materials (See Figure 1).
6. Phase 3: Cleaning of the ground and second floors.

1.5 MICROBIOLOGICAL-CONTAINING MATERIALS

A. The work of this contract involves activities that will disturb microbiological-containing materials (MCM). The location and type of MCM known to be present at the worksite is set forth in the "Schedule of Microbiological-Containing Materials" at the end of this section. If any other MCM or PMCM is found, notify the owner, other employers and employees about the location and quantity of the MCM or PMCM within 24 hours of the discovery.

1.6 MICROBIOLOGICAL HEALTH RISK

A. The disturbance or dislocation of MCM may cause microbiological organisms to be released into the building's atmosphere, thereby creating a potential health risk 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 risk and of proper work procedures which must be followed.

B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified MCM, take appropriate continuous measures as necessary to protect all building occupants from the risk of exposure to airborne microbiological organisms. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.7 CONTRACTOR USE OF PREMISES

A. General: During the construction period, the contractor shall have full use of the premise's basement for construction operations, including use of the site.

8. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the work is indicated.

    1. Owner Occupancy: Allow for owner occupancy, if requested.

    2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the owner, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

C. Use of the Existing Building: Maintain the existing building in a weather-tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

I. Smoking: Smoking or open fires will not be permitted within the building enclosure or on the premises.

2. Toilet Rooms: Except for toilet rooms designated for use by the contractor's personnel, use of existing toilets within the building, by the contractor's personnel, will not be permitted.

1.8 OCCUPANCYREQUIREMENTS

A. Full Owner Occupancy: The owner will not use the ground and second floor of the building during the entire construction period. Cooperate with the owner during construction operations to minimize conflicts and facilitate owner usage. Perform the work, so as not to interfere with the owner's contents.

1.9 AIR MONITORING BY THE OWNER

A. The owner has contracted for air monitoring. Air monitoring may be conducted both outside and inside of the work area during the work, and for clearance sampling at the end of the project

I. Outside the Work Area: The owner's air monitoring firm may sample air outside the work area to detect faults in the work area isolation such as:

a. Contamination of the building outside of the work area with airborne microbiological organisms.

b. Failure of filtration or rupture in the differential pressure system.

c. Contamination of air outside the building envelope with airborne microbiological organisms.

2. Inside the Work Area: The owner's air monitoring firm may monitor airborne organism counts in the work area. The purpose of this air monito ring is to detect airborne microbiological concentrations which may challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne organisms.

B. Work Area Clearance: Clearance air sampling by the owner's air monitor at the completion of microbiological abatement work is described in Section O1711 Project Decontamination.

1.10 SCHEDULE OF AIR SAMPLES BY OWNER

A. Sampling methods are as follows:

1. Air-0 - Cell non-viable spore trap.

2. Viable bioaerosol air samples collected utilizing an Anderson N-6.

3. Microbiological viable swab samples.

B. umber and Volume of Samples: Samples will be taken each day abatement activity occurs. The exact number and volume of samples collected by the owner may vary depending upon job conditions and the analytical method used.

C. Swab Samples

I. . Culturable swab samples will be collected to document final clearance of the abatement area

D. Base Line:

I. Before Start of Work: The owner will secure air samples to establish a base line. Additional samples may be taken at owner's or designer's discretion. If airborne organism counts exceed allowed limits, additional samples may be taken as necessary to monitor organism levels.

E. Clearance Sampling:

1. Subsequent to fungal abatement operations clearance sampling will be conducted in five (5) locations of the abated areas, one (I) ambient backgroundand one (I) blank for quality assurance purposes.

1.11 ANALYTICAL METHODS USED BY THE OWNER

A. The following methods will be used by the owner in analyzing filters, culture plates or swabs used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.

1.12 LABORATORY TESTING BY OWNER

A. The services of a testing laboratory will be employed by the owner to perform laboratory analyses of the air samples.

B. The laboratory will be certified by the American Industrial Hygiene Association for microbiological analyses.

C. A complete record of all air monitoring and results will be furnished to the owner, the insurance company, and the contractor.

D. Contractor will have access to all air monitoring tests and results upon request.

E. Written reports of all air monitoring tests will be posted at the job site on a daily basis.

1.13 ORGANISMS IDENTIFIED

A. Organisms Identified: The following procedure will be used to resolve any disputes regarding organism types when a project has been stopped due to excessive airborne organism counts.

1.14 ADDITIONAL TESTING

A. The contractor may conduct air monitoring and laboratory testing. If he elects to do this the cost of such air monitoring and laboratory testing shall be at no additional cost to the owner.

1.15 PERSONAL MONITORING

A. Owner will not perform air monitoring for the contractor to meet contractor's OSHA/EPA guidelines for personal sampling or any other purpose.

Part 3 -EXECUTION

3.1 STOP ACTION LEVELS

A. Inside Work Area: Maintain an average airborne microorganism count in the work area of less than the ambient microorganism levels. If the organism counts rise above this figure for any sample taken, revise work procedures to lower organism counts.

I. If airborne organism counts exceed ambient levels for any period of time, cease all work except corrective action until organism counts fall below the ambient levels of organisms. After correcting cause of high organism levels, do not re-commence work for 24 hours unless otherwise authorized, in writing, by designer.

B. 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 organism counts rise above this figure for any sample taken, revise work procedures to lower organism counts. After correcting cause of high organism levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by designer.

STOP ACTION LEVEL	IMMEDIATELY STOP LEVEL	MINIMUM RESPIRATOR PROTECTION REQUIRED	FACTOR.
> Ambient	> Ambient	Half Face	10
> Ambient	> Ambient	Full Face	50
> Ambient	> Ambient	Powered Air Purifying Respirator (PAPR)	100

I. If airborne organism 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. Notify designer. Do not re-commence work until organism counts fall below stop action level given above for the type of respiratory protection in use. After correcting cause of high organism levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by designer.

C. Outside Work Area: If any air sample taken outside of the work area exceeds the base line established in Part I of this section, immediately and automatically stop all work except corrective action. The designer will determine the source of the high reading and so notify the contractor in writing.

1. If the high reading was the result of a failure of work area isolation measures, initiate the following actions:

a. Immediately erect new critical barriers as set forth in Section O1526 Temporary Enclosures 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).

b. Decontaminate the affected area in accordance with Section 01712 Cleaning & Decontamination Procedures.

c. Require that respiratory protection as set forth in Section 01562 Respiratory Protection be worn in affected area until area is cleared for re-occupancy in accordance with Section O 171 1 Project Decontamination.

d. Leave critical barriers in place until completion of work and insure that the operation of the pressure-differential system in the work area results in a flow of air from the balance of the building into the affected area.

e. If the exit from the clean room of the personnel decontamination unit entersthe affected area, establish a decontamination facility consisting of a changing room as set forth in Section 01563 Decontamination Units at entrypoint to affected area.

f. After certification of visual inspection in the work area, remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in Section O1711 Project Decontamination.

2. If the high reading was the result of other causes, initiate corrective action as determined by the designer.

D. Effect on Contract Sum: Complete corrective work with no change in the contract sum if high airborne organism counts were caused by contractor's activities. The contract sum and schedule will be adjusted for additional work caused by high airborne organism counts beyond the contractor's control.

3.2 STOP WORK

A. If the owner or the project administrator presents a written stop work order, immediately and automatically conform to that stop work order, while maintaining temporary enclosures and pressure-differential. Do not re-commence abatement work until authorized in writing by owner or project administrator.

B. immediately initiate the following actions: After being presented with a stop work order, immediately:

1. Cease all microbiological removal activities, or any other activities that disturbs MCM.

2. Repair any fallen, ripped, or otherwise failed work area isolation measures.

3. Maintain in operation all work area isolation measures including those required by Sections "Temporary Pressure-Differential & Air Circulation System," and 01563 "Decontamination Units."

4. Maintain all worker protections including those required by Sections O1560 "Worker Protection - Microbiological Abatement," and O1562 "Respiratory Protection."

5. Fog the air in the work area with a mist of amended water to reduce airborne organism levels.

D. Do not recommence work until authorized in writing by the owner or designer.

SECTION 01043 - COORDINATION - MICROBIOLOGICAL ABATEMENT

PART 1-GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and other Division I specification sections, apply to this section.

1.2 SUMMARY

A. This section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Plan of action.
4. Contingency plan.
5. Project directory.
6. Notifications.
7. Pre-construction inspection.
8. Contractor's construction schedule.
9. Administrative and supervisory personnel.
10. Pre-construction conference
11. Progress meetings
12. Coordination meetings.
13. Recordkeeping.
14. Special reports.

1.3 COORDINATION

A. Owner Occupancy: Coordinate construction operations and scheduling with partial occupancy requirements of the owner and the owner's use of utilities.

B. Coordinate construction operations included in various sections of these specifications to assure efficient and orderly completion of each part of the work.

Coordinate construction operations included under different sections that depend on each other for proper installation, connection, and operation.

- Schedule construction operations in the sequence required to obtain the best results where execution of one part of the work depends on execution of other components, before or after its own execution.

- Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.

- Make provisions to accommodate items scheduled for later installation.

C. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the work. Such administrative activities include, but are not limited to, the following:

- Preparation of schedules.

- Installation and removal of temporary facilities.

- Delivery and processing of submittals.

- Progress meetings.

- Project closeout **activities.**

E. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 PLAN OF ACTION

I. Prepare a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination areas, the sequencing of microbiological work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system, method of removal to prohibit visible emission, and packaging of removed microbiological debris.

2. Submit the plan of action to the designer for information only, prior to the start of work.

1.5 CONTINGENCY PLAN

A. Contingency Plan: Prepare a contingency plan for emergencies or any other event that may require breaching of work area containment or modification or abridgement of decontamination or work area isolation procedures. Include in this plan procedures for performing electrical and mechanical repairs inside containment after abatement work has begun. Include in plan specific procedures for decontamination of work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency. Items to be addressed in the plan include, but are not limited to the following:

I. Fire.

2. Accident.

3. Life threatening injury.

4. Non-life threatening injury.

5. Rescue.

6. Power failure.

7. Pressure-differential system failure.

8. Breach of containment.

9. Electrical faults or shock.

10. Excessive heat/cold (if/when such limits are specified).

11. Water leaks.

12. Waste spills.

13. Unauthorized entry into work area.

14. Elevated air samples outside of containment.

15. Repairs inside containment.

16. Toxic releases.

1.6 PROJECT DIRECTORY

A. Develop a directory of all entities involved in the project. Include the contractor's principal staff assignments, including the superintendent and other personnel in attendance at the site. Identify individuals, their duties and responsibilities. List business name, contact person, normal business and emergency telephone, pager and fax numbers and addresses of:

1. Owner, designer, and project administrator.

2. Contractor's general superintendent, supervisory personnel and contractor's home office.

3. Emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

4. Local, state, and federal agencies with jurisdiction over the project.

B. Post: Post copies of the project directory in the project meeting room, the temporary field office, each temporary telephone, and at entrance to clean room of personnel decontamination unit.

1.7 NOTIFICATIONS

A. Notify other entities at the job site of the nature of the microbiological abatement activities, location of microbiological-containing materials (MCM), requirements relative to microbiological fungal/bacteria organisms set forth in these specifications and applicable regulations. Advance notification will be made to:

1. Owners of the building/facility .

2. Employees who will perform microbiological abatement work or related activities, or who will be in the work area during the course of the work of this contract.

3. Employers of employees who work and/or will be working in adjacent areas during the course of the work of this contract.

B. Notify emergency service agencies including fire, ambulance, police or other agency that may service the abatement work site in case of an emergency. Notification is to include methods of entering work area, emergency entry and exit locations, modifications to fire notification or fire-fighting equipment, and other information needed by agencies providing emergency services.

C. Notifications of Emergency: Any individual at the job site may notify emergency service agencies if necessary without effect on this contract or the contract sum.

1.8 PRE-CONSTRUCTION INSPECTION

A. Inspect areas in which work will be performed, prior to commencement of work. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to designer for record purposes prior to starting work.

1.9 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Construction Schedule: Prepare a fully developed, contractor's construction schedule. Submit within 3 days after the date established for "Commencement of the Work."

I. Provide a separate schedule for each significant construction activity.

2. Within each schedule, indicate estimated completion percentage in IO percent increments. As work progresses, place a contrasting mark in each bar to indicate actual completion.

3. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work. Show each activity in proper sequence.

4. Indicate completion in advance of the date established for substantial completion. Indicate substantial completion on the schedule to allow time for the designer's procedures necessary for certification of substantial completion.

S. Indicate completion and clearance of each work area in advance of the date established for substantial completion. Allow time for testing and other designer's procedures necessary for certification of clearance and substantial completion.

B. Phasing: On the schedule, show how requirements for phased completion to permit work by separate contractors and partial occupancy by the owner affect the sequence of work.

C. Work Stages: Indicate important stages of construction for each major portion of the work, including submittal review, testing, and installation.

l. Non-Microbiological demolitions.

2. Preparation of the work area.

3. Microbiological removal.

4. Clearance testing.

5. Substantial completion.

1.10 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. Project Supervisor: Provide a full-time project supervisor at the work site who is experienced in administration and supervision of Microbiological abatement projects including work practices, protective measures for building and personnel, disposal procedures, project scheduling, management, etc. This person is the contractor's representative, and will function as the "competent person" at the work site responsible for compliance with all applicable federal, state and local regulations, particularly those relating to MCM.

I. Training: The general superintendent must have a current certification from an approved trainer for a course that meets the requirements of the EPA Guidelines and the Association of Specialists in Cleaning and Restoration or the Institute of Inspection, Cleaning and Restoration Certification.

2. Experience: The general superintendent must have demonstrable experience in the successful management of microbiological abatement projects that are similar to the work of this contract.

a. The general superintendent must have a minimum of two (2) years experience in on-site management of microbiological abatement projects.

b. The general superintendent must have had responsible charge of a minimumof five (5) microbiological abatement projects similar in size and type to thework of this contract.

3. Competent Person: The general superintendent is to be a competent person as required by the Association of Specialists in Cleaning and Restoration or the Institute of Inspection, Cleaning and Restoration Certification.

B. Supervisors/Forepersons: Provide full-time supervisors/forepersons who are experienced in the supervision of microbiological abatement work areas including work practices, building and personnel, disposal practices, etc. These persons are contractor employees directly responsible to the general superintendent.

C. Accreditation: The general superintendent, supervisors and forepersons are to be accredited by the Association of Specialists in Cleaning and Restoration or the Institute of Inspection, Cleaning and Restoration Certification.

1.11 PRE-CONSTRUCTION CONFERENCE

A. An initial progress meeting, recognized as "Pre-Construction Conference" will be convened by the designer prior to start of any work. The pre-construction conference will be scheduled before start of construction, at a time convenient to the owner and the designer, but no later than 3 days after execution of the agreement. Meet at the project site, or as otherwise directed, with general superintendent, owner, designer, project administrator, and other entities concerned with the Microbiological abatement work.

B. Attendees: Authorized representatives of the owner, designer, and their consultants will be in attendance. An authorized representative of the contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the project and authorized to conclude matters relating to the work.

I. 24 hours advance notice will be provided to all participants prior to convening Pre-Construction Conference.

C. Agenda: This is an organizational meeting, to review responsibilities and personnel assignments, to locate regulated areas and temporary facilities including power, light,

water, etc. Items of significance that could affect progress will be discussed, including the following:

I. Tentative construction schedule.

2. Critical work sequencing.

3. Designation of responsible personnel.

4. Procedures for processing field decisions and change orders.

5. Distribution of contract documents.

6. Preparation of record documents.

7. Use of the premises.

8. Parking availability.

9. Office, work, and storage areas.

I0. Equipment deliveries and priorities.

11. Safety procedures.

12. First aid.

13. Security.

14. Housekeeping.

15. Working hours.

1.12 PROGRESS MEETINGS

A. General: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, the designer will hold general progress meetings as required. These meetings will be scheduled, where possible, at time of preparation of payment request.

B. Attendees: Representatives of the owner and designer will attend these meetings. In addition to representatives of the contractor, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the project and authorized to conclude matters relating to the work. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting.

C. Agenda: Be prepared to discuss the following items at the progress meetings. Review other items of significance that could affect progress.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the contractor's construction schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the contract time.

2. Review the present and future needs of each entity present, including the following:

   a. Interface requirements.

   b. Time.

   c. Sequences.

   d. Status of submittals.

   e. Deliveries.

   f. Access.

   g. Site utilization.

   h. Temporary facilities and services.

   i. Hours of work.

   J. Hazards and risks.

   k. Housekeeping.

   I. Quality and work standards.

   m. Change orders.

1.13 COORDINATION MEETINGS

A. Attend project coordination meetings that will conducted by the designer at regular intervals convenient for all parties involved. Project coordination meetings are intended to coordinate the work of all contractors performing work on the site, and are in addition to specific meetings held for other purposes, such as regular progress meetings.

1.14 RECORD KEEPING

A. Daily Log: Maintain a daily log (in an area accessible to the owner, designer and project administrator) as a bound, sequential, hand written record carefully prepared daily that documents but is not limited to the following items:

1. Meetings; purpose, attendees, brief discussion.

2. Special or unusual events, i.e. barrier breaching, equipment failures, accidents.

3. Documentation of contractor's completion of the following:

a. Inspection of work area preparation prior to start of removal and daily thereafter.

b. Removal of any sheet plastic barriers.

c. Contractor's inspections prior to spray back, lock back, encapsulation, enclosure or any other operation that will conceal the condition of MCM or the substrate from which such materials have been removed.

d. Removal of waste materials from work area.

e. Decontamination of equipment (list items).

f. Contractor's final inspection/final air test analysis.

B. Entry/Exit Log: Maintain within the decontamination unit a daily log documenting the dates and time of but not limited to, the following items:

I. Visitations; authorized and unauthorized with the following information:

a. Name.

b. Organization.

c. Entry time.

d. Exit time.

e. Respiratory protection.

2. Personnel, by name, entering and leaving the work area with the following information:

a. Printed name.

b. Identification number.

c. Entry time.

d. Exit time.

e. Respiratory protection.

C. Air Monitoring Results: Post personnel and area air monitoring results in decontamination unit within 24 hours of receipt of sample results. Post the respiratory protection requirements for the work in progress.

D. Records in Decontamination Unit: Maintain the following documentation in the decontamination unit, in a location accessible to workers.

I. Documentation of inspections by OSHA, EPA or local authority.

2. Respiratory Protection Program.

E. Other Records: Maintain other documentation in a location that is accessible to the owner, designer, and project administrator including:

l. Waste manifests and shipping records.

2. Landfill receipts.

3. Accident reports.

1.15 SPECIAL REPORTS

A. General: Except as otherwise indicated, submit special reports directly to owner within one day of occurrence requiring special report, with copy to designer and others affected by occurrence.

B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of pressure-differential system, rupture of temporary enclosures), prepare and submit report. List chain of events, persons participating, and response by contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, adviseowner in advance at earliest possible date.

C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury, or where work was stopped for over four hours during a scheduled shift.

D. Report Discovered Conditions: When an unusual condition of the building is discovered during the work (e.g., leaks, termites, corrosion) prepare and submit aspecial report indication condition discovered.

1.16 SUBMITTALS

A. Before the Start of Work: Submit the following to the designer in the same manner as product data. Do not begin work until these submittals are returned with designer's action stamp indicating that all submittals have been "received-not reviewed."

I. Plan of action.

2. Contingency plans.

3. Project directory.

4. Notifications: Copy of notification sent to other entities at the work site, and to emergency service agencies.

5. Pre-Construction Inspection: Report on inspection carried out as required by this section. Include copies of all photographs, video tapes, etc.

6. Contractor's construction schedule.

8. Submit Daily: Provide two (2) copies for information purposes of all documents indicated in the following subsections to project administrator by end of the next working day after the day they are received by contractor.

l. Section on record keeping.

2. Section on special reports.

C. Project Closeout: Submit two (2) copies for information purposes of all documents indicated in the following sections at final closeout of project as a project close-out submittal.

I .Section on record keeping.

2. Section on special reports.

SECTION 01097 - REFERENCE STANDARDS AND DEFINITIONS - MICROBIOLOGICAL ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and other Division I specification sections, apply to this section.

1.2 DEFINITIONS

A. General: Basic contract definitions are included in the conditions of the contract.

I. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the drawings, or other paragraphs or schedules in the specifications, and similar requirements in the contract documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the reader locate the reference. Location is not limited.

2. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the designer, requested by the designer, and similar phrases.

3. "Approved": The term "approved," when used in conjunction with the designer's action on the contractor's submittals, applications, and requests, is limited to the designer's duties and responsibilities as stated in the conditions of the contract.

4. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the work.

5. "Furnish": The term "furnish" means supply and deliver to the project site. ready for unloading, unpacking, assembly, installation, and similar operations.

6. "Install": The term "install" describes operations at the project site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

7. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

8. "Installer": An installer is the contractor or another entity engaged by the contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

a. The tern "experienced," when used with the tern "installer," means having a minimum of five previous projects similar in size and scope to this project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.

b. Trades: Using trades such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades persons of the corresponding generic name.

c. Assigning Specialists: Certain sections of the specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the contractor.

d. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

9. "Project site" is the space available to the contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the project. The extent of the project site is shown on the drawings and may or may not be identical with the description of the land on which the project is to be built.

10. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

11. "Stop Work Order" is a written order to cease Microbiological removal, encapsulation or enclosure activities. The contractor must maintain work area enclosure, pressure differential isolation and ventilation of the work area, and decontamination units during the period that a stop work order is in effect.

12. "General Superintendent": This is the contractor's representative at the work site.

B. Definitions Relative to Microbiological Abatement

l. "Adequately Wet" means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from the microbiological containing material (MCM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.

2. "Microbiological": For purposes of the contract documents materials described in the contract documents as microbiological are to be considered as fungal containing microbiological organisms.

3. "Microbiological -Contaminated Material (MCM)": Any material containing or contaminated with fungal or bacterial organisms.

4. "Microbiological-Containing Waste Material": Any waste that contains microbiological organisms. This term includes filters or other materials contaminated with Micro biologicals. This term also includes microbiological-containing material waste and materials contaminated with microbiological s including disposable equipment and clothing.

5. "Microbiological Debris": Pieces of MCM that can be identified by color, texture, or composition, or dust, if the dust is determined to be MCM.

6. "Certified Industrial Hygienist (C. I.H.)": One certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.

7. "Competent Person": An individual who meets the requirements of the Association of Specialists in C leaning and Restoration (ASCR) or the Institute of Inspections, Cleaning & Restoration Certification (IICRC).

8. "Filter": A media component used to remove solid or liquid particles from air and water.

9. "HEPA Filter": A High-Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97 percent of all mono-dispersed particles of 0.3 microns in diameter.

10. "HEPA Filter Vacuum Collection Equipment (or vacuum cleaner)": High-efficiency particulate air filtered vacuum collection equipment with a HEPA filter.

11. "Intact": The MCM has not crumbled, been pulverized, or otherwise deteriorated so that the Microbiological is no longer likely to be bound with its matrix.

12. "Leak-Tight": Solids or liquids cannot escape or spill out. rt also means dust tight.

13. "Negative Pressure Enclosure (NPE)": A pressure-differential and ventilation system where the work area is maintained at a negative pressure relative to air pressure outside the work area.

