

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

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SANTA BARBARA • SANTA CRUZ

OFFICE OF DESIGN & CONSTRUCTION SERVICES and PHYSICAL FACILITIES

CONTRACTING SERVICES
Building 439
Santa Barbara, California 93106-1030
Telephone (805) 893-3356
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- SENT VIA:** FAX ON THIS DATE
 HAND DELIVERY ON THIS DATE
 FEDERAL EXPRESS ON THIS DATE
 UNITED PARCEL SERVICE ON THIS DATE

HOLDERS OF PLANS AND SPECIFICATIONS:

Davidson Library SEP Project, Bldg. 525
FM140307S/141-12
Addendum No. 1

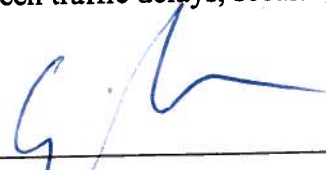
February 11, 2014

Enclosed is **ADDENDUM NO. 1** to the Construction Documents on the above-captioned project.

Bid date is February 28, 2014 at 2:30 PM to be held at:

CONTRACTING SERVICES
Facilities Management, Bldg. 439,
Door #E, Reception Counter
University of California, Santa Barbara
Santa Barbara, CA 93106-1030.

Late arrivals shall be disqualified. Please allow time for unforeseen traffic delays, securing a parking permit and potential parking problems.



Greg Moore,
Associate Director, Contracting Services

ADDENDUM NO. 1

to the

CONSTRUCTION DOCUMENTS

February 11, 2014

GENERAL

The following changes, additions or deletions shall be made to the following document(s) as Indicated; all other conditions shall remain the same.

I. SPECIFICATIONS

Item No.

- 1.1** **ADD DIVISION 1, GENERAL REQUIREMENTS, SECTION 01500, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS, 1.04 CONTROL OF AIRBORNE CONTAMINANTS, 3 pages, attached.**

Item No.

- 1.2** **ADD DIVISION 2, SITEWORK, SECTION 02110, DEMOLITION, 02082, LEAD-RELATED DEMOTION WORK, 15 pages, attached.**

END OF ADDENDUM NO. 1

SECTION 01500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

1.04 CONTROL OF AIRBORNE CONTAMINANTS

- A. This section is applicable when any of the following tasks are performed in occupied existing buildings and/or where the project will impact occupied existing buildings.
 - 1. Tasks that include chemical mixing on site, including but not limited to epoxy coatings.
 - 2. Tasks that include spray application.
 - 3. Welding and soldering tasks.
 - 4. Tasks that include sanding and grinding.
 - 5. Tasks that generate visible emissions.
 - 6. Tasks that generate fugitive dust, chemical vapors, aerosols, fumes and/or other airborne contaminants.
- B. Contractor shall develop detailed work plan(s) for each applicable task. Work plan shall be submitted to the University Representative for review at a minimum of five working days before applicable task is scheduled to commence. Each work plan shall document:
 - 1. Work sequence.
 - 2. Work area limits of task.
 - 3. Negative Pressure Containment (NPC) details including isolation of the work area from building's Heating Ventilation Air Condition (HVAC) systems.
 - 4. Waste transport and disposal procedures.
 - 5. Material Safety Data Sheets (MSDS) for applicable products.
 - 6. Applicable training of workers.
 - 7. Applicable engineering controls (example: ventilation).
 - 8. Applicable Personal Protective Equipment (PPE) for workers.
 - 9. Acceptable airborne contaminant levels in and adjacent to the work area.
 - 10. Exposure monitoring plan for
 - a. Workers performing tasks.
 - b. Migration of airborne contaminants from work area.
 - 11. Housekeeping procedures.
 - 12. Work area clearance standards.
- C. Task shall not commence until University Representative has:
 - 1. Reviewed work plan and authorized in writing that the task may proceed.
 - 2. Inspected NPC.