14. "Working Day": Monday through Friday and includes holidays that fall on any of the days Monday through Friday as indicated in the notification requirements.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Except where the contract documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the contract documents to the extent referenced. Such standards are made a part of the contract documents by reference.

B. Publication Dates: Comply with the standards in effect as of the date of the contract documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer to the designer before proceeding for a decision on requirements that are different but apparently equal, and where it is uncertain which requirement is the most stringent.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum acceptable. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the designer for a decision before proceeding.

D. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other contract documents, they mean the recognized name of the trade association, standards generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research Co.'s "Encyclopedia of Associations," available in most libraries. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the contract documents.

1. ACI American Concrete Institute
   P.O. Box 19150
   Detroit, MI 48219
   (313) 532-2600

2. ACIL American Council of Independent Laboratories
   1629 K St., NW
   Washington, DC 20006
   (202) 887-5872

3. ACPA American Concrete Pipe Assoc.
   8300 Boone Blvd., Suite 400
   Vienna, VA 22182
   (703) 821-1990

4. ACGIH American Conference of Governmental Industrial Hygienists
   1330 Kemper Meadow Dr.
   Cincinnati, OH 45240
   (513) 742-2020

5. AIA The American Institute of Architects
   1735 New York Ave., NW

Washington, DC 20006
(202) 626-7300

6. AIHA American Industrial Hygiene Assoc.
2700 Prosperity Ave., Suite 250
Fairfax, VA 2203I
(703) **849-8888**

7. ANSI American National Standards Institute
11 West 42nd St., 13th Floor
New York, NY 10036
(212) 642-4900

8. ASCR Association of Specialists in Cleaning & Restoration

9. ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers 1791 Tullie Circle, NE
Atlanta, GA 30329
(404) 636-8400

10. ASME American Society of Mechanical Engineers
345 East 47th St.
New York, NY 10017
(212) 705-7722

11. ASPE American Society of Plumbing Engineers
3617 Thousand Oaks Blvd., Suite 210
Westlake, CA 91362
(805) 495-7120

12. ASTM American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
(610) 832-9585

13. CDC Center for Disease Control & Prevention

14. CGA Compressed Gas Assoc.
1725 Jefferson Davis Highway, Suite I004
Arlington, VA 22202-4100
(703) 412-0900

15. FM Factory Mutual Systems
1151 Boston-Providence Turnpike
P.O. Box 9102
Norwood, MA 02062
(617) 762-4300

16. GA Gypsum Association
810 First St., NE, Suite 5 I0

Washington, DC 20002
(202) 289-5440

17. Health Canada Health Protection Branch, Laboratory Center for Disease Control, Office of Biosafety
(613)957-1779

18. IEEE Institute of Electrical and Electronic Engineers
345 E. 47th St.
New York, NY 10017
(212) 705-7900

19. IETA International Electrical Testing Assoc.
P.O. Box 687
Morrison, CO 80465
(303) 697-8441

20. TICRC Institute of Inspection, Cleaning & Restoration Certification

21. IRI Industrial Risk Insurers P.O. Box 5010
85 Woodland St.
Hartford, CT 06102-5010
(203) 520-7300

22. ISA Instrument Society of America P.O. Box 12277
67 Alexander Dr.
Research Triangle Park, NC 27709
(919) 549-8411

23. ISO International Standards Organization

24. NADCA National Air Duct Cleaners Association

25. NEC National Electrical Code (from NFPA)

26. NECA National Electrical Contractors Assoc.
3 Bethesda Metro Center, Suite 1100
Bethesda, NM 20814
(301) 657-3110

27. NEMA National Electrical Manufacturers Assoc.
2101 L St., NW, Suite 300
Washington, DC 20037
(202) 457-8400

28. NFPA National Fire Protection Assoc.
One Battery march Park
P.O. Box 9101
Quincy, MA 02269-9101
(617) 770-3000 or (800) 344-3555

29. NRCA National Roofing Contractors Assoc.
10255 W. Higgins Rd., Suite 600
Rosemont, IL 60018-5607
(708) 299-9070

30. NYCDH New York City Department of Health Bureau of Environmental & Occupational Disease Epidemiology

3 I. RFC! Resilient Floor Covering institute
966 Hungerford Dr., Suite 12-8
Rockville, MD 20805
(30l) 340-8580

32. Underwriters Laboratories
333 Pfingsten Rd.
Northbrook, IL 60062
(708) 272-8800

33. Water Loss Institute Association of Specialists in Cleaning & Restoration
(1-800-272-7012)

H. Federal Government Agencies: Names and titles of federal government standard or specification producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the contract documents indicate names of standard or specification-producing agencies of the federal government. Names and addresses are to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the contract documents.

I. CE Corps of Engineers (U.S. Department of the Army) Chief of Engineers - Referral
Washington, DC 20314
(202) 272-0660

2. CFR Code of Federal Regulations
(Available from the Government Printing Office)
N. Capitol St. between G and H St., NW
Washington, DC 20402
(202) 783-3238
(Material is usually first published in the "Federal Register")

3. CPSC Consumer Product Safety Commission
5401 Westbard Ave.
Bethesda, NM 20207
(800) 638-2772

4. CS Commercial Standard
(U.S. Department of Commerce)
Government Printing Office
Washington, DC 20402
(202) 783-3238

5. DOC Department of Commerce
   14th St. and Constitution Ave., NW
   Washington, DC 20230
   (202) 482-2000

6. DOT Department of Transportation
   400 Seventh St., SW
   Washington, DC 20590
   (202) 366-4000

7. EPA Environmental Protection Agency
   401 M St., SW
   Washington, DC 20460
   (202) 260-2090

8. FS Federal Specification (from GSA) Specifications Unit (WFSIS)
   7th and D St., SW
   Washington, DC 20407
   (202) 708-9205

9. GSA General Services Administration
   F St. and 18th St., NW
   Washington, DC 20405
   (202) 708-5082

10. MlL Military Standardization Documents (U.S. Department of Defense)
    Naval Publications and Fon-ns Center
    5801 Tabor Ave.
    Philadelphia, PA 19120

11. NIST National Institute of Standards and Technology
    (U.S. Department of Commerce)
    Gaithersburg, NM 20899
    (301) 975-2000

12. OSHA Occupational Safety and Health Administration
    (U.S. Department of Labor)
    200 Constitution Ave., NW
    Washington, DC 20210
    (202) 219-6091

13. PS Product Standard of NBS
    (U.S. Department of Commerce)
    Government Printing Office
    Washington, DC 20402
    (202) 783-3238

14. USPS U.S. Postal Service
    475 L'Enfant Plaza, SW
    Washington, DC 20260-0010

(202) 268-2000

I. Trade Union Jurisdictions: The contractor shall maintain, and require subcontractors to maintain, complete current information on jurisdictional matters, regulations and pending actions, as applicable to construction activities. The manner in which contract documents have been organized and subdivided is not intended to be indicative of trade union or jurisdictional agreements.

1. Discuss new developments at project meetings at the earliest feasible dates. Record relevant information and actions agreed upon.

2. Assign and subcontract construction activities, and employ tradesmen and laborers in a manner that will not unduly risk jurisdictional disputes that could result in conflicts, delays, claims and losses.

SECTION 01098
CODES, REGULATIONS AND STANDARDS- MICROBIOLOGICAL ABATEMENT

PART 1-GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division I specification sections, apply to this section.

1.2 SUMMARY

A. This section sets forth governmental regulations which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

1. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.

2. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards

1.3 CODES, REGULATIONS AND STANDARDS

A. 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 and regulations have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

B. Contractor Responsibility: The contractor shall assume full responsibility and liability for the compliance with all applicable federal, state, and local regulations and guidelines 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. The contractor shall hold the owner and designer harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of the contractor, the contractor's employees, or subcontractors.

C. Federal requirements which govern Microbiological abatement work or hauling and disposal of microbiological waste materials include, but are not limited to, the following:

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

a. Respiratory Protection

Title 29, Part 1910, Section 134 of the Code of Federal Regulations Title 29, Part 1926, Section I03 of the Code of Federal Regulations

b. Personal Protective Equipment for General Industry
Title 29, Part 1910, Section 132 of the Code of Federal Regulations Title 29, Part 1926, Sections 95 - 107 of the Code of Federal Regulations

c. Access to Employee Exposure and Medical Records Title 29, Part 1926, Section 33 of the Code of Federal Regulations

d. Hazard Communication
Title 29, Part 1926, Section 59 of the Code of Federal Regulations

f. Specifications for Accident Prevention Signs and Tags Title 29, Part 19 l 0, Section 145 of the Code of Federal Regulations

g. Permit Required Confined Space
Title 29, Part 1910, Section 146 of the Code of Federal Regulations

h. Construction Industry - General Duty Standards
Title 29, Part 1926, Sections 20 through 35 of the Code of FederalRegulations

1. Shipyard Industry
Title 29 Part 1915 Section 1001 of the Code of Federal Regulations

2. DOT: U.S. Department of Transportation, including but not limited to:

a. Hazardous Substances
Title 49, Part 171 and l'72 of the Code of Federal Regulations

b. Hazardous Material Regulations
General Awareness and Training Requirements for Handlers, Loaders and Drivers
Title 49, Parts 171-180 of the Code of Federal Regulations

c. Hazardous Material Regulations
Editorial and Technical Revisions
Title 49, Parts 171-180 of the Code of Federal Regulations

3. EPA: U.S. Environmental Protection Agency (EPA):

a. *Mold Abatement in Schools and Commercial Buildings*

3. National Air Duct Cleaners Association (NADCA)

a. Assessment, Cleaning, and Restoration of HVAC Systems 2013

4. Institute of Inspection Cleaning and Restoration (IICRC)
a. Standard and Reference Guide for Professional Mold Remediation (S520)

D. State requirements which govern Microbiological abatement work or hauling and disposal of Microbiological waste materials include but are not limited to the following:

1. New York City Department of Health Mold Remediation Guidelines

E. Local requirements which govern Microbiological abatement work or hauling and disposal of Microbiological waste materials include but are not limited to the following:

Abide by all local requirements which govern Microbiological abatement work or hauling and disposal of Microbiological waste materials.

1.5 PERMITS

A. Permit: All Microbiological-containing waste is to be transported by an entity maintaining a current "Industrial waste hauler permit" specifically for MCM, as required for transporting of waste MCM to a disposal site.

B. Contractor is responsible for obtaining any demolition, building, renovation or other permits, and for paying application fees, if any, where required by state or local jurisdictions.

1.6 LICENSES

A. Licenses: Maintain current licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

1.7 POSTING AND FILING OF REGULATIONS

A. Posting and Filing of Regulations: Post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulations and standard. Maintain one copy of each at job site. Keep on file in contractor's office one copy of each.

1.8 SUBMITTALS

A. Before Start of Work: Submit the following to the designer for review. No work shall begin until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1. Permits, Licenses, and Certificates: For the owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work including:

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

2. Notices: Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice.

3. Permits and Licenses: Submit copies of all current valid state and local licenses and permits required by state and local regulations.

4. Licenses: Submit copies of all state and local licenses and permits necessary to carry out the work of this contract.

SECTION 01503 - TEMPORARY FACILITIES - MICROBIOLOGICAL ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and other Division I specification sections, apply to this section.

1.2 SUMMARY

A. This section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

B. Temporary utilities include, but are not limited to, the following:

1. Water service and distribution.
2. Temporary electric power and light.
3. Temporary heat.
4. Ventilation.
5. Telephone service.
6. Sanitary facilities, including drinking water.
7. Storm and sanitary sewer.

C. Support facilities include, but are not limited to, the following:

I. Field offices, laboratories and storage sheds.
2. Temporary enclosures.
3. Hoists and temporary elevator use.

D. Security and protection facilities include, but are not limited to, the following:

I. Temporary fire protection.
2. Barricades, warning signs, and lights.

1.3 DESCRIPTION OF REQUIREMENTS

A. General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.4 SUBMITTALS

A. Before the Start of Work: Submit the following to the designer for review. Begin no work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

I. Hot Water Heater: Submit manufacturer's name, model number, size in gallons (liters), heating capacity, and power requirements.

2. Decontamination Unit Subpanel: Submit product data.

3. Ground Fault Circuit Interrupters (GFCI): Submit product data.

4. Lamps and Light Fixtures: Submit product data.

5. Temporary Heating Units: Provide product data.

6. Temporary Cooling Units: Provide product data and installation instructions.

7. Self-Contained Toilet Units: Provide product data and name of subcontractor to be used for servicing self-contained toilets. Submit method to used for servicing.

8. Fire Extinguishers: Provide product data. Submit schedule indicating location at job site and compliance with NFPA IO and NFPA 241.

9. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

I0. Implementation and Termination Schedule: Within I 5 days of the date established for commencement of the work, submit a schedule indicating implementation and termination of each temporary utility.

1.5 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

I. Building code requirements.

2. Health and safety regulations.

3. Utility company regulations.

4. Police, fire department, and rescue squad rules.

5. Environmental protection regulations.

B. Standards: Comply with FPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI AIO Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."

C. Electrical Service: Comply with EMA, ECA, and LTL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

D. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the owner, change over from use of temporary service to use of permanent service.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. General: Provide new materials and equipment. If acceptable to the designer, the contractor may use undamaged, previously used materials and equipment in serviceable condition. Provide materials and equipment suitable for use intended.

B. Lumber and Plywood

1. For job-built temporary offices, shops, and sheds within the construction area, provide LTL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.

2. For fences and vision barriers, provide minimum 3/8 in. (9.5 mm) thick exterior plywood.

C. Scaffolding: Provide 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 scaffolding shall comply with applicable OSHA provisions.

1. Equip rungs of metal ladders, etc. with an abrasive non-slip surface.

2. Provide a non-skid surface on scaffold surfaces subject to foot traffic.

2.2 WATER SERVICE

A. Water: Provide potable water approved by local health authorities.

B. Temporary Water Service Connection: Connections to the owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

C. Water Hoses: Provide heavy-duty, abrasion-resistant, flexible hoses in diameters and lengths necessary to adequately serve temporary facilities, and with a pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.

1. Provide water into each work area and to each decontamination unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, shut-off nozzles and equipment.

D. Hot Water Heater: Provide UL rated minimum 40-gallon (150 liters) electric hot water heater to supply hot water. Activate from 30-amp circuit breaker located within the decontamination unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type **L** copper. Drip pans shall consist of a 12 in. x 12 in. x 6 in. (30 cm. x 30 cm. x 15 cm) deep pan, made of 19gauge galvanized steel, with handles. A 3-quart (3 liter) kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with NEMA, TECA, and LTL standards.

E. Hot water may be secured from the building hot water system, provided backflow protection is installed at point of connection as described in this section under temporary water service connection and if authorized in writing by the designer.

2.3 ELECTRICAL SERVICE

A. General: Comply with applicable NEMA, NECA, and LTL standards and governing regulations for materials and layout of temporary electric service.

B. Temporary Power: Provide service to decontamination unit subpanel with minimum 60amp, 2-pole circuit breaker or fused disconnect connected to the building's main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate electrical equipment required for completion of the work.

I. Connection to the building's main distribution panel is to be made by a licensed electrician

C. Voltage Differences: Provide identification warning signs at power outlets which are other than 110-120 volt power. Provide polarized outlet s for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for workoperations.

D. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters (GFCl), reset button, and pilot light for connection of power tools and equipment.

I. Locate GFCI's exterior to work area so that circuits are protected prior to entry to work area. Provide circuit breaker type GFCI equipped with test button and reset switch for circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to work area.

E. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length voltage ratio.

F. Lamps and Light Fixtures: Provide general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

2.4 TEMPORARY HEAT

A. Heating Units: Provide temporary heating units that have been tested and labeled by LJL, FM or another recognized trade association related to the fuel being consumed. Use steam or hot water radiant heat where available, and where not available use electric resistant fan radiation supplied from a branch circuit with ground fault circuit interrupter.

2.5 TEMPORARY COOLING

A. Cooling Units: Provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

2.6 TEMPORARY STRUCTURES

A. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

B. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-organism-reinforced polyester shell or similar nonabsorbent material.

2.7 FIRST AID

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

2.8 FIRE EXTINGUISHERS

A. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

B. Comply with NFPA IO and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. General: Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the project adequately and result in minimum interference with performance of the work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

C. Require that personnel accomplishing this work be licensed as required by local authority for the work performed.

D. Relocate, modify, and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

3.2 SCAFFOLDING

A. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.

B. Clean, as necessary, debris from non-slip surfaces.

C. At the completion of abatement work, clean construction aids within the work area, wrap in one layer of 6 mil (0.15 mm) polyethylene sheet, and seal before removal from the work area.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.

2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.

3. Use Charges: Cost or use charges for temporary facilities are not chargeable to the owner or designer. either the owner nor designer will accept cost or use charges as a basis of claims for change orders.

B. Water Service

I. Water connection (without charge) to owner's existing potable water system is limited to one 3/4 in. (19 mm) pipe-size connection, and a maximum flow of 10 g.p.m. (38 liters/minute) each to hot and cold water supply. install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of IOO'F (35'C). Supply hot and cold water to the decontamination unit in accordance with Section O1563.

a. Maintain hose connections and outlet valves in leakproof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

2. Sterilization: Sterilize temporary water piping prior to use.

C. Electrical Service

1. Lock out: Lock out all existing power to or through the work area as described below. Unless specifically noted otherwise, existing power and lighting circuits to the work area are not to be used. All power and lighting to the work area and decontamination facilities are to be provided from temporary electrical panel described below.

a. Comply with requirements to OSHA 29 CFR 1910.147 the control of hazardous energy lock out/tag out.

b. Lock out power to work area by switching off breakers serving power or lighting circuits in work area. Tag out breakers with notation "DANGER circuit being worked on." Lock panel and have all keys under control of authorized person who has locked panel.

c. Lock out power to circuits running through work area wherever possible by switching off and locking all breakers serving these circuits. Tag out breakers with notation "DANGER circuit being worked on." Sign and date danger tag. Lock panel and supply keys to authorized person who has applied locks. If circuits cannot be shut down for any reason, label at intervals of four ft (1.25 meter) on center with signs reading, "DANGER live electric circuit. Electrocution hazard." All Microbiological abatement work in the vicinity of the live circuit is to be performed dry. All necessary notifications and procedures for dry removal are to be followed.

d. Lock out power to electrical equipment located in the work area, and to any fans or other equipment that is going to be worked on.

2. Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by owner or designer. Panel is to be installed by a licensed electrician.

3. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 volts, ac 20 ampere rating, and lighting circuits may be non-metallic sheathed cable where overhead and exposed for surveillance.

4. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.

5. Temporary Wiring: In the work area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

6. Number of Branch Circuits: Provide sufficient branch circuits as required by the work. Branch circuits are to originate at temporary electrical panel. At minimum provide the following:

   a. One circuit for each HEPA-filtered fan unit.

   b. For power tools and task lighting, provide one temporary four-gang outlet in the following locations. Provide a separate 110-120 volt, 20-amp circuit for each four-gang outlet (four outlets per circuit).

   c. One outlet in the work area for each 2500 sq. ft (225 square meters) of work area.

   d. One outlet at each decontamination unit, located in equipment room.

7. 110- 120 volt 20-amp branch circuits with four-gang outlet for owner's exclusive use while conducting visual inspection and air sampling during the work as follows:

   a. One in each work area.

   b. One at clean side of each decontamination unit.

   c. One at each exhaust location for HEPA-filtered fan units.

D. Temporary Lighting

1. Lock out: Lock out existing power to lighting circuits in work area as described in Section 01526 Temporary Enclosures. Unless specifically noted otherwise, existing lighting circuits to the work area are not to be used. All lighting to the

work area and decontamination facilities are to be provided from temporary electrical panel described above.

2. Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:

   a. One 200-watt incandescent lamp per l 000 sq. ft (92.9 square meters) of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas, provide one 100-watt incandescent lamp every 50 ft (15.2 meters). In stairways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere, by combined use of daylight, general lighting, and portable plug-in task lighting.

   b. Provide lighting in areas where work is being performed as required to supply a 100 ft candle (1,076 lumens/sq. meter) minimum light level.

   c. Provide lighting in any area being subjected to a visual inspection as required to supply a I00 ft candle (1,076 lumens/sq. meter) minimum light level.

d. Provide lighting in the decontamination unit as required to supply a 50 ft candle (538 lumens/sq. meter) minimum light level.

3. Number of Lighting Circuits: Provide sufficient lighting circuits as required by the work. Lighting circuits are to originate at temporary electrical panel.

4. Circuit Protection: Protect each circuit with a GFCI of proper size located in the temporary panel.

E. Temporary Heat

1. General: Provide temporary heat where indicated or needed for performance of the work.
2. Heating Facilities: Except where the owner authorizes use of the permanent system, provide vented, self-contained, LP-gas, or fuel-oil heaters with individual space thermostatic control.

   a. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.

3. Maintain a minimum temperature of 70'F (21'C) where finished work has been installed.

4. Maintain a minimum temperature of 65° F (l 8°C) in the work area at all times thatwork is going on. At all other times and at completion of removal work, but before start of reconstruction work, maintain a minimum temperature of 50° F (l0° C).

5. Maintain a minimum temperature of 50° F (10° C) in the work area at all timesduring and after removal work.

F. Temporary Cooling

I. Required Cooling: Provide units sufficient to supply 20,000 BTU/hr (5,862 w) of cooling per 8,000 cubic ft (225 cubic meters) of work area.

G. Temporary Utilities

1. Temporary Telephones: Provide temporary telephone service throughout the construction period for personnel engaged in construction activities. Install telephone on a separate line for each temporary office and first-aid station.

2. Separate Telephone Lines: Provide additional telephone lines for the following:

a. Where an office has more than two occupants, install a telephone for each additional occupant or pair of occupants.

b. Provide a dedicated telephone line for a fax machine in the field office.

c. Provide a separate line for the owner's use.

d. At each telephone, post a list of emergency telephone numbers.

H. Sanitary Facilities

1. Sanitary facilities include temporary toilets, wash facilities, and drinking water fixtures. Comply with regulations and health codes for the type, number location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the project's needs.

a. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.

2. Toilets: Use of the owner's existing toilet facilities will be permitted, so long as facilities are 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.

3. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.

4. Provide separate facilities for male and female personnel.

5. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

6. Drinking Water Facilities: Provide containerized, tap-dispenser, bottled water drinking water units, including paper supply.

   a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45° F to 55° F (7.2 ° C to 12.8° C).

7. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.

   a. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.

   b. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore to normal conditions promptly.

3.4 SUPPORT FACILITIES INSTALLATION

A. Locate field offices, field laboratories, storage sheds, and other temporary construction and support facilities for easy access.

   I. Maintain support facilities until near substantial completion. Remove prior to substantial completion. Personnel remaining after substantial completion will be permitted to use permanent facilities, under conditions acceptable to the owner.

B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 ft (9 in) of building lines. Comply with requirements of NFPA 24 I.