- D. Contractor shall install, operate and maintain Negative Pressure Containment(s) (NPC) as needed to control fugitive dust, chemical vapors, aerosols, fumes and other airborne contaminants generate by applicable task. NPC(s) shall be designed and built to:
1. Separate the project air space from the building.
 2. Ensure that the campus population and research are protected from air borne contaminants.
 3. Provide adequate ventilation for the work space.
- E. Negative Pressure Containment (NPC): NPC shall meet at a minimum the following specifications.
1. Maintain negative pressure relative to outside pressure throughout the project.
 2. Achieve at least 6 Air Changes per Hour (ACH) and/or a minimum of - 0.02 column inches of water pressure differential, relative to outside pressure.
 3. Differential/Negative pressure shall be documented throughout the project by manometric measurements.
 4. Adequate number of exhaust machine(s) shall be provided, operated and maintained by Contractor to establish a NPC that achieves the required total exhaust in Cubic Feet per Minute (CFM) for 6 ACH as calculated by:
 - a. Total Exhaust CFM = $\frac{6 \text{ ACH} \times \text{Space Volume (Length' x Width' x Height')}}{60}$
 5. If dust/fibers/aerosols are generated by the project, the exhaust machines shall be equipped with HEPA filters.
 6. Critical barriers shall be placed over all the openings to the NPC. Air from the NPC shall be exhausted to the exterior of the building. Typical critical barriers shall consist of 6 mil fire resistant poly sheeting.
 7. NPC exhaust shall be done in a way that ensures it will not reenter the building, adjacent buildings or become a hazard to individuals.
 8. NPC shall encompass the work area limits.
- F. University Representative may independently monitor airborne contaminant levels.
1. University monitoring results will take precedent over those of the Contractor's.
- G. If University Representative and/or Contactor monitoring documents that airborne contaminant levels have exceeded those indicated by the work plan and/or applicable regulatory standards, the Contractor, at no cost to the University, shall:
- a. Stop work and institute corrective measures to bring airborne contaminant levels within acceptable limits.
 - b. Resume work only after receiving written approval from the University Representative.

- H. University may independently document that clearance standards, indicated by work plan and/or applicable regulatory standards, have been meet.
- I. Contractor shall maintain and operate NPC(s) until applicable clearance standards are met and documented to the satisfaction of the University Representative.
 - 1. Applicable clearance shall be those established by the work plan or applicable regulation.
 - 2. The Contractor, if requested by University Representative, shall:
 - a. Allow University Representative to independently conduct clearance testing.
- J. The NPC(s) shall remain in operation until written permission, from the University Representative, is given to the contractor for removal.

SECTION 02082

LEAD-RELATED DEMOLITION WORK

PART 1 GENERAL

1.01 DESCRIPTION

- A. This section consists of furnishing all work necessary to perform the removal, packaging, handling, transportation, and disposal of known and presumed lead-containing materials and lead-contaminated materials located within the project limits. All work shall be performed in accordance with all federal, state, and local requirements and statutes. The work specified herein shall be the removal of presumed and known lead-containing materials by persons knowledgeable, qualified, and trained in the removal, treatment, handling, packaging, transportation, and disposal of lead-containing materials, and the subsequent cleaning of the affected environment. These persons shall comply with all federal, state and local regulations and mandated work practices, and shall be capable of performing the work in the Contract. All paints, coatings, and glazings on and in the building and equipment, except those specifically listed in survey reports as having no lead detected, are assumed be lead based and shall be managed accordingly.
- B. The Contractor and its sub-contractors, as applicable, shall take necessary precautions to prevent the release of lead in the form of dust, fumes or mists from lead-containing building materials into the air or onto surrounding environments. The Contractor shall inform all workers, supervisory personnel and authorized visitors on the job site of the potential hazards of lead and of necessary precautions and housekeeping procedures to reduce the potential for exposure in areas where lead is known to be present.
- C. The Contractor shall pay all costs for exposure characterization, air sampling, medical monitoring, blood lead monitoring, preparation of written compliance programs, provision of supplemental training, implementation of feasible engineering controls, provision of hygiene facilities and personal protection equipment, and other costs associated with compliance with applicable lead regulations.