C. Project Administrator's Field Office: Provide air conditioned, heated office space near the work area for professional person, suitably finished, furnished, equipped, locked, heated, naturally ventilated, lighted and wired with electrical power, not less than 250 sq. ft (25 sq. meters) floor area. Equipment office with one telephone line and one telephone, and not less than two duplex convenience power outlets. In addition to one desk, one four-drawer file cabinet and three chairs, furnish office with one 36 in. x 96 in. (I m x 2.5 in) plan table, and one 24 in. x 48 in. (0.62 in x 1.25 in) work table near electrical power outlet. Provide portable office or use a suitable room as designated by owner and relocate or add equipment as required to meet the above requirements.

D. Field Offices and Laboratory: Provide insulated, weather tight temporary offices of sufficient size to accommodate required personnel at the project site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:

   1. Furnish with a desk and chairs, a four-drawer file cabinet, plan table, plan rack, and a six-shelf bookcase.

2. Equip with a water cooler and private toilet complete with water closet, lavatory, and medicine cabinet unit with a mirror.

E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

I. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft (2.3 sq. in) or less with plywood or similar materials.

3. Close openings through floor or roof decks and horizontal surfaces with loadbearing, wood-framed construction.

4. Where temporary wood or plywood enclosure exceeds I00 sq. ft (9.2 sq. in) in area, use LTL-labeled, fire retardant treated material for framing and main sheathing.

F. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

3.5 FIRE PROTECTION FACILITIES INSTALLATION

A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until substantial completion, or longer, as requested by the designer.

B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA IO "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."

I. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.

2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways, and other access routes for fighting fires.

4. Prohibit smoking within any building, structure, other enclosures or in hazardous fire-exposure areas.

5. Prohibit smoking in hazardous fire-exposure areas.

6. Provide supervision of welding operations, combustion-type temporary heating units and similar sources of fire ignition.

C. Permanent Fire Protection: At the earliest feasible date in each area of the project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

E. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements

I. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Termination and Removal: Unless the designer requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than substantial completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the contractor's property. The owner reserves the right to take possession of project identification signs.

2. At substantial completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:

   a. Replace air filters and clean inside of ductwork and housings.

   b. Replace significantly worn parts and parts subject to unusual operating conditions.

   c. Replace lamps burned out or noticeably dimmed by hours of use.

SECTION 01513 - TEMPORARY PRESSURE-DIFFERETIAL AND AIR CIRCULATION SYSTEM

PART 1-GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division I specification sections, apply to work of this section.

1.2 RELATED SECTIONS

A. Heating and cooling requirements are set forth in Section 01503 Temporary Facilities Microbiological Abatement.

1.3 MONITORING

A. Continuously monitor and record the pressure-differential between the work area and the building outside of the work area with a monitoring device incorporating a continuous recorder (e.g., strip chart).

1.4 SUBMITTALS

A. Before Start of Work: Submit design of pressure-differential system to the designer for review. Do not begin work until submittal is returned with the designer's action stamp indicating that the submittal is returned for unrestricted use. Include in the submittal at a minimum:

1. Number of HEPA-filtered fan units required and the calculations necessary to determine the number of machines.

2. Description of projected air flow within work area and methods required to provide adequate air flow in all portions of the work area.

3. Anticipated pressure-differential across work area enclosures.

4. Description of methods of testing for correct air flow and pressure-differentials.

5. Manufacturer's product data on the HEPA-filtered fan units to be used.

6. Location of the machines in the work area.

7. Method of supplying adequate power to the machines and designation of building electrical panel(s) which will be supplying the power.

8. Description of work practices to ensure that airborne organisms travel away from workers.

9. Manufacturer's product data on equipment used to monitor pressure-differential between inside and outside of work area.

I0. Manufacturer's product data on auxiliary generator to be used.

11. Manufacturer's product data on auxiliary power switch to be used.

12. Schematic diagram of power and auxiliary power supply to HEPA-filtered fan units.

B. On a Weekly Basis: Submit printout from pressure-differential monitoring equipment. Mark printout with date and start of time for each day. Use printout paper that indicates elapsed time in intervals no greater than hours. Indicate on each day's record times of starting and stopping abatement work, type of work in progress, breaks for lunch or other purposes, periods of stop work, and filter changes. Cut printout into segments by day, attach to 8 l/2in. x l1 in. [21S mm x 280 mm] paper. Label with project name, contractor's name, and date.

1.5 QUALITY ASSURANCE

A. Monitor pressure-differential at personnel and equipment decontamination units witha differential pressure meter equipped with a continuous recorder. Meter shall be equipped with a warning buzzer, which will sound if pressure-differential drops below 0.02 in. [0.5 mm] of water.

PART 2-PRODUCTS

2.1 HEPA-FILTERED FAN UNITS

A. General: Supply the required number of HEPA-filtered fan units to the site in accordance with these specifications. Use units that meet the following requirements.

B. Cabinet: Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 in. [0.76 meters] to fit through standard size doorways. Provide units whose cabinets are:

1. Factory sealed to prevent Microbiological-containing dust from being released during use, transport, or maintenance.

2. Arranged to provide access to and replacement of all air filters from intake end.

3. Mounted on coasters or wheels.

C. Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions.

D. HEPA Filters: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.

1. Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.

2. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles when tested in accordance with Military Standard umber 282 and Army Instruction Manual 136-300- l75A. Provide filters that bear a ULS86 label to indicate ability to perform under specified conditions.

3. Provide filters that are marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.

4. Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of prefiltration are required. Provide units with the following pre-filters:

   a. First-Stage Pre-Filter: Low-efficiency type (e.g., for particles 100 um and larger)

   b. Second-Stage (or intermediate) Filter: Medium efficiency (e.g.., effective for particles down to 5 um)

   c. Provide units with pre-filters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.

E. Instrumentation: Provide units equipped with:

   I. Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed.

   2. A table indicating the usable air handling capacity for various static pressure readings on the magnehelic gauge affixed near the gauge for reference, or the magnehelic reading indicating at what point the filters should be changed, noting cubic feet per minute (CFM) (liters/second (LPS)) air delivery at that point.

   3. Elapsed time meter to show the total accumulated hours of operation.

F. Safety and Warning Devices: Provide units with the following safety and warning devices:

   1. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter.

   2. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge.

   3. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red).

   4. Audible alarm if unit shuts down due to operation of safety systems.

G. Electrical components: Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (LTL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.

H. Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

I. Manufacturer: Subject to compliance with requirements, provide products of the following:

I. HEPA-Filtered Fan Units: The following machines are standard 2000 CFM machines, used in typical Microbiological abatement jobs:

Aerospace America, Inc. " Aero-Clean 2000"
900 Truman Parkway
P.O. Box 189
Bay City, Michigan 48707
(517) 684-2121

Abatement Technologies "HEPA-AIRE 1990 and HEPA-AIRE 2000"
3305 Breckinridge Blvd. #I 18
Duluth, GA 30136
(800) 634-9091 or (404) 925-2761

Global Consumer Services, Inc.
4615- IU E. Industrial St.
Sims Valley, CA 93063
(805) 579-0230

M-Tec Corp. Micro-Trap
1300 W. Steel Rd. Alumina 11
Unit #2
Morrisville, PA 19067
(215) 295-8208

2. Large Capacity: The following are large capacity 5000-6000 CFM machines used on large Microbiological abatement jobs:

Abatement Technologies "HEPA-AIRE 5000"
3305 Breckinridge Blvd. #118 model H5000C
Duluth, GA 30136
(800) 634-9091 or (404) 925-2761

3. Hazardous Locations: The following are pneumatically powered machines for use in Microbiological abatement jobs in hazardous locations where electric motors are prohibited.

"HEPA-AIRE PNEUMATIC"
3305 Breckinridge Blvd. #I 18 model H2000P

Duluth, GA 30136
(800) 634-9091 or (404) 925-2761

2.2 AUXILIARY GENERATOR

A. Auxiliary Generator: Provide a gasoline-powered, self-starting generator with a capacity adequate to power a minimum of 50 percent of the HEPA-filtered fan units in operation at any time during the work.

2.3 AUXILIARY POWER SWITCH

A. Auxiliary Power Switch: Provide a switching relay which will automatically start auxiliary generator and switch over power supplied to HEPA-filtered fan units to auxiliary generator.

PART 3 - EXECUTION

3.1 PRESSURE-DIFFERENTIALISOLATION

A. Isolate the work area from all adjacent areas or systems of the building with a pressure differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the work area.

B. Relative Pressure in Work Area: Continuously maintain the work area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure-differential when measured across any physical or critical barrier must equal or exceed a static pressure of 0.02 in. (0.5 mm) of water.

C. Accomplish the pressure-differential by exhausting a sufficient number of HEPA-filtered fan units from the work area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the work area. Determine the number of units required for pressure isolation by the following procedure:

I. Establish required air circulation in the work area, personnel and equipment decontamination units.

2. Establish isolation by increased pressure in adjacent areas or as part of seals where required.

3. Exhaust a sufficient number of units from the work area to develop the required pressure-differential.

4. The required number of units is the number determined above plus one additional unit.

5. Vent HEPA-filtered fan units to outside of building unless authorized in writing by designer.

6. Vent each HEPA-filtered fan unit to inlet of second unit. Vent second unit to a controlled area in the building. Insure that controlled area is isolated from balance of building by critical barriers at all times that units are in operation.

7. Mount units to exhaust directly or through disposable ductwork.

8. Use only new ductwork except for sheet metal connections and elbows.

9. Use ductwork and fittings of same diameter or larger than discharge connection on fan unit.

10. Use inflatable, disposable plastic ductwork in lengths not greater than 100 ft (30 meters).

11. Use spiral wire-reinforced flex duct in lengths not greater than SO ft (IS meters).

12. Arrange exhaust as required to inflate duct to a rigidity sufficient to prevent flapping.

13. If direction of discharge from fan unit is not aligned with duct, use sheet metal elbow to change direction. Use 6 ft (2 meters) of spiral wire reinforced flex duct after direction change.

D. isolation of elevators, stair towers, and return air intakes: Erect seals with an air space at doors to elevators and stair towers. Pressurize this space with HEPA-filteredair so that it is at a pressure greater than either the work area elevator shaft or stair tower.

I. Fabricate seal by first sealing door with duct tape and 6 mil polyethylene. Construct a barrier from 1/2 in. (13 mm) gypsum board supported by 3-5/8 in. (92 mm) x 25 gauge metal studs at 16 in. (410 mm) on centers. Space face of barrier a minimum of 3 in. (76 nun) from face of door. Seal barrier with 6 mil (0.15 mm) sheet plastic and duct tape.

2. Fabricate seal by first sealing door with duct tape and 6 mil (0.15 mm) polyethylene. Construct a barrier from 1/2in. (13 mm) CDX plywood supported by 2 in. x 4 in. (51 mm x 102 mm) wood studs at 16 in. (410 mm) on centers. Space face of barrier a minimum of 3 in. (76 mm) from face of door. Seal barrier with 6 mil (0.1S mm) sheet plastic and duct tape.

3. Use plywood and framing lumber that is treated to be fire resistant.

4. Pressurize space with exhaust from HEPA-filtered fan unit. Continuously maintain a pressure-differential with this space a minimum of 0.02 in. (0.5 mm) of water higher in static pressure than any adjacent space.

5. Locate HEPA-filtered fan unit outside of work area. Fabricate a manifold as required to distribute air to individual spaces to be isolated. Provide relief venting at unit as required to prevent shut down due to low air flow while still maintaining required air pressure.

E. Isolation of chases and enclosed stairs: Pressurize chases and enclosed stairs with HEPA filtered air so that it is at a pressure greater than any adjacent work area.

1. Pressurize space with centrifugal-type fans exhausted from HEPA-filtered fan units. Axial type fans are not to be used for this purpose. Continuously maintain a pressure-differential with this space a minimum of 0.02 in. (.5 mm) ofwater higher in static pressure than any adjacent work area.

F. Isolation of Return Air Duct Work: Return air duct work which must be kept operating is located in the work area. This duct work is to be isolated from the work area by an enclosure forming an annular space around the duct which is positively pressurized with HEPA-filtered air.

1. Wrap the duct with 6 mil (0.15 mm) polyethylene. Seal all polyethylene seams with spray glue and duct tape.

2. Enclose wrapped duct with two layers of polyethylene. Fabricate inner layer from 6 mil (0.15 mm) polyethylene with all seams sealed with spray glue and duct tape. Arrange outer layer to support inner layer. Fabricate out of reinforced sheet plastic with seams sealed with spray glue and duct tape and reinforced with staples. Support outer layer with a frame work fabricated from 2 in. x 4 in. (51 mm x 102 mm) at 24 in. (610 mm) on center. Enclosures less than 2 ft to 6 ft in diameter may be reinforced with box strapping in lieu of wood framing.

3.2 AUXILIARY GENERATOR

A. Provide auxiliary gasoline-powered generator located outside of the building in a location protected from the weather. Install the generator in a location so that the exhaust from the generator does not flow to any building ventilation or supplied-air intakes. Arrange so that if a power failure occurs the generator automatically starts and supplies power to a minimum of 50 percent of the HEPA-filtered fan units in operation.

3.3 AIR CIRULATION IN THE WORK AREA

A. Air Circulation: For purposes of this section, air circulation refers to either the introduction of outside air to the work area or the circulation and cleaning of air within the work area.

B. Air circulation in the work area is a minimum requirement intended to help maintain airborne organism counts at a level that does not significantly challenge the work area isolation measures. The contractor may also use this air circulation as part of the engineering controls in the worker protection program.

C. Determining the Air Circulation Requirements: The air flow volume (cubic meters per minute) exhausted (removed) from the workplace must exceed the amount of makeup air supplied to the enclosure. Provide a fully operational air circulation system supplying a minimum of the following air circulation rate:

1. Four air changes per hour.

D. Determine number of units needed to achieve required air circulation according to the following procedure:

I. Determine the volume in cubic ft of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by 60 and multiplying by the air change rate.

2. Air Circulation Required in Cubic Feet of Air per Minute (CFM)

$$\frac{\text{Volume of work area } (cu.\ \text{ft.})}{\text{(minutes per hour)}} \times \text{Number of air changes per hour}$$

3. Determine the volume in cubic meters of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute liters/second (LPS) for the work area by dividing this volume by 3.6 and multiplying by the air change rate.

4. Air Circulation Required in Liters/second

$$\frac{\text{Volume of work area (cubic meters)}}{3.6} \times \text{Number of air changes per hour}$$

5. Divide the air circulation requirement (CFM) ((LPS)) above by capacity of HEPA-filtered fan unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute (liters/second) with fully loaded filters (pressure-differential which causes loaded filter warning light to come on) in the machine's labeled operating characteristics.

6. Number of Units Needed=

$$\frac{\text{Air circulation Requirement (CFM) ((LPS))}}{\text{Capacity of Unit with Loaded Filters (CFM) ((LPS))}}$$

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

3.4 EXHAUST SYSTEM

A. Pressure-differential isolation and air circulation and pressure-differential in the work area are to be accomplished by an exhaust system as described below.

I. Exhaust all units from the work area to meet air circulation requirement of this section.

2. Location of HEPA-Filtered Fan Units: Locate fan 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 HEPA filtered fan unit(s) at a maximum distance from the worker access opening or other makeup air sources.

3. The end of the unit or its exhaust duct should be placed through an opening in the plastic barrier or wall covering. Seal plastic around the unit or duct with tape.

4. Vent to outside of building, unless authorized in writing by the designer.

5. Air Handling Unit Exhaust: The exhaust plume from air handling units should be located away from adjacent personnel and intakes for HYAC systems.

6. Decontamination Units: Arrange work area and decontamination units so that the majority of make-up air comes through the decontamination units. Use only personnel or equipment decontamination unit at any time and seal the other so that make up air passes through unit in use.

7. Supplemental Makeup Air Inlets: Provide where required for proper air flow through the work area in location approved by the designer by making openings in the plastic sheeting that allow air from outside the building into the work area. Locate auxiliary makeup air inlets as far as possible from the fan unit(s) (e.g., on an opposite wall), off the floor (preferably near the ceiling), and away from barriers that separate the work area from occupied clean areas. Cover with flaps to reseal automatically if the pressure-differential system should shut down for any reason. Spray flap and around opening with spray adhesive so that if flap closes meeting surfaces are both covered with adhesive. Use adhesive that forms contact bond when dry.

3.5 RECIRCULATION SYSTEM

A. Pressure-differential isolation and air circulation in the work area are to be accomplished by a recirculation system as described below.

I. Recirculate air in the work area through HEPA-filtered fan units to accomplishair circulation requirements of this section.

2. Location of Fan Units: Locate HEPA-filtered fan units so that air is circulated through all parts of the work area, and so that required pressure is maintained at all parts of work area geometry. Move units as necessary, so that in any location where Microbiological-containing materials are being disturbed, air movement is directed away from employees, and toward the HEPA filter fan unit. Direct airflow in these locations so that it is predominantly toward workers' backs at the breathing zone elevation.

3.6 AIR CIRCULATION IN DECONTAMINATION UNITS

A. Pressure-Differential Isolation: Continuously maintain the pressure-differential required for the work area in the:

1. Personnel Decontamination Unit: Across the clean room with the equipment room at a lower pressure than the clean room.

2. Equipment Decontamination Unit: Across the holding room with the washroomat a lower pressure than the clean room.

B. Air Circulation: Continuously maintain air circulation in decontamination units at same level as required for work area.

C. Air Movement: Arrange air circulation through the personnel decontamination unit so that it produces a movement of air from the clean room through the equipment room. At each opening, the airflow velocity must be sufficient to provide visible indications of air movement into the work area. The velocity of airflow within the enclosure must be adequate to remove airborne contamination from each worker's breathing zone without disturbing the Microbiological-containing material on surfaces.

3.7 USE OF THE PRESSURE-DIFFERENTIAL AND AIR CIRCULATION SYSTEM

A. General: Each unit shall be serviced by a dedicated minimum l 15V-20A circuit with ground fault circuit interrupter (GFCI) supplied from temporary power supply installed under requirements of Section 01503 "Temporary Facilities." Do not use existing branch circuits to power fan units.

B. Air Flow Tests: Air flow patterns will be checked before removal operations begin, at least once per operating shift and any time there is a question regarding the integrity of the enclosure. The primary test for airflow is to trace air currents with smokes tubes or other visual methods. Flow checks are made at each opening and at each doorway to demonstrate that air is being drawn into the enclosure and at each worker's position to show that air is being drawn away from the worker's location and toward the HEPA filtration unit.

C. Demonstrate condition of equipment for each HEPA-filtered fan unit and pressure differential monitoring equipment including proper operation of the following:

1. Squareness of HEPA tilters.
2. Condition of seals.
3. Proper operation of all lights.
4. Proper operation of automatic shut down if exhaust is blocked.
5. Proper operation of alarms.
6. Proper operation of magnehelic gauge.
7. Proper operation and calibration on pressure monitoring equipment.

D. Demonstrate operation of the pressure-differentia l system to the designer will include, but not be limited to, the following:

1. Plastic barriers and sheeting move lightly in toward work area.
2. Curtain of decontamination units move lightly in toward work area.
3. There is a noticeable movement of air through the decontamination unit.

4. Use smoke tube to demonstrate air movement from clean room through the equipment room.

5. Use smoke tubes to demonstrate a definite motion of air across all areas in which work is to be performed.

6. Use a differential pressure meter or manometer to demonstrate the required pressure-differential at every barrier separating the work area from the balance of the building, equipment, and ductwork or outside.

7. Modify the pressure-differential system as necessary to demonstrate successfully the above.

E. Use of System during Abatement Operations

1. Start fan units before beginning work (before any Microbiological-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant pressure-differential and air circulation until decontamination of the work area is complete. Do not tum off units at the end of the work shift or when abatement operations temporarily stop.

2. Monitoring Pressure within the Enclosure: After the initial airflow patterns have been checked, the static pressure must be monitored within the enclosure. Monitoring may be made using manometers, pressure gauges, or combinations of these devices. It is recommended that they be attached to alarms and strip chart recorders

3. Do not shut down air pressure-differential system during encapsulating procedures, unless authorized by the designer in writing. Supply sufficient pre-filters to allow frequent changes.

4. Start abatement work at a location farthest from the fan 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 fan units are operating again.

S. Corrective Actions: If the manometers or pressure gauges demonstrate a reduction in pressure-differential below the required level, work should cease and the reason for the change investigated and appropriate changes made. The airflow patterns should be retested before work begins again.

F. Dismantling the System

I. When a final inspection and the results of final air tests indicate that the area has been decontaminated, fan units may be removed from the work area. Before removal from the work area, remove and properly dispose of prefilter, decontaminate exterior of machine and seal intake to the machine with 6 ml (0.1S mm) polyethylene to prevent environmental contamination from the filters.

END OF SECTION - 01513

SECTION 01526 - TEMPORARY ENCLOSURES

PART I-GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and other Division I specification sections, apply to work of this section.

1.2 SUBMITTALS

A. Before start of work submit the following to the designer for review. Do not begin work until these submittals are returned with the designer's action stamp indicating that the submittal is returned for unrestricted use.

I. Strippable Coatings: Submit following:

a. Product description including major components and solvents.

b. Test report on ASTM E84 test of surface burning characteristics.

c. Manufacturer's installation instructions. Indicate portions applicable to the project and selected assemblies where the manufacturer offers alternatives.

2. Spray Cement: Submit following:

a. Product description including major components and solvents.

b. Manufacturer's installation instructions. Indicate portions applicable to the project.

3. Sheet Plastic: For fire retardant plastic submit test reports on NFPA 701 test.

4. Signs: Submit samples of signs to be used.

B. Before start of work submit the following to the designer for review. Do not begin work until these submittals are returned with the designer's action stamp indicating that the submittal has been "Received - Not Reviewed."

l. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for the following:

a. Strippable coating.

b. Spray cement.

PART 2 - PRODUCTS

2.1 SHEET PLASTIC

A. Polyethylene Sheet: 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 (0.15 mm) thick frosted or black as indicated.

2.2 STRIPPABLE COATINGS

A. Strippable Coatings: Provide strippable coatings in aerosol cans or premixed for spray application formulated to adhere gently to surfaces and remove cleanly by peeling off at the completion of the work.

I. Provide only water-based latex materials.

2. Provide materials manufactured for the specific application required.

B. Wall Coating: Designed to be easy to remove.

C. Floor Coating: Designed to provide a tough film, which resists spread of water beneath plastic layer.

D. Window Coating: Recommended by the manufacturer for use on windows. Supply materials that are designed to be stable on glass in sunlight and resist the transmission of ultraviolet radiation.

E. Fire Safety: Provide materials that meet the following requirements:

I. When wet or while being installed:

a. Do not create combustible vapors.

b. Have no flash point.

c. Are not noxious.

d. Department of Transportation category of non-flammable.

2. When dry, material must have a Class A rating as a building material and meet the following requirements when tested in accordance with ASTM E-84:

a. Flame spread no greater than 20.

b. Fuel contributed 0.

c. Smoke developed no more than 110.

F. Deliver materials to the job site in unopened, factory-labeled containers.

G. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

H. Manufacturer: Subject to compliance with requirements, provide products of one of the following:

1. Isotek Corporation Spray Poly
P.O. Box 29799
New Orleans, LA 70189-0799
(504) 367-9856

2. H.B. Fuller Co. Spray Poly
3900 Jackson St., NE Part no. 3256
Minneapolis, MN 55421
(800) 328-4594

2.3 MISCELLANEOUS MATERIALS

A. Duct Tape: Provide duct tape in 2 in. or 3 in. (50 mm or 75 mm) or wider widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

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

PART 3 - EXECUTION

3.1 SEQUENCE OF WORK

A. Carry out work of this section sequentially. Complete each of the following activities in accordance with requirements before proceeding to the next.

1. Provide emergency exits and emergency lighting.

2. Control access.

3. Provide respiratory and worker protection.

4. Provide critical barriers.

5. Prepare area.

6. Provide isolation areas as required.

7. Provide secondary barrier.

3.2 GENERAL

A. Work Area: The location where Microbiological abatement work occurs. The work area 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 Microbiological control work.

B. Completely isolate the work area from other parts of the building so as to prevent Microbiological containing dust or debris from passing beyond the isolated area. Should the area beyond the work area(s) become contaminated with Microbiological-containing dust or debris because of the work, clean those areas in accordance with the procedures indicated in Section O1711. Perform all such required cleaning or decontamination at no additional cost to owner.

C. Construct enclosures to provide an airtight seal around ducts and openings into existing ventilation systems and around penetrations for electrical conduits, telephone wires, water lines, drain pipes, etc. Construct enclosures to be both airtight and watertight except for those openings designed to provide entry and/or air flow control.

D. Size: Construct enclosure with sufficient volume to encompass all of the working surfaces yet allow unencumbered movement by the worker(s), provide unrestricted air flow past the worker(s), and ensure walking surfaces can be kept free of tripping hazards.

E. Shape: The enclosure may be any shape that optimizes the flow of ventilation air past the worker(s).

F. Structural Integrity: The walls, ceilings, and floors must be supported in such a manner that portions of the enclosure will not fall down during normal use.

G. Barrier Supports: Provide frames as necessary to support all unsupported spans of sheeting.

H. Openings: It is not necessary that the structure be airtight; openings may be designed to direct airflow. Such openings are to be located at a distance from active removal operations. They are to be designed to draw air into the enclosure under all anticipated circumstances. In the event that negative pressure is lost, they are to be fitted with either HEPA filters to trap dust or automatic trap doors that prevent dust from escaping the enclosure. Openings for exits are to be controlled by an airlock or a vestibule.

I. Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to completion of work area isolation.

J. Areas Within an Enclosure: Each enclosure consists of a work area, a decontamination area, and waste storage area. The work area where the Microbiological removal operations occur are to be separated from both the waste storage area and the contamination control area by physical curtains, doors, and/or airflow patterns that force any airborne contamination back into the work area.

K. Removing Mobile Objects: Clean movable objects and remove them from the work area before an enclosure is constructed unless moving the objects creates a hazard. Mobile objects will be assumed to be Microbiological contaminated and are to be either cleaned with amended water and a HEPA vacuum and then removed from the area or wrapped and then disposed of as Microbiological-contaminated waste.

L. Disabling HVAC Systems: The power to the heating, ventilation, and air conditioning systems that service the regulated area must be deactivated and locked out. All ducts, grills, access ports, windows, and vents must be sealed off with two layers of plastic to prevent entrainment of contaminated air.

M. Operating HVAC Systems in the Regulated Area: If components of an HYAC system located in the regulated area are connected to a system that will service another zone during the project, the portion of the duct in the regulated area must be sealed and pressurized. Necessary precautions include caulking the duct joints, covering all cracks and openings with two layers of sheeting, and pressurizing the duct throughout the duration of the project by restricting the return air flow. The power to the fan supplying the positive pressure should be locked "on" to prevent pressure loss.

I. If fan providing positive pressure fails for any reason, immediately stop Microbiological removal work, mist the area to reduce airborne organism levels. Notify the project administrator. Do not re-start Microbiological removal work until authorized by the designer.

Lockout power to work area by switching off all breakers serving power or lighting circuits in work area. A lock and tag shall be placed on each breaker used to de-energize circuits and equipment with notation "DANGER circuit being worked on." Lock panel and have all keys under control of authorized person who has applied the locks.

0. Lockout power to circuits running through work area wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on." Lock panel and have all keys under control of authorized person who applied locks. If circuits cannot be shut down for any reason, label at intervals four ft (1-22 in) on center with signs reading, "DANGER live electric circuit. Electrocution hazard." Label circuits in hidden locations, but which may be affected by the work in a similar manner.

P. Inspection Windows: Install inspection windows in locations shown on the plans or as directed by the designer. Each inspection window is to have a 24 in. x 24 in. (610 mm x 610 mm) viewing area fabricated from 1/4 in. (6.35 mm) acrylic or polycarbonate sheet. Install window with top at 6 ft-6 in. (l.98 in) above floor height in a manner that provides unobstructed vision from outside to inside of the work area. Protect window from damage from scratching, dirt, or any coatings used during the work. A sufficient number of windows are to be installed to provide observation of all portions of the work area that can be made visible from adjacent areas. Inspection windows that open into uncontrolled area are to be covered with a removable plywood hatch secured by lock and key. Provide keys to designer for all such locks.

3.3 EMERGENCY EXITS

A. Provide emergency exits and emergency lighting as set forth below:

I. Emergency Exits: At each existing exit door from the work area provide the following means for emergency exiting:

2. Arrange exit door so that it is secure from outside the work area but permits exiting from the work area.

3. Mark outline of door on primary and critical barriers with luminescent paint at least I in. (25.4 mm) wide. Hang a razor knife on a string beside outline. Arrange critical and primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least one ft high and 2 in. (50.8 mm) wide.

4. Provide lighted EXIT sign at each exit.

5. Provide battery-operated emergency lighting that switches on automatically in the event of a power failure.

3.4 CONTROL ACCESS

A. Isolate the work area to prevent entry by building occupants into work area or surrounding controlled areas. Accomplish isolation by the following:

1. Submit to designer a list of doors and other openings that must be secured to isolate work area. Include on list notation if door or opening is in an indicated exit route.

2. After receiving written authorization from the designer, lock all doors into work area, or, if doors cannot be locked, chain shut. Notify the local fire department of the list of doors/or other openings, which must be chained or otherwise secured shut. Cover any signs that direct emergency exiting, either outside or inside of work area, to loc ked doors. Do not obstruct doors required for emergency exits from work area or from building.

3. After receiving written authorization from the designer, construct partitions or closures across any opening into work area. Partitions are to be a minimum of 8 ft (2.44 meters) high. Fabricate Partitions from one of the following methods:

- Fabricate partitions from 3-5/8 in. (9.21 cm), 25 gage metal studs with 1/2in. (1.27 cm) gypsum board on both faces. Brace at intervals of 4 ft (1.22 m) on center.

- Fabricate partitions from 2 in. x 4 in. (50.8 mm x 101.6 mm) wood studs with l/2in. (1.27 cm) plywood on both faces. Brace at intervals of 4 ft (1.25 m) on center.

- Fabricate partitions from 2 in. x 4 in. (50.8 mm x IO1.6 mm) wood studs with 1/2in. (1.27 cm) plywood on both faces. Brace at intervals of 4 ft (1.22 m) on center. Use only fire retardant treated wood.

- Fabric-type folding partitions: provide temporary partitions across fabric-type folding doors or partitions into work area.

- Rigid-type folding partitions: remove operating bar and latch on clean side of folding partitions. Fasten down operating lever with hook and chain or other secure device on work area side. At completion of all abatement, work reinstall bar and latch and adjust for proper operation.

4. Replace passage sets on doors required for exiting from work area with temporary locksets for duration of the project. Use entry type locksets that are key lockable from one side and always operable from inside. Install locksets with key side in stair tower and escape side on work area side. Provide one key to owner and maintain one key in clean room of decontamination unit.

B. Locked Access: Arrange work area so that the only access into work area is through lockable doors to personnel and equipment decontamination units.

I. Install temporary doors with entrance type locksets that are key lockable from the outside and always unlocked and operable from the inside. Do not use deadbolts or padlocks.

2. Replace locksets or passage sets on doors leading to decontamination units with temporary locksets for duration of the project. Remove any deadbolts or padlocks. Use entry type locksets that are key lockable from outside and always unlocked and operable from inside.

3. Provide one key for each door to owner and designer, and maintain one key in clean room of decontamination unit (three total).

C. Visual Barrier: Where the work area is immediately adjacent to or within view of occupied areas provides a visual barrier of opaque polyethylene sheeting at least 6 mil (0.1S mm) in thickness so that the work procedures are not visible to building occupants. Where this visual barrier would block natural light, substitute frosted or woven rip-stop sheet plastic in locations approved by the designer.

D. Demarcation. Demarcate the regulated area in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne concentration s of Microbiological. Where critical barriers or negative pressure enclosures are used, they may demarcate the regulated area.

E. Access. Limit access to regulated areas to authorized persons as defined by OSHA, and to the owner, designer, project administrator, or a representative authorized by one of these entities.

F. Provide warning signs at each locked door leading to work area reading as follows:

I. Print text in both English and Spanish

Legend	Notation
KEEP OUT Block	3 in. (77 mm) Sans Serif Gothic or
BEYOND THIS POIN Block	I in. (25 .4 mm) Sans Serif Gothic or
MICROBIOLOGICAL ABATEMENT WORK Block	I in. (25.4 mm) Sans Serif Gothic or
IN PROGRESS Block	I in. (25.4 mm) Sans Serif Gothic or
BREATHING MICROBIOLOGICAL HAZARD MAY BE HAZARDOUS TO YOUR HEALTH	14 Point Gothic

2. Provide warning signs at each locked door leading to work area reading as follows

Legend	Notation
KEEP OUT Block	3 in. (77 mm) Sans Serif Gothic or
CONSTRUCTIO Block	I in. (2 5.4 mm) Sans Serif Gothic or
WORK AREA Block	I in . (25.4 mm) Sans Serif Gothic or
PROTECTIVE CLOTHING REQUIRED BEYO D THIS POINT	14 Point Gothic

3. Immediately inside door and outside critical barriers post an approximately 20 in. x 14 in. (508 mm x 356 mm) manufactured caution sign displaying the following legend with letter sizes and styles of a visibility adequate for sight at 20 feet.

Legend
DANGER
MICROBIOLOGICAL HAZARD
AUTHORIZED PERSONNEL O LY
RESPIRATORS A D PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

4. Provide spacing between respective lines at least equal to the height of the respective upper line.

3.5 RESPIRATORY AND WORKER PROTECTION

A. Before proceeding beyond this point in providing temporary enclosures:

1. Provide worker protection per Section 01560.

2. Provide respiratory protection per Section 0 I562.

3. Provide personnel decontamination unit per Section 01563.

3.6 CRITICAL BARRIERS

A. Completely separate the work area from other portions of the building, and the outside by closing all openings with sheet plastic barriers at least 6 mil (0.15 mm) in thickness, or by sealing cracks leading out of work area with duct tape.

B. 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 (0.15 mm) in thickness, taped securely in place with duct tape. Maintain seal until all work including project decontamination is completed. Take care in sealing of lighting fixtures to avoid melting or burning of sheeting.

C. Provide sheet plastic barriers at least 6 mil (0.15 mm) in thickness as required to seal openings completely from the work area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.

D. Mechanically support sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic. Following are acceptable methods of supporting sheet plastic barriers. Alternative support methods may be used if approved in writing by the designer.

1. Plywood squares 6 in. x 6 in. x 3/8 in. (152 mm x I 52 mm x 9.53 mm) held in place with one 6d smooth masonry nail or electro-galvanized common nail driven through center of the plywood and duct tape on plastic so that plywood clamps plastic to the wall. Locate plywood squares at each end, comer and at maximum 4 ft (1.22 in) on centers.

2. Nylon or polypropylene rope or wire with a maximum unsupported span of 10 ft (3.05 m), minimum 1/4 in. (6.35 mm) in diameter suspended between supports securely fastened on either side of opening at maximum I ft (304.8 mm) below ceiling. Tighten rope so that it has 2 in. (50.8 mm) maximum dip. Drape plastic over rope from outside work area so that a 2 ft long flap of plastic extends over rope into work area. Staple or wire plastic to itself l in. (25.4 mm) below rope at maximum 6 in. (152 mm) on centers to form a sheath over rope. Lift flap and seal to ceiling with duct tape or spray cement. Seal loop at bottom of flap with duct tape. Erect entire assembly so that it hangs vertically without a "shelf' upon which debris could collect.

E. Provide pressure-differential system per Section O1513.

1. Clean housings and ducts of all over spray materials prior to erection of any critical barrier that will restrict access.

3.7 PREPARE AREA

A. Scaffolding: If fixed scaffolding is to be used to provide access, HEPA vacuum and wet clean area prior to scaffolding installation.

B. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc., which cover any part of the surface to beworked on with the work.

C. Remove all general construction items such as cabinets, casework, door and window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference with the work. Clean, decontaminate and reinstall all such

materials, upon completion of all removal work with materials, finishes, and workmanship to match existing installations before start of work.

D. Clean all contaminated furniture, equipment, and or supplies with a HEPA-filtered vacuum cleaner or by wet cleaning, as specified in Section O1712 Cleaning and Decontamination Procedures, prior to being moved or covered. All equipment furniture, etc. is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by the designer.

E. Clean all surfaces in work area with a HEPA-filtered vacuum or by wet wiping prior to the installation of primary barrier.

F. Cleaning and Sealing Surfaces: After cleaning with water and a HEPA vacuum, surfaces of stationary objects should be covered with two layers of plastic sheeting. The sheeting should be secured with duct tape or an equivalent method to provide a tight seal around the object.

3.10 ISOLATION AREA

A. Maintain isolation areas between the work area and adjacent building area.

I. In locations shown on the plans.

1. In unoccupied rooms located between work area and adjacent occupied portions of the building.

2. In locations where separation between work area and occupied portions of building is formed by sheet plastic and/or temporary barriers.

3. Floor below work area.

B. Form isolation area by controlling access to the space in the same manner as a work area. Physically isolate the space from the work area and adjacent areas. Accomplish physical isolation by:

I. Installing critical barriers in unoccupied space.

2. Erecting a second critical barrier a minimum of 3 ft (1.0 m) away from work area.

3.11 STOP WORK

A. If the critical or primary barrier falls or is breached in any manner, stop Microbiological removal work immediately and comply with "Stop Work" requirements of Section OIO13 "Summary of Work - Microbiological Abatement." Do not start work until authorized in writing by the designer.

3.12 EXTENSION OF WORK AREA

A. Extension of Work Area: If the critical barrier is breached in any manner that could allow the passage of Microbiological debris or airborne organisms, then add the affected area to the work area, enclose it as required by this section of the specification, and decontaminate it as described in Sect ion O1711 Project Decontamination.

3.13 SECONDARY BARRIER

A. Secondary layer of plastic as a drop cloth to protect the primary layer from debris generated by the Microbiological abatement work is specified in the appropriate work sections.

3.14 EXTERIOR ENCLOSURES

A. Construct exterior enclosures as a critical barrier as necessary to completely enclose the work. Fabricate from reinforced polyethylene sheeting and 2 in. x 4 in. (51 mm x 102 mm) wood framework. Attach to existing building components or brace as necessary for lateral stability. Construct walls to meet all state and local regulations for const ruction of temporary buildings. Construct to resist a wind of 30 MPH (13.41 m/s), slope ceiling to permit drainage of rainwater.

SECTION 01527 - REGULATED AREAS

PART I-GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division 1 specification sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Respiratory Protection is specified in Section O1562 "Respiratory Protection."

8. Wet decontamination facilities are described in Section O1563 "Decontamination Units."

1.3 DESCRIPTION OF WORK

A. Work of this section consists of preparing a regulated area for work of the following specification sections only. Do not use procedures set forth in this section in connection with any other work.

1. Section O1528 Entry Into Controlled Areas.

2. Section O1529 Mini-Enclosures.

3. Section 01712 Cleaning and Decontamination Procedures.

1.4 SUBMITTALS

A. Before the Start of Work: Submit the following to the designer for review. Begin no work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1. HEPA-Filtered Vacuum Cleaners: Submit product data.

2. Signs: Submit samples of each type of sign to be used.

3. Warning Tape: Submit samples.

PART 2 - EQUIPMENT

2.1 PRODUCTS

A. HEPA Filter Vacuum Cleaners

I. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products, which may be incorporated in the work, include, but are not limited to, the following:

Nilfisk of America, Inc.
HEPA-filtered
225 Great Valley Parkway
Malvern, PA 19355
(800) 645-3475

Vacuums

Minuteman International
I 11 South Route 53
HEPA Vacuums
Addison, IL 60101
(708) 627-6900

Minuteman

Pullman-Holt (White) Corp.
PO Box 16647
Tampa, FL 33617
(813) 645-3475

HEPA-Filtered
Vacuums

B. Plastic Sheet

I. Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil (0.15 mm) thick, clear, frosted, or black as indicated.

PART 3 - EXECUTION

3.1 SECURING WORK AREA

A. Secure work area from access by occupants, staff, or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area, by scheduling work for periods of time that the building is unoccupied, or by constructing temporary wood stud and plywood barriers.

3.2 DEMARCATION OF REGULATED AREA

A. Demarcation. Demarcate the regulated area with a sheet plastic drop cloth, signs and barrier tape. Configure the regulated area in a manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne concentrations of Microbiological contaminants.

1. Drop Cloth: Cover floor in vicinity of work area and 6 ft (1.82 meters) beyond, with 6 mil (0.15 mm) polyethylene drop sheet. Where work is adjacent to wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the regulated area.

2. Signs: Post warning signs that carry the following legends in both English and Spanish:

a. First Sign: Provide warning signs at each locked door leading to the controlled area reading as follows:

Legend
Notation

KEEP OUT 3 in. (76.2 mm) Block

b. Second Sign: Immediately inside the locked door and outside the controlled area post an approximately 20 in. x 14 in. (508 mm x 356 mm) manufacturedcaution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926.

Legend:
DANGER
MICROBIOLOGICAL HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS A D PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

3. Barrier Tape: Where the controlled area is in a large area such as in part of a boiler room or open office area, delineate area with 3 in. (76.2 mm) wide polyethylene ribbon with the printed warning, "CAUTION MICROBIOLOGICALREMOVAL." Install this ribbon at between 3 ft and 4 ft (0.91 and 1.22 meters) above the floor.

3.3 SCHEDULING

A. Work may be carried out during normal working hours in those areas which can be completely secured by lockable doors from access by building occupants and staff, and which have HVAC equipment that can be shut down and locked off. Otherwise, work is to be carried out after building occupants and cleaning staff have left.

3.4 GENERAL PROCEDURES

A. The following precautions and procedures have application to work of this section. Workers must exercise caution to avoid release of Microbiological organisms into the air:

1. Setup and management of the controlled area is to be under the supervision of a competent person as described in Section 0l 043 Project Coordination Microbiological Abatement

2. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the regulated area.

3. Shut down any air handling equipment-bringing air into or out of the regulated area.

4. Clean any existing dust or debris from the floor and walls, and other surface in the immediate location of the work prior to commencing work by damp mopping or by use of a High-Efficiency Particulate Air (HEPA) filtered vacuum.

5. Cover floor in vicinity of work area and 6 ft (1.82 meters) beyond, with 6 mil (0.15 mm) polyethylene drop sheet. Where work is adjacent to wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the regulated area.

6. Seal all openings, supply and exhaust vents, and convectors within 10 ft (3.05 meters) of the work area with 6 mil (0.1S mm) polyethylene sheeting secured and completely sealed with duct tape.

7. Perform the work per the appropriate specification section while on plastic drop sheet.

8. Immediately remove any Microbiological-containing debris which collects on the drop sheet either by using a HEPA vacuum or by spraying with amended water or removal encapsulant, collecting with wet paper towels, placing in a disposal bag while still wet, and cleaning surface of plastic sheet with wet paper towels.

9. Complete the following at conclusion of work in an area before stepping off drop sheet

   a. While standing on plastic sheet, thoroughly HEPA vacuum ladder and any tools used and pass to worker standing off sheet.

   b. Worker standing off the sheet, thoroughly HEPA vacuum the worker standing on the sheet.

   c. Worker on the sheet, thoroughly HEPA vacuum all surfaces of the plastic sheet, bags, and any other items on the sheet including the worker's feet.

10. If moving to the next work area in the same secured area: Worker on the drop sheet is to don clean foot covers, placing each foot, in turn, off the sheet as the foot cover is put on. Remove clean foot covers at the next work area while standing on the sheet. Dispose of the used foot covers along with the plastic sheet at completion of work in that area. Do not reuse foot covers to move off the sheet.

11. If workday is complete or if next work area is in another secured area: All workers remove paper suits turning them inside out while doing so. The person on the sheet steps with each foot off the sheet as the foot covers are removed.

12. Fold sheet and all its contents toward the center.

13. Place the sheet in a properly labeled disposal bag.

14. Neck down the bag and collapse it with the HEPA vacuum.

IS. Twist the bag shut, bend over, and seal with duct tape by wrapping around bag neck at least three times.

16 Clean all surfaces of the work area by use of a HEPA filter vacuum until no visible residue remains.

B. At completion of work, require all workers to complete wet decontamination procedures in accordance with Section OI 560 Worker Protection - Microbiological-Abatement.

SECTION 01528 - ENTRY INTO CONTROLLED AREAS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division I specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. The provisions of this section apply when entry is required into an area where such entry could cause contamination of portions of the building and/or where respiratory or other worker protection measures are required.

B. Unless authorized in writing by the designer, the provisions of this section apply to only the following situations:

1. Entry into the space above a suspended ceiling where there is exposed microbiological-containing fireproofing, visible microbiological-containing debris, or other microbiological-containing surfacing material when the ceiling tiles in an area no greater than 6 ft by 12 ft (1.83 x 3.66 meters) area to be removed.

2. Entry through sealed access (access door, hatchway, locked door) into an area with microbiological-containing surfacing materials or visible debris.

C. Worker Protection: Use procedures of this section only where a negative exposure assessment has been made for these procedures. Historic airborne organism data demonstrate that personal airborne organism counts in the breathing zone of those performing the work can be continuously maintained equal to ambient levels of fungi.

D. Area Protection: Use procedures of this section only where historic airborne organism data demonstrate that area samples in the work area can be continuously maintained at less than the ambient microbiological organism concentration.

1.3 SUBMITTALS

A. Before the Start of Work: Submit the following to the designer for review. Begin no work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1. Historic Airborne Organism Data: Submit airborne Microbiological organism count data from an independent air-monitoring firm to demonstrate:

a. The ability to perform work of this section while maintaining an airborne organism count equal to ambient levels of fungal organisms.

b. The ability to perform work of this section while maintaining an airborne organism count below 0.01 organisms per cubic centimeter in the work area.

2. Include the following data for each procedure required by the work:

   a. Date of measurements.
   b. Operations monitored.
   c. Sampling and analytical methods used and evidence of their accuracy.
   d. Number, duration, and results of samples taken.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 REGULATED AREA

A. Prior to beginning work in this area, establish a regulated area as described in Section 01527 Regulated Areas.

3.2 ACCESS THROUGH SUSPENDED CEILINGS

A. Remove acoustical panels from ceiling suspension system using the following sequence:

   1. Follow worker protection procedures including disposable coveralls and respirators required by Section O1560, and Section 01562.

   2. Follow local area protection procedures of Section O1528. Spread layer of 6 mil (0.15 mm) polyethylene sheet on floor 6 ft (1.83 meters) further in extent than the size of the ceiling opening to be made.