1.02 SCOPE OF WORK

- A. General Requirements: Work of this section includes, but is not limited to, the following:
 - 1. Removing, packaging, and legally disposing of all presumed lead-containing, lead-containing and lead-contaminated materials generated by the project from the project site. The work specified herein includes the collection of lead containment wastes and debris (both hazardous and non-hazardous) for packaging, transportation, and disposal and providing retention areas needed for the collection of the wastes.

2. The Contractor shall perform employee exposure monitoring as required by Cal-OSHA during the project.
- B. The following precautions shall be taken prior to initiating demolition activities involving any lead-containing material.
1. The Contractor shall install lead dust control measures, lead waste and debris retention areas, worker protection, and decontamination areas in accordance with 8 CCR § 1532.1, 29 CRF 1529.62, this Section, the Contractor's work plan, and lead exposure assessment data.

1.03 RELATED WORK

- A. SECTION 01080 – REGULATORY REQUIREMENTS
- B. SECTION 1300 – SUBMITTALS
- C. SECTION 01500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS
- D. SECTION 02110 – DEMOLITION

1.04 REQUIRED LICENSURE

- A. Contractor shall be licensed by the State of California, Contractors State License Board.
- B. Transportation of Lead-Containing Materials: Contractor shall be a registered hazardous waste transporter with State of California, Department of Toxic Substances Control. If the Contractor is not a hazardous waste transporter, the Contractor shall have a subcontractor that his a registered hazardous waste transporter with State of California, Department of Toxic Substances Control

1.05 APPLICABLE DOCUMENTS AND REGULATIONS

- A. It is the responsibility of the Contractor to know the current regulations controlling work and to perform all project related work in accordance with such regulations that provide for worker and public safety against lead exposure.
- B. The publications listed below form a part of this specification to the extent referenced. The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements shall apply. The publications are referenced in the text by basic designation only.

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR Part 1910	Occupational Safety and Health Standards for General Industry
29 CFR Part 1910.134	Respiratory Protection
29 CFR Part 1200	Hazard Communication – General Industry
29 CFR Part 1926	Occupational Safety and Health Regulations for Construction
29 CFR Part 1926.59	Hazard Communication - Construction
29 CFR Part 1926.62	Lead

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 148	Hazardous Waste Injection Restrictions
40 CFR Part 260	Hazardous Waste Management Systems: General
40 CFR Part 261	Identification and Listing of Hazardous Waste
40 CFR Part 262	Standards Applicable to Generators of Hazardous Waste
40 CFR Part 263	Standards Applicable to Transporters of Hazardous Waste
40 CFR Part 264	Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR Part 265	Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
40 CFR Part 268	Land Disposal Restrictions
49 CFR Part 171-185	U.S. Department of Transportation (USDOT)
49 CFR Part 172	Hazardous Material Table, Special Provisions, Hazardous Material Communications, Emergency Response Information, and Training Requirements.
49 CFR Part 178	Specifications for Packaging

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701	(1989) Methods of Fire Test for Flame-Resistant Textiles and Films
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NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH OSHA Booklet 3142 Lead in Construction

CALIFORNIA CODE OF REGULATIONS (CCR)

8 CCR Part 1532.1	Lead
8 CCR Part 5144	Respiratory Protection
8 CCR Part 5194	Hazard Communication
17 CCR, Div. 1, Cpt. 8	Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards
22 CCR, Div. 4, Cpt. 30	Hazardous Waste Handling

UNDERWRITERS LABORATORIES (UL)

UL 586 (1990) High-Efficiency, Particulate, Air Filter Units

CALIFORNIA LABOR CODE Section 6501.5-6505.5

ALL OTHER STATE, COUNTY, AND LOCAL CODES AND ORDINANCES AS APPLICABLE.