   3. HEPA vacuum around edges of all panels to be removed.

   4. While holding nozzle of HEPA vacuum in vicinity, slowly lift one edge of center ceiling panel. Immediately HEPA vacuum space at lifted edge. Lift entire panel straight up and HEPA vacuum all four sides.

   5. Place panel on top of adjacent ceiling.

   6. Place intake duct to HEPA-filtered fan unit per Section O1513 in space above ceiling and fasten in place. Operate machine continuously while ceiling is open.

   7. Note that the operation of the HEPA vacuum is intended to clean the air in the location of the work. As such, the nozzle should be kept above the ceiling as much as possible and the canister on the floor.

   8. Climb to a position, which permits access to the top of the ceiling adjacent to the removed panel.
   9. Working in the space above the ceiling, HEPA vacuum both sides of the ceiling panel first removed and hand it down into a 6 mil (0.15 mm) polyethylene bag for storage.

   I0. Remove loose material hanging from the microbiological-containing material with the suction from the HEPA vacuum.

11. Pass wand of operating HEPA vacuum through air between Microbiological-containing material and top of ceiling.

12. HEPA vacuum the tops of all ceiling panels, which are in reach.

13. Carefully HEPA vacuum the crack between the suspension system and ceiling panels from the top for all ceiling panels within reach.

14. Remove ceiling panels as required while constantly HEPA vacuuming all four edges of panel and suspension system.

15. Working in space above ceiling, HEPA vacuum both sides on each panel removed and hand each down into a 6 mil (0.15 mm) polyethylene bag which is labeled as set forth is Section 02084.

16. Maintain HEPA vacuum in operation with nozzle above ceiling and exhaust at floor for the entire time that the ceiling is open and work is being done above the ceiling.

17. When above-ceiling work is complete, replace ceiling panels.

18. HEPA vacuum worker's head, arm, and shoulders before climbing down from ceiling.

19. HEPA vacuum ladder while climbing down.

20. While standing on plastic sheet, thoroughly HEPA vacuum ladder and pass it to person standing off sheet.

3.3 ENTRY INTO CONTROLLED AREAS

A. Use same procedure as above except that ceiling tiles do not need to be removed.

B. If access is through a wall hatch or door, duct tape floor sheet to wall or threshold.

C. If access is into large area such as crawl tunnel, comply with worker protection requirements but use HEPA vacuum only for work procedures in the area.

3.4 **PERSONNEL DECONTAMINATION**

A. At the end of all work, change to a clean disposable coverall and, leaving respirator in place, proceed to a remote decontaminate unit as required by Section 01560 Worker Protection - Microbiological Abatement.

END OF SECTION - 01528

SECTION 01560 - WORKER PROTECTION - MICROBIOLOGICAL ABATEMENT

PART 1 - GENERAL

I.I RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division I specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

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

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Respiratory protection is specified in Section OI 562.

1.4 WORKER TRAINING

A. All workers are to be accredited by the Association of Specialists in Cleaning & Restoration (ASCR) or the Institute of Inspection, Cleaning & Restoration Certification (IICRC)

B. All workers must be trained in the use of respiratory protection devices.

1.5 MEDICAL SURVEILLANCE

A. Provide a medical surveillance program and physician's opinion before a respirator is assigned as required by 29 CFR 1910.134 and 29 CFR 1926.103(e)(I0).

C. Provide medical examination that as a minimum meets OSHA requirements as set forth in 29 CFR 1926 .1 10I. In addition, require that the physician provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

1.6 SUBMITTALS

A. Before Start of Work: Submit the following to the designer for review. Do not start work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use.

Submit evidence that all workers have been trained, certified and accredited as required.

2. Certificate Worker Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the work area.

3. 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:

   a. Name and social security number;

   b. The physician's written opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to Microbiological organisms;

   c. Any recommended limitations on the employee or on the use of personal protective equipment such as respirators;

   d. A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions that may result from Microbiological exposure;

   e. A legible typed version of the physician's name, the physician's signature, and date of examination.

3. Notarized Certifications: Submit certification signed by an officer of the abatement-contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926 and 29 CFR 1910.

PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING

A. General. Provide and require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of Microbiological organisms.

B. Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the work area. Provide a sufficient number for all required changes, for all workers in the work area.

C. Coveralls: Provide full-body coveralls and head covering, and require that it be worn by all workers in the work area. Require that workers change out of coveralls in the equipment room of the personnel decontamination unit. Dispose of coveralls as Microbiological waste at completion of all work.

D. Additional Protective Clothing: Provide each worker with the protective clothing as required by federal, state, and local regulations. This includes, but is not necessarily limited to: hard hats, cold weather gear, gloves, boots, safety glasses and goggles.

E. Cold Weather Gear: Provide each worker with an insulated jacket, pants, gloves, and hat. Require that cold weather gear be removed in equipment room of personnel decontamination unit. Dispose of cold weather gear as Microbiological waste at completion of all work.

F. Boots: Provide work boots with non-skid soles, and where required by OSHA, foot protection for all workers. Provide boots at no cost to workers. Paint uppers of all boots red with waterproof enamel. Do not allow boots to be removed from the work area for any reason, after being contaminated with MCM. Dispose of boots as Microbiological-contaminated waste at the end of the work.

G. Hard Hats: Provide head protection (hard hats) as required by OSHA for all workers, and provide four spares for use by designer, project administrator, and owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the work area throughout the work. Thoroughly clean, decontaminate and bag hatsbefore removing them from work area at the end of the work.

H. Goggles: Provide eye protection (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury. Thoroughly clean, decontaminate and bag goggles before removing them from work area at the end of the work.

I. Gloves: Provide work gloves to all workers and require that they be worn at all times in the work area. Do not remove gloves from work area. Dispose of as Microbiological-contaminated waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT

A. Disposable coveralls, head covers, and footwear covers shall be provided by the contractor for the owner, designer, project administrator, and other authorized representatives who may inspect the job site. Provide six (3) complete coveralls per day.

PART 3-EXECUTION

3.1 GENERAL

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

B. Each time work area is entered, remove all street clothes in the changing room of the personnel decontamination unit and put on new disposable coveralls, new head cover, and a clean respirator. Proceed through clean room to equipment room and put on work boots.

3.2 DECONTAMINATION PROCEDURES

A. Require that all workers adhere to the following personal decontamination procedures whenever they leave the work area wearing an Air-Purifying Negative Pressure Respirator:

- Remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.

- Still wearing respirators, proceed to clean room. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid microbiological organisms. The following procedure is required as a minimum:

- Take a deep breath, hold it and/or exhale slowly, wet wipe face, thoroughly wetting face, respirator and filter (air-purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breathe.

- Dispose of wet filters from air-purifying respirator.

- Carefully wash facepiece of respirator inside and out.

- Proceed from clean room to changing room and change into street clothes or into new disposable work items.

B. Within Work Area

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

END OF SECTION - 01560

SEC TION 01562 - RESPIRATORY PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division I specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Instruct and train each worker involved in microbiological abatement or maintenance and repair of microbiological-containing materials (MCM) in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face in the work area from the start of any operation which may cause airborne microbiological organisms until the work area is completely decontaminated. Use respiratory protection appropriate for the organism level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

1.3 DEFINITIONS

A. "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.

B. "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.

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

1.4 STANDARDS

A. Except to the extent that more stringent requirements are written directly into the contract documents, the latest edition of the following regulations and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.

1. OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards Section 29 CFR 1910.134.

2. CGA - Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.I "Commodity Specification for Air. "

3. CSA - Canadian Standard Association, Rexdal, Ontario, Standard Z180.1, "Compressed Breathing Air."

4. ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2.

5. NIOSH - National Institute for Occupational Safety and Health.

   NIOSH Respirator Decision Logic (May 1987) DHHS/NIOSH Publication No. 87-108;

   42 CFR 84, NIOSH Standard for Certification of Non-Powered Air Purifying Respirator filters; and

   30 CFR 11, NTOSH - Certification of Respirators.

6. MSHA - Mine Safety and Health Administration

1.5 SUBMITTALS

A. Before start of work, submit the following to the designer for review. Do not begin work until these submittals are returned with the designer's action stamp indicating that the submittal is returned for unrestricted use.

1. Product Data: Submit manufacturer's product information for each component used, including NJOSH and MSHA certifications for each component in an assembly and/or for entire assembly.

2. Respiratory Protection Program: Submit contractor's written respiratory protection program manual as required by OSHA 1910.134.

1.6 DELIVERY

A. Deliver replacement parts, etc., not otherwise labeled by NTOSH or MSHA to job site in manufacturer's containers.

PART 2 - EQUIPMENT

2.1 AIR-PURIFYING RESPIRATORS

A. Respirator Bodies: Provide full-face type respirators. Equip full-face respirators witha nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32'F (0°C).

B. Filter Cartridges: Provide, at a minimum, N-, R-, or P-100 HEPA-type filters labeled with NIOSH certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Microbiological-Containing Dusts and Mists" and color-coded in accordance with 42 CFR Part 84 and ANSI Z 88.2. Also, additional cartridge sections 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 NTOSH Certification.

C. Non - Permitted Respirators: Do not use single use, disposable, or half-face or quarter-face respirators.

PART 3 - EXECUTION

3.1 GENERAL

A. Respiratory Protection Program: Comply with ANSI Z 88.2 "Practices for Respiratory Protection" and OSHA 29 CFR 1910.134.

B. Require that respirators be used in the following circumstances:

1. During all microbiological work.

C. Require that respiratory protection be used at all times that there is any possibility of disturbance of MCM whether intentional or accidental.

D. 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 organisms until the area has been cleared for re-occupancy in accordance with Section OI71 1.

E. Regardless of Airborne Organism Levels: Require that the minimum level of respiratory protection used be full-face, air-purifying respirators with high-efficiency (HEPA) filters.

F. Do not allow the use of single-use, disposable, half-face or quarter-face respiratorsfor any purpose.

3.2 FIT TESTING

A. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training, set up and administered by an individual qualified to do fit testing.

B. Fit types and sizes of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing has been provided.

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

D. 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 288.2.

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED

A. General: After reducing airborne Microbiological levels to the lowest feasible level with engineering controls and work practices, provide respiratory protection as

necessary to ensure that workers are not exposed to an airborne concentration of microbiological organisms.

B. Level of Respiratory Protection: Determine the proper level of respiratory protection by dividing the expected or actual airborne organism count in the work area by the "protection factors" given below. The level of respiratory protection which supplies an airborne concentration inside the respirator, at the breathing zone of the wearer, at or below the specified Permissible Exposure Limits (PEL) set forth in this section is the minimum level of protection allowed.

C. Specific Respiratory Protection Requirements: Provide respiratory protection as indicated below as a minimum requirement:

1. Full-Face, Negative Pressure, Air-Purifying Respirators: Provide full-face, negative pressure, air-purifying respirators during installation of critical or primary barriers or other activities.

3.5 RESPIRATORY PROTECTION FACTOR

A. Respirator Type	Protection Factor
1. Air-Purifying: Negative pressure respirator High-efficiency filter Full facepiece	50
2. Powered air-purifying respirator Positive pressure respirator High-efficiency filters Full facepiece	
3. Any supplied air respirator Operated in continuous flow mode. Full facepiece	100

3.6 AIR -PURI F YING RESPIRATORS

A. Negative pressure full-face mask: Supply a sufficient quantity of respirator filters approved for Microbiological organisms, 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 Microbiological prior to their use.

B. Powered air-purifying full-face mask: Supply a sufficient quantity of high efficiency respirator filters approved for Microbiological organisms so that workers can change filters at any time that flow through the facepiece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during clean room cleaning. Require entire

exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords be washed each time a worker leaves the work area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

END OF SECTION - 01562

SECTION 01563 - DECONTAMINATION UNITS

PART I -GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division I specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. 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.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Refer to Section 01503 Temporary Facilities - Microbiological abatement for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

1.4 SUBMITTALS

A. Before the start of work, submit the following to the designer for review. Do not begin work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

1. Personnel Decontamination Unit: Provide shop drawing showing location and assembly of personnel decontamination units.

2. Equipment Decontamination Unit: Provide shop drawing showing location and assembly of equipment decontamination units.

3. Elastomeric Membrane: Provide product data.

4. Lumber: Provide product data on fire resistance treatment.

5. Signs: Submit samples of signs to be used.

PART 2-PRODUCTS

2.1 MATERIALS

A. Polyethylene Sheet: 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 (0.15 mm) thick, frosted or black as indicated.

B. Duct Tape: Provide duct tape in 2 in. or 3 in. (51 mm or 76 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

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

D. Elastomeric Membrane: Provide uniform flat sheets of flexible sheet roofing material fabricated from EPDM (ethylene propylene diene monomers) or Neoprene (polychloroprene), in a nominal 45 mil (1.14 mm) thickness.

E. Lumber: Provide kiln-dried lumber of any grade or species.

PART 3 - EXECUTION

3.1 PERSONNEL DECONTAMINATION UNIT

A. Provide a personnel decontamination unit consisting of a serial arrangement of connected rooms or spaces, changing room, clean room, equipment room. 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. Provide temporary lighting within decontamination units as necessary to reach a lighting level of I00 ft candles (I076 lumens/sq. meter).

B. Changing Room: Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.

1. Construct using polyethylene sheeting, at least 6 mil (0.15 mm) in thickness, to provide an airtight seal between the changing room and the rest of the building.

2. Locate so that access to work area from changing room is through clean room.

3. Separate changing room from the building by a sheet plastic flapped doorway.

4. Require workers to remove all street clothes in this room, dress in two pairs of clean, disposable coveralls, and don respiratory protection equipment. Do not allow Microbiological-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 clean room.

5. An existing room may be utilized as the changing room if it is suitably located and of a configuration whereby workers may enter the changing room directly from the clean room. Protect all surfaces of room with sheet plastic as set forth in Section O1526 Temporary Enclosures. Authorization for this must be obtained from the designer in writing prior to start of construction.

6. Maintain floor of changing room dry and clean at all times.

7. Damp wipe all surfaces twice after each shift change with a disinfectant solution.

8. Provide posted information for all emergency phone numbers and procedures.

9. Provide one storage locker per employee.

l0. Provide all other components indicated on the contract drawings.

C. Airlock: Provide an airlock between clean room and changing room. This is a transit area for workers.

1. Separate this room from clean room and changing room by sheet plastic flapped doorways.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate this room from the clean and changing rooms with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

D. Clean Room: Provide a clean room as an airlock and a place for workers to remove their second suit.

1. Construct room by providing an area of adequate size to remove the second suit.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene

3. Separate this room from the changing room and clean room with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

4. Separate from changing room by a sheet plastic flapped doorway.

5. Provide a continuously adequate supply of disposable bath towels.

6. Provide a rigid, tight-sealing, hinged door between clean room and change room. Arrange so that there is a sensible movement of air from clean room through breathing zone of worker in change and clean room toward equipment room.

E. Airlock: Provide an airlock between clean room and equipment room. This is a transit area for workers. Separate this room from equipment room by a sheet plastic flap doorway.

1. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

2. Separate this room from the equipment room and clean room with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate from equipment room by a sheet plastic flapped doorway.

F. 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.

1. Separate this room from the work area by a 6 mil (0.15 mm) polyethylene flapped doorway.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate this room from the clean room and work area with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

4. Provide a drop cloth layer of sheet plastic on floor in the equipment room for every shift change expected. Roll drop cloth layer of plastic from equipment room into work area after each shift change. Replace before next shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

G. Airlock: Provide an airlock between equipment room and work area. This is a transit area for workers.

1. Separate this room from equipment room and work area by sheet plastic flapped doorways.

2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

3. Separate this room from the equipment room and work area with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

H. Work Area: Separate work area from the equipment room by polyethylene barriers. If the airborne Microbiological level in the work area is expected to be high, as in dry removal, add an intermediate cleaning space between the equipment room and the work area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6 mil (0.15 mm) polyethylene per shift change and remove contaminated layer after each shift.

I. Decontamination Sequence: Require that all workers adhere to the following sequence when entering or leaving the work area.

1. Entering Work Area: Worker enters changing room and removes street clothing, puts on two pairs clean disposable overalls and respirator, and passes into the equipment room.

2. Any additional clothing and equipment left in equipment room needed by the worker are put on in the equipment room.

3. Worker proceeds to work area.

J. Exiting Work Area:

1. Before leaving the work area, require the worker to remove all gross contamination and debris from overalls and feet.

2. The worker then proceeds to the equipment room and removes first or outer pair of coveralls. Respiratory protection equipment remains in place.

3. Extra work clothing such as boots, hard hats, goggles, and gloves are to be stored in contaminated end of the equipment room.

4. Disposable coveralls are placed in a bag for disposal with other material.

5. Require that decontamination procedures found in Section 01560 be followed by all individuals leaving the work area.

3.2 EQUIPMENT DECONTAMINATIONUNIT

A. Provide an equipment decontamination unit consisting of a serial arrangement of rooms, clean room, holding room, and decontamination room for removal of equipment and material from work area. Do not allow personnel to enter or exit work area through equipment decontamination unit.

B. Arrange with airlocks between rooms as required below.

C. Airlock: Provide an airlock between decontamination room and holding room. This is a transit area.

1. Separate this room from adjacent spaces by a sheet plastic flapped doorway.

2. Separate this room from the rest of the building and adjacent spaces with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

D. Holding Room: Provide holding room as a drop location for bagged microbiological-containing materials passed from the decontamination room. Construct holding room of nominal 2 in. x 4 in. (51 x I02 mm) wood framing and polyethylene sheeting, at least 6 mil (0.15 mm) in thickness and located so that bagged materials cannot be passed from the decontamination room through the holding room to the clean room.

1. Separate this room from the adjacent rooms by flapped doors fabricated from 1/16 in. (1.59 mm) +/- thick single-ply elastomeric membrane material either EPDM or Neoprene.

2. Separate this room from the adjacent rooms by flap doors fabricated from 6 mil (0.15 mm) sheet plastic.

E. Airlock: Provide an airlock between holding room and clean room. This is a transit area.

1. Separate this room from adjacent spaces by a sheet plastic flap doorway.

2. Separate this room from the rest of the building and adjacent spaces with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.

F. Clean Room: Provide clean room to isolate the holding room from the building exterior. If possible, locate to provide direct access to the holding room from the building exterior.

1. Erect critical and primary barriers as described in Section O1526 "Temporary Enclosures" in an existing space. If no space exists, construct clean room of 2 x 4 (51 mm x 102 mm) wood framing and polyethylene sheeting, at least 6 mil (0.15 mm) in thickness.

2. Separate this room from the exterior by a single flap door of 6 mil (0.15 mm) polyethylene sheeting.

3. Load-Out Area: The load-out area is the transfer area from the building to a truck or dumpster. It may be the clean room of the equipment decontamination unit or a separate room or loading dock area. Erect critical and primary barriers as described in Section O1526 "Temporary Enclosures" in load-out area.

4. During transfer of material from load-out area, erect primary barriers as described in Section 01526 "Temporary Enclosures" as necessary to seal path from load-out area to truck or dumpster.

G. Decontamination Sequence: Take all equipment or material from the work area through the equipment decontamination unit according to the following procedure:

1. When passing equipment or containers into the washroom, close all doorways of the equipment decontamination unit, other than the doorway between the wash down station and the washroom. Keep all outside personnel clear of the equipment decontamination unit.

2. When cleaning is complete pass items into holding room. Close all doorways, except the doorway between the holding room and the clean room.

3. Workers from the building exterior enter holding area and remove decontaminated equipment and/or containers for disposal.

4. Require these workers to wear full protective clothing and appropriate respiratory protection.

5. At no time is a worker from an uncontaminated area to enter the enclosure when a removal worker is inside.

3.3 CONSTRUCTION OF THE DECONTAMINATION UNITS

A. Walls and Ceiling: Construct airtight walls and ceiling using polyethylene sheeting, at least 6 mil (0.15 mm) in thickness. Attach to existing building components or a temporary framework.

B. Floors: Use two layers (minimum) of 6 mil (0.15 mm) polyethylene sheeting to cover floors in all areas of the decontamination units. Use only clear plastic to cover floors.

C. Flap Doors: Fabricated from three overlapping sheets with openings a minimum of 3 ft (3') (0.91 meters) wide. Configure so that sheeting overlaps adjacent surfaces. Weights at bottom of sheets 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 6 ft (6') (1.22 meters) between entrance and ex.it of any room. Provide a minimum of 3 ft (3') (0.91 meters) between doors to airlocks.

D. If the decontamination area is located within an area containing microbiological on overhead ceilings, ducts, piping, etc., provide the area with a minimum 1/4 in. (6.4 mm) hardboard or 1/2 in. (12.7 mm) plywood "ceiling" with polyethylene sheeting, atleast 6 mil (0.15 mm) in thickness covering the top of the "ceiling."

E. 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 6 mil (0.15 mm) 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 in. (6.4 mm) thick hardboard or 1/2 in. (12.7 mm) plywood. Where the solid barrier is provided, sheeting need not be opaque.

F. Electrical: Provide sub panel at changing room to accommodate all removal equipment. Power the sub panel directly from a building electrical panel.

1. Connect all electrical branch circuits in decontamination unit to a ground-fault circuit protection device.

3.4 CLEANING OF DECONTAMINATION UNITS

A. Clean debris and residue from inside of decontamination units on a daily basis or as otherwise indicated on contract drawings. Damp wipe or hose down all surfaces after each shift change.

B. If the changing room of the personnel decontamination unit becomes contaminated with microbiological-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.

3.5 SIGNS

A. Post an approximately 20 in. x 14 in. (508 mm x 356 mm) manufactured caution sign at each entrance to the work area displaying the following legend with letter sizes and styles of a visibility required for ease of reading at 20 feet:

l. Provide signs in English

1. Legend:

DANGER
MICROBIOLOGICAL HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

2. Provide spacing between respective lines at least equal to the height of the respective upper line.

B. Post an approximately 10 in. by 14 in. (254 mm x 356 mm) manufactured sign at each entrance to each work area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

1. Provide signs in both English and Spanish.

2.

Legend	Notation
NO FOOD, BEVERAGES OR TOBACCO PERMITTED	3/4 in. (19 mm) Block
ALL PERSO S SHALL DON PROTECTIVE CLOTHI G (COVERINGS) BEFORE ENTERING THE WORK AREA	3/4 in. (19 mm) Block

END OF SECTION • O1563

SECTION 01711 - PROJECT DECONTAMINATION

PART I -GENERAL

1.1 SUMMARY

A. Work of this section includes the decontamination of air in the work area which has been, or may have been, contaminated by the elevated airborne microbiological organism levels generated during abatement activities, or which may previously have had elevated organism levels due to microbiological-containing materials (MCM) in the space.

B. Work of this section includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:

1. Primary and critical barriers erected by work of Section O1526.

2. Decontamination unit erected by work of Section 01563.

3. Pressure-differential system installed by work of Section O1513.

C. Work of this section includes the cleaning, and decontamination of all surfaces (ceiling, walls, floor) of the work area, and all furniture or equipment in the work area.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including general and supplementary conditions and other Division I specification sections, apply to work of this section.

1.3 DESCRIPTION OF REQUIREMENTS

A. General: Decontamination of the work area following microbiological abatement.

B. If the microbiological abatement work is on undamaged materials, the decontamination procedure is a two-step procedure with two cleanings of the primary barrier plastic to remove contamination, thus preventing contamination of the building when the work area isolation barriers are removed.

C. In both cases, operation of the pressure-differential system is used to remove airborne organisms generated by the abatement work.

1.4 RELATED WORK SPECIFIED ELSEWHERE

A. Removal of gross debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:

I. Section 02081 Removal of Microbiological-Containing Materials.

1.5 CLEARANCE AIR SAMPLING BY THE OWNER

A. To determine if the elevated airborne microbiological fungal organism concentration encountered during abatement operations has been reduced to the specified level, the owner will secure samples and analyze them according to the following procedures.

Non-viable microbiological spore and viable microbiological fungal samples will be secured as indicated below. Both types of samples will be transmitted to the analytical laboratory. If the area meets the clearance criteria by non-viable microbiological spore, the viable microbiological fungal analysis will proceed.

Work Area Clearance: Upon meeting the viable microbiological fungal analysis clearance requirements, the work of Section 017I I Project Decontamination can continue.

1.6 SAMPLING BY THE OWNER

A. All air samples will be taken using NIOSH/OSHA sampling techniques as follows:

I. Air samples will be collected in areas subject to normal air circulation away from room comers, obstructed locations, and sites near windows, doors, or vents.

2. After air-sampling pumps have been shut off, fans will be shut off.

3. **Tn** work areas where a dirt floor or exposed fibrous glass insulation is in the space, but outside the work area, maintain a critical barrier to prevent disturbance of these surfaces during aggressive sampling.

1.7 SCHEDULE OF CLEARANCE AIR SAMPLES BY OWNER

A. Final clearance sampling will be conducted as follows:

1. Non-viable microbiological spore Air-O-Cell cassettes.

2. If requested by the owner viable microbiological fungal sampling utilizing agar plates with Rose Bengal Agar (RBA) and an Anderson N-6 type sampler.

B. Number and Volume of Samples: The number and volume of air samples given in the schedules is approximate. The exact number and volume of samples collected by the owner may vary depending upon job conditions and the analytical method used.

C. Sampling sensitivity.

1. Viable microbiological fungal sampling: Based on a limit of detection (LOD) of 10 colony forming units (CFU) per cubic meter of air (CFU/M^3) and a 95 percent confidence limit, a sample volume of sufficient size (i.e. 28.32 Liters) that a single sample indicates compliance with the limit values given below. A sample must be at or below the ambient outdoor levels to indicate that it is at or below the limit value. Note: This is different from quantifying a concentration, which is a stricter requirement and would need a larger sample volume.

a. Clearance samples - a limit value of less than the ambient outdoor levels.

2. Non-viable microbiological spore sampling: Analytical sensitivity

D. Release Criteria: Decontamination of the work site is complete if either of the following two sets of conditions are met:

1. Work area samples are below ambient background levels.

a. All work area sample volumes are greater than 1,142 liters for a viable microbiological fungal sampling utilizing an Anderson N-6.

2. Work area samples are not statistically different from outside samples.

a. All sample volumes except for blanks are greater than 150 liters for a sample.

PART 3 - EXECUTION

3.1 START OF WORK

A. Previous Work: During completion of the microbiological abatement work specified in other sections, the secondary barrier of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the microbiological abatement work.

B. Visual Inspection: Perform visual inspections of the work area along with the project administrator at each step of the decontamination process.

I. Follow inspection procedures in established by designer.

2. Follow inspection procedures in the American Society for Testing and Material (ASTM) standard for visual inspections, ASTM El 368.

C. Start of Work: Work of this section begins with the cleaning of the primary barrier. At start of work, the following will be in place:

1. Primary Barrier: Two layers of polyethylene sheeting on floor and one layer on walls.

2. Critical Barrier: An airtight barrier between the work area and other portions of the building or the outside.

3. Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.

4. Decontamination Units: For personnel and equipment in operating condition.

5. Pressure-Differential System: In operation.

3.2 FIRST CLEANING

A. 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 Air (HEPA) filtered vacuum. (Note: A HEPA vacuum may fail if used with wet material.) 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.

1. Remove all filters in air handling system(s) and dispose of Microbiological-containing waste in accordance with requirements of Section 02084 Disposal of Regulated Microbiological-Containing Material.

2. After the surfaces have passed a visual inspection verifying that all debris and residue has been removed from the sheet plastic, allow a waiting period that is long enough for the HEPA-filtered fan units operating in the work area to provide 96 air changes to clean air of airborne Microbiological organisms. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure-differential system in operation for the entire 96 air change period.

3.3 FINAL CLEANING

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

B. Contractor's Testing: At the completion of the above cleaning, visually inspect all surfaces. Reclean if any dust, debris, etc. is found. At completion of this inspection, sweep entire work area including walls, ceilings, ledges, floors, and other surfaces in the work area with exhaust from forced-air equipment (leaf blower with approximately one horsepower electric motor or equivalent). Do not direct forced-air equipment at any seal in any critical barrier. If any debris or dust is found, repeat the final cleaning. Continue this process until no debris, dust, or other material is found while sweeping of all surfaces with forced-air equipment.

C. After a visual inspection, again wait for a period of time long enough for the HEPA-filtered fan units operating in the work area to provide 96 air changes to allow HEPA-filtered fan units to clean air of airborne Microbiological organisms. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure differential system in operation for the entire 96 air change period.

3.4 VISUAL INSPECTION

A. After final cleaning, perform a complete visual inspection of the entire work area including: all surfaces, ceiling, walls, floor, decontamination unit, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings; look for debris from any source, residue on surfaces, dust or other matter. During visual inspection, sweep entire work area including walls, ceilings, ledges, floors, and other surfaces in the room with exhaust from forced-air equipment (leaf blower with

approximately one horsepower electric motor or equivalent). If any debris, residue, dust, or other matter is found, repeat final cleaning and continue decontamination

procedure from that point. When the area is visually clean, and if after sweeping of all surfaces with leaf blower, no debris, residue, dust, or other material is found, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing on the certification by project administrator.

B. Temporary Lighting: Provide a minimum of 100 ft candles (1075 Lumens/sq. meter) of lighting on all surfaces in the areas to be subjected to visual inspection. Provide hand-held lights providing 150 ft candles (1600 lumens/sq. meter) at 4 ft (1.25 meter) capable of reaching all locations in work area.

C. Lifts: Provide ladders, scaffolding, and lifts as required for access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

3.5 CLEARANCE AIR SAMPLING BY OWNER

A. Non-Viable Microbiological Fungal Sampling (NVFS): After the work area is found to be visually clean, air samples will be taken and analyzed by the owner in accordance with the procedure for NVFS set forth in Part I of this section.

I. If release criteria are not met, repeat final cleaning and continue decontamination procedure from that point.

2. If release criteria are met, the owner will continue with the clearance air testing by VMFS if requested.

B. Viable Microbiological Fungal Sampling (VMFS): After the work area is found to be visually clean and NVMFS air sampling completed, VMFS air samples will be collected and analyzed by the owner in accordance with the procedure for VMFS set forth in Part I of this section.

1. If release criteria are not met, repeat final cleaning and continue decontamination procedure from that point.

2. If release criteria are met, remove work area isolation in accordance with requirements of this section.

3.6 FINAL AIR SAMPLING BY OWNER (NVMFS)

A. Work Area Size Limitation: NVMFS without VMFS sampling will be used to clear work areas where the MCM involved in the work are less than or equal to 160 sq. ft (15 sq. meters), or 260 linear ft (80 linear meters) or where the designer grants permission.

B. Non-Viable Microbiological Fungal Sampling (NVMFS): After the work area is found to be visually clean, air samples will be taken and analyzed by the owner in accordance with the procedure for set forth in Part 1 of this section.

1. If release criteria are not met, repeat final cleaning and continue decontamination procedure from that point.

2. If release criteria are met, proceed to work of this section on removal of work area isolation.

3.7 REMOVAL OF WORK AREA ISOLATION

A. After all requirements of this section and Section 017 l4 Work Area Clearance have been met:

1. Shut down and remove the pressure-differential system. Seal HEPA-filtered fan units, HEPA vacuums, and similar equipment with 6 mil (0.15 mm) polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area.

2. Remove personnel decontamination unit.

3. Remove the critical barriers separating the work area from the rest of the building. Remove any small quantities of residual material found upon removal of the plastic sheeting with wet wiping, HEPA-filtered vacuum cleaners, and local area protection. If significant quantities, as determined by the designer, are found, then the entire area affected shall be decontaminated as specified in Section 01712 Cleaning & Decontamination Procedures.

4. Remove all equipment, materials, and debris from the work site.

5. Dispose of all Microbiological-containing waste material as specified in Section 02084 Disposal of Regulated Microbiological-Containing Material.

3.8 SUBSTANTIAL COMPLETION OF ABATEMENT WORK

A. Microbiological abatement work is substantially complete upon meeting the requirements of this section including submission of:

1. Certificate of Visual Inspection.

2. Receipts documenting proper disposal as required by Section 02084 Disposal of Regulated Microbiological-Containing Material.

3. Punch list detailing repairs to be made and incomplete items.

3.9 CERTIFICATE OF VISUAL INSPECTION

A. Following this section is a "Certificate of Visual Inspection." This certification is to be completed by the contractor and certified by the project administrator. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

END OF SECTION - 01711

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section O1711 "Project Decontamination," the contractor hereby certifies that he 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)

PROJECT ADMINISTRATOR CERTIFICATION

The project administrator hereby certifies that he has accompanied the contractor on the contractor's visual inspection and verifies that this inspection has been thorough and to the best of their knowledge and belief, and that, the contractor's certification above is a true and honest one.

By: (Signature) Date

(Print Name)

(Print Title)

SECTION 01712 - CLEANING AND DECONTAMINATION PROCEDURES

PART I -GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and other Division J specification sections, apply to work of this section.

1.2 DESCRIPTION OF THE WORK

A. The extent of cleaning and decontamination work is shown on the drawings.

B. The work includes the removal of Microbiological-containing debris-
The work includes:

1. Removal and disposal of visible debris.

2. Decontamination of carpeting in the area of the debris and for 10 ft (3.05 in) beyond any visible debris.

3. Removal, cleaning, and reselling of books within the above area.

C. The work includes decontamination of the areas indicated in the "Schedule of Decontamination Work" found at the end of this section.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Work Area Clearance: Specified in Section O1714 Work Area Clearance.

PART 3 - EXECUTION

3.1 GENERAL

A. Complete the following before stan of work of this section:

1. 01527 Regulated Areas.

2. 0I562 Respiratory Protection.

3.2 WET CLEANING

A. Accomplish wet cleaning during decontamination with paper towels or disposable rags.

B. Immerse paper towel or rag in container of amended water or dilute removal encapsulant.

C. Wring out.

D. Fold into quarters.

E. Wipe surface once and refold to a fresh face of cloth. Proceed in this manner until all available faces of paper towel or rag have been used.

F. Dispose of paper towel or rag.

G. Do not place rag back in container to rinse out or for any other purpose. If a used towel or rag comes in contact with water, empty container and refill.

H. Material adhered to a surface with removal encapsulant may require the application of additional removal encapsulant to facilitate cleaning.

3.3 REMOVAL OF MICROBIOLOGICAL-CONTAINING DEBRIS

A. Work of this section is limited to the cleanup of a small quantity of amassed debris, which has fallen from an architectural finish, fireproofing, or thermal insulation on pipes, boilers, and other equipment.

B. Remove Micro biological-containing debris and decontaminate the area involved using the following sequence:

I. Shut down all ventilation into room.

2. Seal entry to work area with 6 mil (0.15 mm) polyethylene. Slit polyethylene for entry. Install a flap to cover the slit automatically; tape slit closed after entry.

3. Start HEPA vacuum before entering the area.

4. Use the HEPA vacuum to clean a path at least 6 ft (1.83 in) wide from the entry point of the work area to the site of the fallen material.

5. Remove all small debris with the HEPA vacuum.

6. HEPA vacuum surfaces of all pieces too large to be removed by the suction of the HEPA vacuum.

7. Pick up such pieces and place in the bottom of a 6 mil (0.15 mm) polyethylene disposal bag conforming to the requirements of Section 02084 Disposal of Regulated Microbiological-Containing Material. Place pieces in the bag without dropping and avoiding unnecessary disturbance and release of material.

8. Remove all remaining visible debris with HEPA vacuum.

9. HEPA vacuum an area 3 ft (0.91 m) beyond the location in which any visible debris was found in two directions each at right angles to the other.

10. Place a 6 mil (0.15 mm) polyethylene drop cloth in accordance with Section 01527 Local Area Protection immediately on top of the HEPA vacuumed area before performing any repair work on site from which fall-out occurred.

11. EPA vacuum the site from which material fell removing all loose material which can be removed by the vacuums suction.

12. Repair or remove remaining material.

13. HEPA vacuum ladder and/or any tools used and pass out of the work area.

C. HEPA vacuum all surfaces in the room starting at the top of wall and working downward to the floor. Then start at comer of floor farthest from work area entrance and work towards entrance.

1. HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16 in. (1.6 mm) of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one-half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.

D. Secure area from occupancy until air-monitoring results per Section 01714 Project Decontamination indicate that area is safe for re-occupancy.

3.4 CLEANING AND DECONTAMINATING OBJECTS

A. Perform all work of decontaminating objects wherever possible on a plastic drop sheet installed in conformance with Section 0I527.

B. HEPA vacuum all surfaces of object and immediate area before moving the object.

C. Pick up object, if possible, and HEPA vacuum all surfaces.

D. Hand to off-sheet worker who will wet clean object, if possible, and place in storage location.

E. Decontaminate area where object was located by HEPA vacuuming twice in two perpendicular directions. Wet clean if necessary to remove any debris.

F. Return object to its original location.

3.5 DECONTAMINATION OF ROOMS

A. Shut down all ventilation into space.

B. Seal entry to work area with 6 mil (0.15 mm) polyethylene. Slit polyethylene for entry. Install a flap to cover the slit automatically; tape slit closed after entry.

C. Install differential pressure system in accordance with Section 01513.

D. Recirculate HEPA-filtered fan units in space by operating them so that discharge from machine is back into room. Use one HEPA-filtered fan unit for each 2,500 cubic ft (70.8 cubic meters) of room volume.

E. HEPA vacuum all surfaces in the room starting at the ceiling, then top of wall and working downward to the floor.

F. HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16 in. (1.6 mm) of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.

G. Operate HEPA-filtered fan unit in space for 96 air changes minimum.

H. Secure area from occupancy until air-monitoring results per Section O1714 Work Area Clearance indicate area is safe for re-occupancy.

END OF SECTION - 01712

DIVISION 2

SITE **WORK**

SECTION 02061 - BUILDING COMPONENT DEMOLITION - MICROBIOLOGICAL ABATEMENT

PART I - GENERAL

I.I RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and Division I specification sections, apply to work of this section.

1.2 DESCRIPTION OF THE WORK

A. The work of this section includes the demolition of buildings and installations where Microbiological -containing materials are present.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Work to be completed prior to start of the work of this section is set forth in the following sections:

I. 01560 Worker Protection -Microbiological abatement.

2. 01562 Respiratory Protection.

3. 01563 Decontamination Units.

B. Section 02084 Disposal of Regulated Microbiological-Containing Material describes the handling and disposal of Microbiological-containing waste.

C. Section 02086 Hazardous Waste Management describes the management and disposal of hazardous waste such as PCB ballasts, fluorescent light tubes, and mercury-containing thermostats encountered during the work of this section.

1.4 SUBMITTALS

A. Before Start of Work: Submit the following to the designer for review. Do not start work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use.

B. Before start of work, submit the following to the designer for review. Do not begin work until these submittals are returned with the designer's action stamp indicating that the submittal has been "Received - Not Reviewed."

1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for the chemical compounds utilized on the site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Wetting Materials: For wetting prior to disturbance of MCM, use amended water encapsulant.

B. Polyethylene Sheet: Provide flame-resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 70 I, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil (0.15 mm) thick, frosted, or black as indicated.

C. Duct Tape: Provide duct tape in 2 in. or 3 in. (51 mm or 76 mm) or larger widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

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

PART 3 - EXECUTION

3.1 WORKER PROTECTION

A. Before beginning work with any material for which a Material Safety Data Sheet has been submitted, provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.2 REMOVAL OF ARCHITECTURAL FINISHES, AND INSULATION

A. Isolate work area from the building exterior and other portions of the building. Where existing walls, doors, windows, or other such closure is missing, seal openings with polyethylene sheet at least 6 mil (0.15 mm) in thickness, mechanically fastened in place and sealed with duct tape or spray glue. Seal broken windows or other openings to the building exterior with nylon-reinforced plastic.

B. Drop Clot h: At the contractor's option, a drop cloth consisting of clear 6 mil (0.1S mm) sheet plastic may be installed in any area where Microbiological removal work is to be carried out.

C. Drop Cloth: Install a drop cloth consisting of clear 6 mil (0.15 mm) sheet plastic in any area where Microbiological removal work is to be carried out.

D. Adequately wet MCM to be removed prior to stripping and/or tooling to reduce organism dispersal into the air. Accomplish wetting by a fine spray (mist) of water, amended water. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water, to penetrate material thoroughly. If water or 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 instructions. Perforate outer covering of any installation which has been painted and/or jacketed in order to allow penetration of water, amended water or removal encapsulant, or where necessary, carefully strip

away while simultaneously wetting the installation to minimize dispersal of Microbiological organisms into the air.

E. At Completion of Removal Work: Clean all surfaces in the removal area by wet wiping, HEPA vacuuming, or washing down with hoses. Clean from top down. Collect any water runoff and filter through a dual filtration system. Provide first filter that removes organisms 10 microns and larger, and a final filter that removes all organisms 5 microns and larger.

F. Visual Inspection: Visually inspect work area for debris. If any visible debris is noted, clean all surfaces in the work area again. Continue this procedure until no visible debris is found in the work area.

G. Final Air Testing: If the work area is to remain unoccupied prior to demolition or be occupied only by workers wearing the proper respiratory protection, then final air testing is unnecessary. If the area is to be occupied prior to demolition, clear the work area in accordance with requirements of Section O1711 Project Decontamination.

3.3 HAZARDOUS WASTE MANAGEMENT AND DISPOSAL

A. Manage and dispose of hazardous waste such as PCB ballasts, fluorescent light tubes, and mercury thermostats in accordance with the requirements of Section 02086 - Hazardous Waste Management.

B. Do not mix potentially hazardous waste streams. Where feasible, separate each type of hazardous waste from other types of hazardous wastes, from Microbiological waste and from construction waste.

C. Segregate, package, label, transport, and dispose of hazardous waste in accordance with DOT, EPA, state, and local regulations.

3.4 DISPOSAL OF WASTE

A. Pack all Microbiological-containing or contaminated waste material in bags marked as required by Section 02084 Disposal of Regulated Microbiological-Containing Material.

3.5 REMOVAL OF COMPLETE SYSTEMS

A. Before Starting Work of This Section: Complete the work set forth in the following specification sections:

1. Section O1527 Local Area Protection.

2. Section O1562 Respiratory Protection.

B. Completely seal all components to be removed in 6 mil (0.15 mm) polyethylene sheet sealed with duct tape. Candy stripe surface of plastic as reinforcement. Wrap large items such as boilers, tanks, and converters with nylon reinforced sheet plastic.

Install sheet plastic to allow cutting of components into sections where this is necessary for the work.

C. Remove MCM where necessary to allow the cutting components into sections using the procedures set forth in Section O1529 "Mini-Enclosures" of these specifications.

D. Remove components in largest sections possible.

END OF SECTION - 02061

SECTION 02063 - REMOVAL OF MICROBIOLOGICALCONTAMINATED MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and Division I specification sections, apply to work of this section.

1.2 SUMMARY OF WORK

A. Work of this section includes removal and disposal of all non-Microbiological-containing material including but not limited to:

1. Ceiling system and supports.

2. Removal of all carpeting from within the work area.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Unlabeled Clear Bags: Provide clear 6 mil (0.1S mm) thick, leak-tight polyethylene bags with no label.

B. Disposal Bags: Provide disposal bags as described in Section 02084 "Disposal of Regulated Microbiological-Containing Material."

PART 3- EXECUTION

3.1 SEQUENCE

A. Before beginning work of this section comply with:

I. 01503 Temporary Facilities - Microbiological Abatement.

2. 0 IS13 Temporary Pressure-Differential and Air Circulation System.

3. 01563 Decontamination Units.

4. 01526 Temporary Enclosures.

5. 01560 Worker Protection - Microbiological Abatement.

6. 01562 Respiratory Protection.

7. 01527 - Regulated Areas.

8. 01529 - Mini-Enclosures.

9. Section O1562 - Respiratory Protection.

3.2 CEILING SYSTEM

A. on-Microbiological Contaminated Ceiling Tiles: Remove sufficient ceiling tiles to gain access to top of ceiling system. Mist top of tiles with amended water. Wet sufficiently to soak debris thoroughly , but not cause dripping. Remove ceiling tiles and carry to wash down station. Wash ceiling tiles in wash down station. Bag washed tiles in unlabeled clear 6 mil (0.15 mm) bags. Dispose of tiles as non-Microbiological waste.

1. Bag debris from washed off tiles in properly labeled Microbiological disposal bags. Dispose of debris as Microbiological-containing waste as set forth in Section 02084 Disposal of Regulated Microbiological-Containing Material.

B. Support System: Remove hangers, tracks, T-bars, etc. Decontaminate in wash down station. Wrap in clear 6 mil (0.15 mm) sheet plastic. Dispose of as non-Microbiological waste.

3.3 CARPETING

A. Deface carpeting with a contrasting spray paint before the work. Coat lightly enough that wetting will not be retarded.

B. Thoroughly wet Microbiological-contaminated carpeting to be removed to reduce organism dispersal into the air. Wet carpet prior to cutting, rolling, or any other activity that could disturb dust in or under the carpet. Accomplish wetting by a fine spray (mist) of amended water or encapsulant. Saturate material completely without causing excess dripping. Allow time for water or encapsulant to penetrate material thoroughly. Spray material repeatedly during the work process to maintain a continuously wet condition. Spray amended water or encapsulant on carpeting during cutting or rolling to minimize dispersal of Microbiological organisms into the air.

C. Cut seams in the carpeting and roll up into rolls of carpeting that are no wider than factory width of carpeting. Roll or fold padding as necessary. Remove dust and debris from floor after removal of carpeting and padding by HEPA vacuuming followed by wet wiping.

I. Wrap the rolled carpeting in two layers of 6 mil sheet plastic. Label and dispose of in accordance with requirements of specification section on "Disposal of Regulated Microbiological-Containing Waste."

2. Dispose of rolled carpeting as normal construction debris.

D. Cut carpeting into 3 ft wide strips. Cut strips into short enough lengths to fit in Microbiological disposal bags when rolled up. As carpeting and padding is removed, simultaneously pack material while still wet into disposal bags, 6 mil (0.15 mm) minimum thickness. Seal bags, clean outside, and move to wash down station adjacent to material decontamination unit. Remove dust and debris from floor after removal of carpeting and padding by HEPA vacuuming followed by wet wiping.

3.4 AIRBORNE ORGANISM LEVELS

A. Airborne Organism Levels: Maintain airborne organism levels less than the "Stop Action Levels" set forth in Section 01013 "Summary of Work - Microbiological Abatement."

END OF SECTION - 02063

SECTION 02081- REMOVAL OF MICROBIOLOGICAL-CONTAINING MATERIALS

PART 1-GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and Division I specification sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Worker Protection requirements are set forth in Section 01560 Worker Protection Microbiological abatement.

B. Installation of critical and primary barriers and work area isolation procedures are set forth in Section 01526 Temporary Enclosures.

C. Project decontamination procedures after removal of the secondary barrier are specified in Section 01711 Project Decontamination.

D. Disposal of Microbiological-containing waste is specified in Section 02084 Disposal of Regulated Microbiological-Containing Material.

1.3 SUBMITTALS

A. Before Start of Work: Submit the following to the designer for review. Do not start work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use.

B. Before start of work, submit the following to the designer for review. Do not begin work until these submittals are returned with the designer's action stamp indicating that the submittal has been "Received - Not reviewed."

1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for chemicals to be used.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Polyethylene Sheet: 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 (0.15 mm) thick, frosted, or black as indicated.

B. Duct Tape: Provide duct tape in 2 in. or 3 in. (50 mm or 75 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

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

D. Disposal Bags: Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of Regulated Microbiological-Containing Material.

E. Fiberboard Drums: Provide heavy-duty leak-tight fiberboard drums with tight sealing locking metal tops.

F. Paperboard Boxes: Provide heavy-duty corrugated paperboard boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

PART 3 - EXECUTION

3.1 SECONDARY BARRIER

A. Secondary Barrier: Over the primary barrier, install as a drop cloth a clear 6 mil (0.15 mm) sheet plastic in all areas where Microbiological removal work is to be carried out. Completely cover floor with sheet plastic. Where the work is within 10 ft (3 in) of a wall, extend the secondary barrier up wall to ceiling. Support sheet plastic on wall with duct tape, seal top of secondary plastic to primary barrier with duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall support as necessary to support sheet plastic and prevent it's falling during removal operations.

1. Install secondary barrier at the beginning of each work shift. Install only sufficient plastic for work of that shift.

2. Remove secondary bather at end of each work shift or as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags. Keep material on sheet continuously wet until bagged.

3. Install walkways of black 6 mil (0.15 mm) plastic between active removal areas and decontamination units to protect primary layer from tracked material. Install walkways at the beginning of, and remove at the end of, each work shift.

3.2 WORKER PROTECTION

A. Before beginning work with any material for which a Material Safety Data Sheet has been submitted, provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

material repeatedly during the work process to maintain a continuously wet condition.

1. Mist work area continuously with amended water whenever necessary to reduce airborne organism levels.

2. Remove saturated MCM 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 wraps of duct tape. Clean outside and move to wash down station adjacent to material decontamination unit.

3. Evacuate air from disposal bags with a HEPA-filtered vacuum cleaner before sealing.

3.3 HAZARDOUS WASTE MANAGEMENT AND DISPOSAL

A. Manage and dispose of hazardous waste such as PCB ballasts, fluorescent light tubes, and mercury thermostats in accordance with the requirements of Section 02086 - Hazardous Waste Management.

B. Do not mix potentially hazardous waste streams. Where feasible, separate each type of hazardous waste from other types of hazardous wastes, from Microbiological waste, and from construction waste.

C. Segregate, package, label, transport, and dispose of hazardous waste in accordance with DOT, EPA, state, and local regulations.

END OF SECTIO - 02081

SECTION 02084 - DISPOSAL OF MICROBIOLOGICAL-CONTAINING MATERIAL

PART I - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and Division I specification sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Worker protection requirements are set forth in Sections 01560 Worker Protection Microbiological Abatement.

B. Section 01098 Codes, Regulations and Standards - Microbiological Abatement describes applicable federal, state, and local regulations.

1.3 DESCRIPTION OF THE WORK

A. This section describes the disposal of RMCMS. Disposal includes packaging of RMCMS. Disposal may be accomplished by either land filling or converting RMCM to non-Microbiological waste.

1.4 SUBMITTALS

A. Before start of work, submit the following to the designer for review. Do not start work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use.

I. Copy of state or local license for waste hauler.

2. Name and address of landfill where RMCMs are to be buried. Include contact person and telephone number.

3. Name and address of processor where RMCMs are to be processed into non-microbiological waste. Include contact person and telephone number. Also, provide the following information about the process and operation used by the processor:

a. Results of startup performance testing and performance testing for last 90 days, including operating parameters, feed characteristics, and analysis of output materials.

b. Results of composite analysis required during initial 90 days of operation and results of composite analysis of monthly product composite samples for last 90 days.

c. Results of continuous monitoring and logs of process operating parameters for the initial 90 days and last 90 days of operation.

d. A description of any deviation from the operating parameters established during performance testing, the duration of the deviation, and steps taken to correct the deviation.

e. Product data on process to be used.

4. Chain-of-custody form and form of waste manifest proposed.

5. Sample of disposal bag and any added labels to be used.

B. On a weekly basis, submit copies of all manifests and disposal site receipts to designer.

C. Waste Shipment Record: Maintain a waste shipment record as required by the ESHAP regulation which indicates the waste generator, transporter, and disposal site, and which describes the nature, size, type of container, and form of Microbiological waste. Submit to designer within 35 days of departure from building.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Disposal Bags: Provide 6 mil (0.15 mm) thick, leak-tight polyethylene bags labeled with three labels with text as follows:

1. First Label: Provide in accordance with 29 CFR 1910.1200(t) of OSHA's Hazard Communication standard:

DANGER
CONTAINS MICROBIOLOGICAL ORGANISMS
AVOID CREATING DUST
MICROBIOLOGICALORGANISMS ARE HAZARDOUS TO YOUR HEALTH

PART 3 - EXECUTION

3.1 SEQUENCE

A. Comply with the following sections during all phases of this work:

I. Section 01560 Worker Protection - Microbiological Abatement.

2. Section O1562 Respiratory Protection.

3.2 GENERAL

A. All waste is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction.

B. Liquid Waste: Mix all liquid, microbiological-containing waste or Microbiological-contaminated waste with a solid material so that it forms a solid (non-liquid) form, and have the concurrence of the landfill operator prior to disposal.

C. Load all adequately wetted RMCM in disposal bags or leak-tight containers. All materials are to be contained in one of the following:

I. Two 6 mil (0.15 mm) disposal bags: or

2. Two 6 mil (0.15 mm) disposal bags and a fiberboard drum; or

3. Sealed steel drum with no bag.

D. Protect interior of truck or dumpster with critical and primary barriers as described in Section O1526 Temporary Enclosures.

E. Carefully load containerized waste in fully enclosed dumpsters, trucks, or other appropriate vehicles for transport. Exercise care before and during transport to ensure that no unauthorized persons have access to the material.

F. Warning Signs: During loading and unloading, mark dumpsters, receptacles, and vehicles with a sign complying with requirements of the EPA Guidelines in a manner and location that a person can read the following legend:

DANGER
MICROBIOLOGICAL DUST HAZARD
AUTHORIZED PERSONNEL ONLY

G. Do not store containerized materials outside of the work area. Take containers from the work area directly to a sealed truck or dumpster.

H. Do not transport disposal bagged materials on open trucks. Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as RMCM and dispose of in accordance with this specification.

l. Advise the landfill operator or processor, at least ten days in advance of transport, of the quantity of material to be delivered.

J. At disposal site unload containerized waste:

I. At a disposal site, sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for re-bagging. Clean entire truck and contents using procedures set forth in Section O1711 Project Decontamination.

2. At a processing site, truck and loading dock are arranged as a controlled work area and containerized waste is transferred to storage area by site personnel. All bags, including broken ones, will be transferred. Clean truck, using procedures set forth in Section O1711 Project Decontamination.

K. Retain receipts from landfill or processor for materials disposed of.

L. At completion of hauling and disposal of each load, submit copy of waste manifest, chain- of-custody form, and landfill receipt to designer.

END OF SECTION - 02084

SECTION 02086 - HAZARDOUS WASTE MANAGEMENT

PART I - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of contract, including general and supplementary conditions and Division I specification sections, apply to work of this section.

1.2 RELATED SECTIONS

A. Section O I 092 Codes and Regulations - Microbiological Abatement describes federal, state and local regulations applicable to Microbiological.

1.3 DESCRIPTION OF THE WORK

A. This section describes the segregation, packaging, labeling, transport, and disposal of waste materials generated by demolition activities and the subsequent shipment of properly packaged and labeled waste materials to an approved disposal site.

1.4 CODES AND REGULATIONS

A. Genera I Applicability of Codes and Regulations: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes and regulations have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

B. Contractor Responsibility: The contractor shall assume full responsibility and liability for the compliance with all applicable federal, state, and local regulations pertaining to hazardous waste management and disposal. Hold the owner and designer harmless for failure to comply with any applicable work, hauling, disposal, safety, health, or other regulation on the part of the contractor, the contractor 's employees, or subcontractors.

C. Federal requirements which govern the management, hauling, and disposal of hazardous waste include, but are not limited to, the following:

1. DOT: U.S. Department of Transportation, including but not limited to:

a. Hazardous Substances
Title 49, Part 171 and 172 of the Code of Federal Regulations

b. Hazardous Material Regulations
General Awareness and Training Requirements for Handlers, Loaders and Drivers
Title 49, Parts 171-180 of the Code of Federal Regulations

c. Hazardous Material Regulations
Editorial and Technical Revisions
Title 49, Parts 171-180 of the Code of Federal Regulations

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

   a. Management of Hazardous Wastes Resource Conservation and Recovery Act (RCRA)
   Title 40, Parts 260- 268 of the Code of Federal Regulations

D. State requirements which govern *the* management, hauling, and disposal of hazardous waste include, but are not limited to, the following:

E. State requirements abide by all state requirements, which govern the management, hauling, and disposal of hazardous waste.

F. Local requirements which govern the management, hauling, and disposal of hazardous waste include, but are not limited to, the following:

G. Local requirements abide by all local requirements, which govern the management, hauling, and disposal of hazardous waste.

1.5 SUBMITTALS

A. Before Start of Work: Submit the following to the designer for review. Do not start work until these submittals are returned with designer's action stamp indicating that the submittal is returned for unrestricted use.

   I. Copy of state and local licenses for waste hauler.

   2. U.S. EPA Identification Number of waste hauler.

   3. Name and address of waste disposal facility where hazardous waste materials are to be disposed including:

      a. Contact person and telephone number.

      b. Copy of state license and permit.

      c. Disposal facility permits.

   4. Specimen copy of Uniform Hazardous Waste Manifest form.

   5. Copy of EPA "Notice of Hazardous Waste Activity" form.

   6. Copy of forms required by state and local agencies.

   7. Sample of disposal label to be used.

B. During work, submit the following as required by the work:

   I. Submit copies of all executed manifests and disposal site receipts to the designer.

PART 2-PRODUCTS

2.1 MATERIALS

A. Disposal Bags: Provide 6 mil (0.15 mm) thick, leak-tight polyethylene bags.

B. DOT Hazardous Waste Disposal Drums: Provide DOT 17-H Open -Top Drums (55 gallon) in accordance with DOT regulations title 49 CFR Parts 173, 178, and 179.

C. DOT Hazardous Waste Labels: 1n accordance with DOT regulations Title 49 CFR parts 173, 178, and 179.

PART 3 - EXECUTION

3.1 GENERAL

A. Do not mix potentially hazardous waste streams. Where feasible, separate each type of hazardous waste from other types of hazardous wastes, from microbiological waste, and from construction waste.

B. Segregate, package, label, transport, and dispose of hazardous waste in accordance with DOT, EPA, state, and local regulations.

3.4 TEMPORARY STORAGE

Partially filled containers of hazardous waste may be stored at the work site for intermittent packaging provided that:

A. Each container is properly labeled when it is first placed in service.

B. Each container remains closed at all times except when compatible waste types are added.

C. When moved from site to site, each container remains within the geographic boundaries of the facility without moving or crossing public access highways.

3.5 REMOVAL OF HAZARDOUS WASTES

Immediately seal containers of hazardous waste as each container is filled. Remove containers of hazardous waste from the work site within seventy-two (72) hours of being filled.

A. Transport filled containers from the work site to an approved disposal site or recycling center.

B. Continuously maintain custody of all hazardous material generated at the work site including security, short-term storage, transportation, and disposition until custody is transferred to an approved disposal site or recycling center. Document continuous chain-of-custody.

C. Do not remove, or cause to be removed, hazardous waste from owner's property without a legally executed Uniform Hazardous Waste Manifest.

D. At completion of hauling and disposal of each load, submit copy of waste manifest, chain-of-custody form, and landfill receipt to designer.

3.6 BACK CHARGES

A. Where contractor fails to fulfill packaging, handling, transport, or disposal requirements as outlined herein, owner will charge back to the contractor all costs associated with insuring that hazardous wastes are segregated, packaged, transported, and disposed of in accordance with all applicable federal and state regulations.

B. Environmental pollution of owner's property or other environments resulting from contractor's hazardous waste management activities will be promptly remediated under owner's direction, to the owner's sole satisfaction, and at the contractor's sole expense.

C. Contractor agrees to either reimburse the owner, or reduce the contract amount by change order to cover all costs associated with waste repackaging, waste desegregation, or pollution remediation efforts.

3.7 REMOVAL OF NON-HAZARDOUS WASTE MATERIALS

A. Transport and legally dispose of non-hazardous waste products, materials, residues, and refuse at a location that is not on owner's property.

B. Non-hazardous waste products, materials, residues, and refuse include, but are not necessarily limited to:

1. Materials which are determined to be non-hazardous wastes through objective sampling in accordance with EPA Document SW-846 and laboratory analysis in accordance with EPA Method 1311.

2. Emptied Hazardous Material Containers: Containers holding a material with constituents listed on the MSDS as hazardous.

a. When a container is emptied of its hazardous contents by pouring or scraping so that less than one inch of material remains in the bottom of the container, the container is considered "empty" and is not in itself a hazardous waste.

b. Emptied hazardous material containers may be disposed of as construction debris waste (i.e., non-hazardous).

3. Personnel protective clothing and safety equipment with de-minimis or trace contamination, as determined by visual inspection by owner's representative.

C. Keep premises in a clean and orderly condition during performance of abatement work.

D. Place non-hazardous construction debris wastes on a daily basis in secure containers for local landfill disposal.

END OF SECTION - 02086

EXHIBIT B

SECTION 4 - GENERAL INSTRUCTIONS; PROPOSAL CONTENT; FORMAT; SUBMISSION

4.1. Due Date and Time: No Proposal shall be considered if it is received by the contact person after the due date and time specified on Page 1 of the Request.

4.1.1. Format: All Proposals must follow the format described in this Exhibit B. Respondents shall provide information requested by this Request in a direct and concise manner. Responses shall refer directly to section numbers in this Request and meet or exceed the requirements as described in this Request.

4.1.2. Guaranteed Proposals: All Proposals must be guaranteed and the Library will not accept conditional or qualified Proposals unless provided otherwise in this Request.

4.1.3. Completion of Forms: All blank spaces in any form document included in the Proposal must be filled in by using a typewriter, indelible ink, or word processor. Where amounts are given in both words and figures, the words will govern if there is a discrepancy between the words and figures. If there is a discrepancy between the total price amount and the sum of the unit prices, the sum of the unit price will govern. The person signing the Proposal must initial any changes or corrections made on the Proposal if changes are made by typewriter or indelible ink after printing.

4.1.4. Authorization to Submit Proposal: A responsible person must sign the Proposal and, in the case of a business entity or firm, represent and warrant that the signer is duly authorized to sign the Proposal on behalf of the Respondent. For Proposals tendered by e-mail, this signature should be scanned and included with the Proposal document.

4.1.5. Acceptance/Rejection: The Library's decision to accept or reject any or all Proposals or portions thereof shall be final.

4.1.6. Clarification of Proposal: Subsequent to receipt of Proposals, the Library may require the Respondents to clarify or explain their Proposals or any part or parts thereof by way of a telephone conference, e-mail, in-person conference, or in writing.

4.1.7. Package Proposals: If a Respondent submits a package Proposal or a Proposal containing multiple parts (e.g., a proposal for custodial services only, for maintenance services only, or for both types of services), the Respondent shall provide an aggregate price for all parts included in the Proposal (e.g., custodial plus maintenance services if the Proposal seeks to provide both services) and individual prices for each part of the Proposal.

4.2. Proposal Content and Format:

4.2.1. Respondent's Information: The Proposal must include:

4.2.1.1. Respondent's name, address, telephone number, e-mail address, and website (if any).

4.2.1.2. Respondent must also specify contact person and his/her name, address, telephone number, mobile number, and e-mail address.

4.2.2. Addressing Specifications (Exhibit A): Respondent must address each Specification contained in Exhibit A. If any part of Respondent's Proposal proposes one or more deviations from the Specifications (Exhibit A), the Respondent must provide sufficient information for each Specification for which a deviation is proposed, a sufficiently clear description of the deviation for the Library to understand what is proposed and an explanation insofar as how the Respondent's proposed deviation is of equal or better quality than the Library's Specification.

4.2.3. Pricing Information: The Proposal must include a price quote. In the event that the aforesaid includes components or discrete parts, the Proposal must include an aggregate price quote as well as pricing for each component or discrete part.

The aggregate price must include costs of transportation, handling charges, set-up charges, cost of warranty, and all other charges. These items must also be itemized.

If the cost of travel is included in the pricing information, the estimated cost for such travel and detailed information used to compute such estimated cost shall be itemized separately. In the event the Respondent anticipates that overnight stays in connection with Proposal, if accepted, will be required, the Library requests that, where reasonable, all persons staying overnight do so at a hotel or motel located within the City of Urbana limits.

All prices must be guaranteed for a period of ninety (90) days.

4.2.4. References: Respondents may be asked to provide references. If requested, the Respondent must provide, for each reference, the business name, address, telephone number, e-mail address, business website, and name of the individual to be contacted.

4.2.5. Amendments to Request: In the event that the Library issues any changes to its Request following the publication or issuance date, as the case may be, listed on Page 1 of this Request, it will do so through one or more addenda which will be sent to those Respondents that have expressed interest in submitting Proposals.

4.2.6. Use of Subcontractors: Respondent will not be permitted to use subcontractors to perform any part of the services sought by the Library without the express written consent of the Library.

4.2.7. Qualifications: The Respondent should provide a summary of the qualifications of each person who the Respondent expects to perform the Services requested in the Request including education, licensure, certifications, and experience with similar work. In the event a Respondent desires to use one or more subcontractors to perform any part of the services sought by the Library, the Respondent must provide the Library with the same information as that which the Respondent is required to provide as herein stated.

4.3. Proposal Submissions by Mail, Hand-Delivery, or Courier Service: If a Proposal will be submitted by mail, hand-delivery, or by courier service, the Proposal shall be submitted in a sealed opaque envelope bearing the following information: Name, address, and phone number of Respondent; Bid name, title, and number; and Proposal opening date and time as specified on Page 1 of the Request. The aforesaid envelope should then be placed in another envelope that is addressed to the contact person designated on Page 1 of the Request.

4.4. Assumption of Risk: Regardless of the means and method by which Respondent uses to send the Proposal, Respondent assumes all risks of errors in sending and delay caused when or

by sending Respondent's Proposal for receipt by the contact person listed on Page 1 of the Request after the date and time specified on Page 1 of the Request. The Library shall have no responsibility should Respondent's Proposal be received after the date and time specified on Page 1 of the Request for the Library's receipt of Proposals.

4.5. <u>Opening Proposals:</u> Proposals will be opened publicly by the Library immediately after the required time and date of submission. The Library reserves the right to reject any or all bids, or any part thereof, or to waive any informalities in any bid, deemed to be for the best interests of the Library.

4.6. <u>Accompanying Information:</u> Each Response shall include the following:

4.6.1. A fully completed Response Form.

4.6.2. Proposed supplies with product data.

4.6.3. Equal Employment Opportunity (EEO) Workforce Statistics Form.

4.6.4. Vendor Representations and Additional Duties (VRAD) Form.

4.6.5. Acknowledgment of Addenda Form.

EXHIBIT C

SECTION 5 - EVALUATION CRITERIA

5.1. **Public Opening of Proposals:** The Library will conduct a public opening of the Proposals at the date, time and location specified on Page 1 of the Request. The public opening will include a reading of each Respondent's name and the respective aggregate prices which the Respondents submitted. No other contents of Respondents' Proposals will be disclosed at this time.

5.2. **Treatment of Proposals:** Until such time as the Library has entered into and executed a Contract with a Respondent or has fully rejected all the Proposals, the Proposals will be subject to Section 7(h) of the Freedom of Information Act. 5 ILCS 140/7(h) governing "proposals and bids for any contract."

5.3. **Evaluation Criteria:** The Library will evaluate the Proposal(s) following the date and time when opened, whether or not such opening occurs in public. The evaluation will be conducted before the Proposals expire and will be based on and but may not be limited to the following criteria:

5.3.1. **Completeness:** Degree of completeness of the Proposal.

5.3.2. **Compliance with/Deviations from Specifications:** Degree of compliance with the Specifications included in Exhibit A. In the event any Specification is not complied with, the Library will consider the Respondent's proposed substitute and whether it is of equal or better quality than the particular Specification.

5.3.3. **Price:** The Library will consider the aggregate price and, if provided, component pricing included in each Proposal.

5.3.4. **Other Criteria**: In addition to the above, the Library may consider the following additional criteria:

5.3.4.1. The experience of the Respondent in performing the services requested in this Request.

5.3.4.2. To the extent the Library has had performance and/or delivery problems or disputes with the Respondent in the past, the Respondent's cooperation in resolving such problems or disputes to the satisfaction of the Library.

5.3.4.3. Completion and approval of the Respondent's EEO Workforce Statistics form.

5.3.4.4. The nature and coverage of the Respondent's guarantees and warranties.

5.3.4.5. References.

5.3.4.7. Professional licenses and certifications.

5.4. **Investigations:** The Library may undertake such investigations and other due diligence regarding Respondent and Respondent's Proposal as it deems necessary and appropriate. Such investigation may include, but is not limited to, contacting any reference supplied by the Respondent or any customer/client known to the Library which has obtained goods, services, labor and/or materials from Respondent similar to those described in this Request. The Library reserves the right to reject any Proposal if the evidence submitted by, or investigation of such Respondent fails to satisfy the Library that Respondent is properly qualified meet the requirements contained in this Request.

5.5. **Default on Obligation to Library:** No Proposal will be considered if the Respondent is in arrears or is in default on any obligation, tax, fee, or fine due and owing to the Library or is in breach of any agreement to which the Library is a party which breach has not been fully cured to the satisfaction of the Library.

EXHIBIT D

SECTION 6 – GENERAL LEGAL MATTERS

6.1. Rights to Proposals and Supporting Materials: All Proposals and related information provided by Respondents shall become the property of the Library when received and shall not be returned to the Respondent. However, in the event any Respondent has a documentable statutory or common law intellectual property right (e.g., patent, copyright, trademark, service mark, etc.) in any part of the Respondent's Proposal or supporting materials which is or are not otherwise in the public domain, the submission of the Respondent's Proposal shall not be deemed or construed as a waiver, release, or transfer to the Library of the Respondent's intellectual property rights.

6.2. Public Records; Confidential Information:

6.2.1. Application for Freedom of Information Act After Award: Following the selection of and the execution of a Contract with the Successful Respondent, if any, all Proposals will be available to the public upon receipt of a valid Freedom of Information Act ("FOIA") (5 ILCS 140/1 et seq.) request and other applicable laws and rules except as provided below.

6.2.2. Confidential Information: A Respondent may not designate an entire proposal as confidential in order to avoid having it produced in response to the Library's receipt of a request for information under the Freedom of Information Act (5 ILCS 140/1 et seq., "FOIA"). If a Respondent believes that it has a lawful basis for designating certain information in the Respondent's Proposal as confidential, proprietary or trade secret, as defined in the Illinois Trade Secrets Act (765 ILCS 1065/1 et seq.), the Respondent must specifically label each page of the Proposal that contains such information with a legend stating: "CONFIDENTIAL INFORMATION." The Respondent must also provide sufficient information to the Library to establish the confidentiality of the information labeled as such since the Library will have no obligation to ascertain whether such information is in fact exempt from production under FOIA. Respondent's request for confidential treatment of information in a Proposal shall not supersede The Library's legal obligations under FOIA.

6.2.3. Confidential Proposals: The Library will neither accept nor consider any Proposal which indicates that it should be treated as confidential, proprietary or as a trade secret in its entirety.

6.2.4. Submission of Confidential Information: If a Respondent requests that a portion of its Proposal be treated as confidential, proprietary or trade secret, the Respondent must submit an additional copy of the Proposal with that information deleted. This copy must state the general nature of the material deleted and shall retain as much of the Proposal as possible.

6.2.5. Costs of Claiming Confidentiality: Each Respondent shall be responsible for any costs which the Library incurs in defending a request for Proposal information which the

Respondent has marked as “CONFIDENTIAL INFORMATION.” In the event that the Library receives a FOIA request which seeks disclosure of that portion of a Proposal which contains information designated as confidential and the Respondent requests the Library to withhold that information from disclosure, the Respondent shall cooperate with the Library to the degree necessary for The Library to assert the appropriate FOIA exemption when responding to the FOIA requester and the Illinois Attorney General’s Office, as the case may be.

6.2.6. Intellectual Property Rights of Others: By submitting a Proposal, the Respondent represents and warrants that anything contained in the Proposal does not violate any intellectual property right (e.g., patent, copyright, trademark, service mark, etc.) owned by any other person.

6.3. Costs of Submitting Proposals: The Respondent shall be responsible for any and all costs and expenses in connection with his/her preparation and submission of his/her Proposal.

6.4. Lawfulness of Submission of Proposal: By submitting his/her Proposal, the Respondent represents and warrants that the Respondent –

6.4.1. No Bid Rigging: Has not engaged in any unlawful bid rigging, price fixing or group boycott with any other Respondent or third person.

6.4.2. No State or Federal Law Violations: Has not violated any state or federal law governing the subject of that which is sought by the Request.

6.4.3. Direct Interest in Contract: Is the only person that will have a direct interest in the Contract, if any is awarded.

6.4.4. No Bribery: Has not made any effort to coerce or bribe any Library employee to award the Contract to the Respondent. Has not undertaken any effort to provide The Library with the Specifications used in this solicitation document.

6.5. Taxes: By law, the Library is exempt from paying federal excise tax, state and local retailers' occupation tax, state and local service occupation tax, use tax, service use tax, and sales tax. The Library's tax-exempt number will be furnished upon the Successful Respondent’s request.

6.6. Authorizations: Within three (3) business days of executing a Contract, if any is to be executed, the Successful Respondent, at its expense, shall provide the Library with all necessary permits, licenses, and certificates required to satisfy the obligations to which the Successful Respondent will be expected to assume by entering into a Contract with the Library. The Successful Respondent shall comply with all requirements of and shall keep in full force and effect all such permits, licenses, and certificates throughout its performance of the Contract.

6.7. Use of Library Name: No Respondent, including the Successful Respondent, if any, shall use the Library's name or logo in any form of advertising without the Library's prior written permission.

6.8. Contract Documents: The Successful Respondent shall be required to enter into a Contract with the Library that may include but may not necessarily be limited to the following:

6.8.1. Successful Respondent-Supplied Contract: If a Respondent, if selected as the Successful Respondent, expects the Library to enter into an agreement using the Respondent's template form of agreement, the Respondent must supply a copy of that agreement form along with his/her Proposal. Nothing herein shall require the Library to accept the terms of such agreement form.

6.8.2. Library-Supplied Contract Form: If a Respondent, if selected as the Successful Respondent, does not intend to ask the Library to use his/her agreement form, the Library shall provide the Successful Respondent with the terms of agreement. The Contract terms may be contained in a wholly separate document and/or those parts of the Library's Request and Successful Respondent's Proposal to which the Library and Successful Respondent agree.

6.8.3. Final Contract Terms: Regardless of whether the Successful Respondent's or the Library's agreement form is to be used, where appropriate, the Successful Respondent and the Library will negotiate in good faith final terms of agreement. Any final Contract entered into by and between the Library and the Successful Respondent shall contain the following:

6.8.3.1. Price Quote: The Successful Respondent's price quoted as contained in his/her Proposal or as further negotiated by and between the Respondent and The Library which, in all events, shall include the all costs of delivery, set-up, testing, instruction, and warranties, if any.

6.8.3.2. Payment: Terms of payment by the Library to the Successful Respondent.

6.8.3.3. Specifications: The Specifications provided for in this Request as may be modified by agreement between the Library and the Successful Respondent.

6.8.3.4. Default and Cure: Terms covering the Successful Respondent's or the Library's default, if any, with rights to cure such default.

6.8.3.5. Representation of Authority: If the Successful Respondent is a corporation, limited liability company or partnership, there must be included a representation that the person signing the Contract on behalf of the Successful Respondent is authorized to execute the Contract.

6.8.3.6. Costs of Negotiation: The Library and the Successful Respondent are required to bear their respective costs of negotiating and executing the final Contract between them.

6.8.3.7. Indemnification: The Successful Respondent's indemnification, holding harmless, and duty to defend the Library in the event of any bodily injury or property damage caused by the Successful Respondent's intentional, willful, wanton, grossly negligent, or negligent wrongful act or omission in performing his/her duties as provided in the Contract.

6.8.3.8. Warranties: Any warranties which were submitted by the Respondent along with his/her Proposal including any modifications thereof agreed to by the Library and the Successful Respondent.

6.8.3.9. Insurance Requirements: The Library will specify the minimum insurance coverages required to be in place, with the Library named as an additional insured, where appropriate.

6.8.3.10. EEO Representations: Affirmation of the EEO representations which the Successful Respondent provided as part of his/her Proposal.

6.8.3.11. Termination of Contract: Means for terminating the Contract by the Library or the Successful Respondent and the non-terminating party's rights and remedies.

6.8.3.12. Governing Law: The laws of the State of Illinois shall apply to any interpretation, construction, breach and enforcement of the Contract. Any action to interpret, construe, for breach, and/or enforcement of the Contract shall be initialed and maintained in the Circuit Court for the Sixth Judicial Circuit, Champaign County, Illinois, or, if applicable, the United States District Court for the Central District of Illinois.

6.8.3.13. Materials and Supplies Inspection: Unless otherwise specified, materials and equipment purchased will be inspected as to meeting the quality requirements of the Invitations to Bid. When deemed necessary, samples of supplies or materials will be taken at random from stock received for submission to a commercial laboratory, or other appropriate inspection agency, for an analysis and test as to whether the material conforms in all respects to the specifications. In cases where the commercial laboratory report indicates that the material does not meet the specifications, the expense of analysis is to be borne by the Successful Respondent and the order or balance thereof may be cancelled by the Library.

6.8.3.14. Safety: The Successful Respondent shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, that occur as a result of the Successful Respondent's completion of the work. The safety provisions of

applicable laws and building construction codes shall be observed, and the Successful Respondent shall take or cause to be taken such additional safety and health measures as the Library's Director of Facilities, may determine to be reasonably necessary.

6.8.3.15. Contract Amendments: All changes to the Contract must be mutually agreed upon in writing and signed by the parties to the Contract. If any such agreed-upon change causes an increase or decrease in the Successful Respondent's cost of, or the time required for, the performance of any part of the work under this Contract, adjustment shall be made and the Contract modified accordingly. Any agreements not signed, as heretofore indicated, shall be considered null and void. The Successful Respondent shall furnish an itemized price breakdown in connection with any proposal made for Contract modification. The price breakdown shall be in sufficient detail to permit an analysis of all material and labor costs. If the proposal includes a time extension, a justification therefore also shall be furnished.

6.8.3.16. Contract Will Apply to Subcontractors: The provisions of this Contract apply to any subcontractor. The Successful Respondent agrees that they are fully responsible to the Library for the acts and omission of their subcontractors and of persons either directly or indirectly employed by them as they are for the acts and omissions of themselves or persons directly employed by them. Nothing contained in the Contract documents shall create any contractual relation between any subcontractor and the Library. The Successful Respondent shall not contract any part of the work under this Contract, or permit their contracted work to be further subcontracted, without the prior written approval of the Director of Facilities. The Successful Respondent shall submit with their bid a complete list of proposed subcontractors and possible alternates.

6.8.3.17. Payment for Work: Payment in full will be made upon submission of an invoice at the end of each month. All payments are subject to satisfactory final inspection and acceptance by the Library.

6.8.3.18. Drug-Free Work Environment: The Successful Respondent shall comply with the Drug Free Workplace Act and Certification of Compliance. The Vendor Representations and Additional Duties (VRAD) form included is to be completed by the Respondent and returned with said proposal.

6.8.3.19. Additional Terms: Such other terms, if any, as the Library and the Successful Respondent shall agree.

6.9. Termination of Solicitation Process/No Rights Created: The Library reserves the right to terminate the solicitation and selection process at any time, to reject any or all Proposals, and to award a Contract in the best interest of the Library. Nothing herein shall be deemed to create any right or interest in any arrangement between the Library and any Respondent unless and until the Library and the Successful Respondent have entered into and executed a Contract.

Nothing herein shall be deemed as obligating the Library to accept a Proposal based solely on lowest price.

6.10. Prevailing Wage Act/Davis-Bacon Act: To the extent applicable –

6.10.1. Prevailing Wage Act: Any Contract entered into between the Successful Respondent and the Library will be subject to the Illinois Prevailing Wage Act (820 ILCS 130/1 et seq.), as amended to date, unless superseded by the Davis-Bacon Act or otherwise stated. The Respondent shall pay its workers not less than the prevailing rates so determined and comply with the Act's requirements, including, but not limited to, the keeping of accurate records showing the names and occupation of all laborers, workers and mechanics employed on the work if a Contract is signed. The records shall show the actual hourly wages paid to each such person. Should the rates change during the Contract period, the Respondent shall pay its workers not less than the rates in effect.

6.10.2. Davis-Bacon Act: To the extent it is applicable, the Respondent shall comply with the federal Davis-Bacon Act rather than the Illinois Prevailing Wage Act referred to above.

6.11. Affirmative Action: The Successful Respondent and its subcontractors, if any, shall agree to comply with The City of Urbana's Affirmative Action Ordinance and, when required, shall submit written evidence of the firm's employment practices, policies, goals and statistical data concerning employee composition on race, color, job description and compensation. "Award of Contract" is contingent upon on-site inspection or other means of verification in accordance with City of Urbana procedures.

6.11.1. Compliance with City Ordinance: If the Contract will be over $25,000 and provides for construction work (which may include labor, material, supplies and/or equipment) or if the Contract will be over $30,000 and provides for the performance of services or the delivery of goods but not construction work, the Successful Respondent shall comply with the Discrimination in Employment by Contractors and Vendors with the City Ordinance (Urbana City Code Sec. 2-119 as amended). Pursuant to the Ordinance, the Respondent must submit to the City's Commission on Human Relations the statement provided for in Urbana City Code Section 2-119(b)(1)-(7) on the form provided by the City. Inquiries concerning this requirement may be directed to the City's Human Relations Officer at 400 S. Vine Street, Urbana, IL 61801 or by telephone at 217 384-2466 or by e-mail at hro@urbanaillinois.us. Further, the Successful Respondent shall comply with The City's Human Rights Ordinance (Urbana City Code Sec. 12-1 et seq.).

6.11.2. Veterans Preference: If this Proposal involves construction, the Successful Respondent shall comply with the Veterans Preference Act (330 ILCS 55/0.01 et seq.,) and the Employment of Illinois Workers on Public Works Act (30 ILCS 570/0.01 et seq.) in the employment and appointment to fill positions in the construction, addition to, or alteration of any public works.

SECTION 3 - BID FORM

TO: THE URBANA FREE LIBRARY
210 West Green Street
Urbana, Illinois 61801

RE: REQUEST FOR PROPOSAL #2122-004
TEPPER BUILDING MOLD REMEDIATION

1. The undersigned, having become familiar with the local conditions affecting the cost of the work and with the Request for Proposal and all exhibits appended thereto (hereinafter, collectively referred to as the "Documents"), hereby proposes on behalf of the Respondent to provide and furnish all labor, materials, necessary tools, expendable equipment, and all utility and transportation services necessary to perform and complete in proper manner all of the work and tasks required in connection with the work and tasks described in the Documents, for the sum stated below offers to undertake, perform and complete the work and tasks described in the aforesaid as follows:

   Phase 1: Demolition and removal of microbiological contaminated building materials in the Basement including Mechanical Room, all Storage Rooms and first floor including Restrooms, Storage Rooms and offices.

   Cost of phase 1: $_____

   Phase 2: Decontamination and cleaning of microbiological contaminated building materials

   Cost of Phase 2: $_____

   Phase 3: Cleaning of the basement and first floors.

   Cost of Phase 3: $_____

   Total Cost $_____

2. The undersigned, on behalf of the Respondent, indicates a single percentage for their overhead and profit to be added to the net extra job cost for changes in the work required to be performed by subcontractors should the Library approve of the use of any such subcontractor: _____**%**

3. The undersigned, on behalf of the Respondent, further declares that he/she is fully familiar with all conditions of all premises upon which the Respondent's work will be performed if selected as the Successful Respondent. The undersigned, on behalf of the Respondent, moreover declares that he/she is familiar with the work and tasks described in the Documents and that the Proposal or Proposals provided herein take into consideration and include all necessary personnel, equipment, supplies, and materials necessary to commence, undertake and complete the work and tasks described in the Documents for and on behalf of the Library.

4. The undersigned, on behalf of the Respondent, further understands and agrees that, if this Response is accepted, the Respondent is ready, willing and able to provide all personnel, equipment, supplies, and materials necessary to commence, undertake and complete all work and tasks described in the Documents and that such work and tasks will be undertaken and completed in a professional manner consistent with the work and task descriptions in the Documents, except for such equipment, supplies, and materials that are to be furnished by the Library.

5. The undersigned, on behalf of the Respondent, further agrees that if the Respondent is selected as the Successful Respondent, the Successful Respondent shall be required, within fifteen (15) days of becoming the Successful Respondent, to enter into and execute a written Contract that contains the rights, responsibilities and obligations of the Successful Respondent and the Library as described in the Documents.

6. The undersigned, on behalf of the Respondent, further agrees that he/she and Respondent's surety will execute and present within fifteen (15) days of becoming the Successful Respondent a performance bond, satisfactory to and in the form prescribed by the Library in the sum of the full amount of the Contract, guaranteeing the faithful performance of the work in accordance with the terms of the Contract.

7. The undersigned, on behalf of the Successful Respondent, further agrees to begin work not later than fifteen (15) days after the last party to the Contract executes the same or the Library's Board of Trustees approves the same, whichever is later, unless otherwise agreed to in writing by the parties to the Contract, and to complete the work in such manner and with sufficient materials, equipment, and personnel as will insure its completion within the time limits specified in the Contract, it being understood and agreed that the completion within the time limit is an essential part of the Contract. Such time for completion of work shall include final cleanup of premises.

8. The Respondent, if selected as the Successful Respondent, recognizes and agrees that it will be required to indemnify, hold harmless and defend the Library in such manner as the Documents provide.

9. The provisions of this Response apply to any subcontractor that the Respondent, if the Successful Respondent, may request the Library to approve and, if approved in writing by the Library, each such subcontractor will be obligated to commence, perform and complete all such work and/or tasks assigned to the subcontractor in the same manner, timeliness and quality as the Successful Respondent would be required to do.

10. Each Proposal shall be accompanied by a bank draft, cashier's check, letter of credit, certified check or proposal bond issued by a licensed surety equal to *ten* percent (10%) of the total value of the Proposal to serve as a Proposal bond. Any check submitted to secure the Proposal must be made payable to the "The Urbana Free Library" with the Request number included in the memo part of the check. All security tendered shall be held by the Library's Administrative Offices until a Successful Vendor has been selected and Contract documents have been signed or until it is determined that such security shall be returned to the respective Vendors. The amount of the check or bond is:

_____

Dollars

[$_____]

If this Response is accepted and the undersigned shall fail to execute a Contract as required herein and provided in the Documents, it is hereby agreed that the amount of the check or draft, or Respondent's bond substituted in lieu thereof shall become the property of the Library, and shall be considered as payment of damages due to delay and other causes suffered by the Library because of the failure of the Successful Respondent to execute the said Contract and performance bond; otherwise said check or draft or Respondent's bond substituted in lieu thereof shall be returned to the undersigned as provided in the Documents.

Attach PROPOSAL BOND, BANK CASHIER'S CHECK, or CERTIFIED CHECK.

In submitting this Response, the undersigned declares that the only person(s) or parties interested in the Response as principals are those named herein; and that the Response is made without collusion with any other person, firm, or corporation or any person appointed to the Library's Board of Trustees or any Library employee, whether paid or serving as a volunteer.

Further, in submitting this Response, the undersigned represents and warrants that he/she is duly authorized by the Respondent to submit this Response and that the same is being submitted in good faith.

FOR AN INDIVIDUAL RESPONDENT

BUSINESS ADDRESS:

AUTHORIZED SIGNATURE:

_____ _____

(SEAL)

Please Print "Authorized Signature" Below:

_____

Business Phone: _____

Fax Number: _____

E-mail Address: _____

FOR A PARTNERSHIP RESPONDENT

FIRM ADDRESS:

AUTHORIZED SIGNATURE:

_____

Please Print "Authorized Signature" Below

_____

Title: _____

Business Phone: _____

Fax Number: _____

E-mail Address: _____

INSERT NAMES AND ADDRESSES OF ALL FIRM MEMBERS *(Please Print Clearly)*:

_____

_____

_____

_____

FOR CORPORATION OR LIMITED LIABILITY COMPANY

BUSINESS ADDRESS: **AUTHORIZED SIGNATURE:**

Please Print "Authorized Signature" Below:

Title: _____

Business Phone: _____

Fax Number: _____

E-mail Address: _____

EXHIBIT E

SECTION 7 – REQUIRED FORMS and ACCOMPANYING INF~~I~~ORMATION TO BE COMPLETED AND SUBMITTED WITH PROPOSAL

7.0 Each Response shall include the following:

7.1. A fully completed Response Form.

7.2. Equal Employment Opportunity (EEO) Workforce Statistics Form.

7.3. Vendor Representations and Additional Duties (VRAD) Form.

7.4. Acknowledgment of Addenda Form.

7.5. List of proposed supplies with product data.

#2122-004-TEPPER BUILDING MOLD REMEDIATION

Combined Payment and Performance Bond

We_____, as Principal are held and firmly bound unto The Urbana Free Library (hereafter referred to as "TUFL") in the sum of Dollars ($_____annual cost) lawful money of he United States, well and truly to be paid unto said TUFL for the payment which we bind ourselves, our heirs, executors, administrators, successors and assigns jointly to pay said TUFL this sum under the conditions of this instrument.

WHEREAS, THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH that the said Principal has entered into a written contract with TUFL for the performance of work on the contract to which this is attached, which contract is hereby referred to and made a part hereof, as if written herein at length, and whereby the said Principal has promised and agreed to perform said work in accordance with the terms of said contract, and has promised to pay all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished to such Principal for the purpose of performing such work and has further agreed to pay all direct and indirect damages to any person, firm, company or corporation suffered or sustained on account of the accepted and any warranty period applicable thereto completed; and has further agreed that this bond shall inure to the benefit of any person, firm, company, or corporation, to whom any money may be due from the Principal, subcontractor or otherwise, for any such labor, materials, apparatus, fixtures or machinery so furnished and that may suit may be maintained on such bond by any such person, firm, company or corporation, for the recovery of any such money.

NOW, THEREFORE, if the said Principal shall well and truly perform said work in accordance with the terms of said contract, and shall pay all sums of money due or to become due for any labor, materials, apparatus, fixtures or machinery furnished to the Principal for the purpose of performing such work, and shall commence and complete the work within the time prescribed in said contract, and shall pay and discharge all damages, direct and indirect, that may be suffered or sustained on account of such work during the time of the performance thereof and until the said work shall have been accepted, and any warranty period applicable thereto completed, and shall hold TUFL and its employees and agents as required in said contract on account of any such conditions or requirements of said contract, then this obligation to be void; otherwise to remain in full force and effect and upon notice of the Principal's failure to perform, TUFL may liquidate this bond to perform said work, and any person furnishing materials or performing labor, either as an individual or as a subcontractor, shall have the right to sue on this bond in the name of TUFL for its use and benefit.

No change, extension of time, alteration or addition to the terms of the contact or the Contract Documents accompanying the same or to the work to be performed thereunder shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the Contract Documents.

PROVIDED FURTHER, that no final settlement between TUFL and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

In addition, the Principal expressly guarantees that all services to be performed, all materials to be furnished, and all performance under this contract shall be fulfilled in accordance with all requirements of the contract and Contract Documents. In addition, Principal expressly guarantees that in the event TUFL is required to enforce this bond in a court of law, TUFL will be indemnified with respect to all court costs and reasonable attorney's and witness fees which are related to such enforcement proceedings.

IN TESTIMONY WHEREOF, the said Principal has caused this instrument to be signed by its officers and its corporate seals to be hereunto affixed this _____ day of _____, 20___.

PRINCIPAL: (Company Name)

(SEAL) _____

By: (Signature and Title)

_____ _____

STATE OF _____)

)ss.

COUNTY OF _____)

I, _____, a Notary Public in and for said County and State, do hereby certify that

_____ (insert name of individuals signing on behalf of PRINCIPAL) who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL, appeared before me this day in person and acknowledged respectively, that they signed, sealed and delivered said instrument as their free and voluntary act for the used and purposes therein set forth.

SUBSCRIBED and SWORN to before me this _____ day of _____, 20____

_____

Notary Public

My commission expires: _____

Tepper Building Mold Remediation
Addenda

Proposer has examined and carefully studied the Request documents and the following Addenda, receipt of which is hereby acknowledged. If no Addenda were issued, check the box for "No addenda were received." If submitting by e-mail, scan a copy of the signed form and include it with the Proposal.

Addendum No. (Initials)	Addendum Date	Acknowledge Receipt
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ No addenda were received (check)

Acknowledged for: _____
(Name of Proposer)

By: _____
(Signature of Authorized Representative)

Name: _____
(Print or Type)

Title: _____

Date: _____