1.06 NOTIFICATIONS AND PERMITS

- A. Contractor shall make all required written notifications or applications to regulatory agencies including the following:
1. California Division of Occupational Safety and Health (Cal-OSHA)
Lead Work Pre-Job Notification shall be accordance with 8 CCR Part 1532.1.
 2. Local or facility agencies as applicable.

1.07 SUPERVISOR/COMPETENT PERSON AND WORKERS

- A. The Contractor shall have a Lead-Related Demolition Supervisor/Competent Person within two hours of site while work on this Contract is in progress. The Lead-Related Construction Supervisor/Competent Person shall possess the following training and certifications for performing lead-related work.
1. The Lead-Related Demolition Supervisor/Competent Person shall have successfully training meeting the requirements of 8 CCR § 1532.1 and 17 CCR, Division 1, Chapter 8. Training shall be provided prior to the time of job assignment and, at least, annually. The Supervisor/Competent Person shall be thoroughly familiar and experienced with lead removal and related work, and shall be familiar with and enforce the use of all safety procedures and equipment. He/she shall be knowledgeable of all EPA, OSHA, and NIOSH requirements and guidelines. Additionally, the Supervisor/Competent Person shall be certified as a Lead-Related Construction Supervisors in accordance with 17 CCR, Division 1, Chapter 8.
- B. All workers shall have received training in accordance with 8 CCR § 1532.1 and 17 CCR, Division 1, Chapter 8. The training shall be provided prior to the time of job assignment and, at least, annually. Additionally, all workers shall be certified as Lead-Related Construction Workers in accordance with 17 CCR, Division 1, Chapter 8.

1.08 SUBMITTALS

- A. Submit, as applicable, the following to the University's Representative for approval within 10 days of receiving the Notice to Proceed. These submittals are in addition
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to those required in Section 01340. These submittals shall be submitted in accordance with Section 01340.

1. Submit copies of written notifications to regulatory agencies.
 - a. California Division of Occupational Safety and Health (Cal-OSHA) Lead Work Area Pre-Job Notification.
 - b. Local or facility agencies as applicable.
2. Submit copies of waste hauler's Hazardous Waste Transporter Registration and Environmental Protection Agency Acknowledgement of Notification of Hazardous Waste Activity. Identify what types of waste containers may be used for the storage and transport of hazardous and non-hazardous wastes.
3. Identify the landfill that will be used. Identify what waste characterization sampling that will be required by the landfill. Identify what types of waste containers and packaging that will be accepted for both hazardous and non-hazardous wastes.
4. A written lead waste stream management plan listing the types of lead-containing waste expected to be generated by the project, packaging and labeling requirements, manifesting requirements, and landfill/disposal requirements.
5. A written lead-related demolition work plan identifying the following:
 - a. The lead disturbance trigger tasks that the Contractor expects to perform during work on the Test Sections and during the course of performing the work listed in the Scope of Work.
 - b. The type of dust control measures to be used during work on the interior of the building.
 - c. The type of demarcation that will be used around the lead work control areas.
 - d. The type of training and certification for the Lead-Related Supervisor/Competent Person and workers on the site
 - e. A detailed description of the procedures to be used during the removal, handling, and storage of the lead-containing materials during the Test Section work and during the work listed in the Scope of Work.
 - f. A description of the hazardous and non-hazardous waste packaging, storage and disposal procedures to be used including the requirements of the waste transporter and the landfill.

- g. Personal and work site decontamination procedures.
 - h. Emergency plan and route of egress from the site.
 - i. A list of prohibited lead-related activities at the site.
 - j. The name and qualifications of the third-party consultant that the Contractor will be utilizing during the project.
6. Manufacturer's product data and material safety data sheets for all chemical products to be used on site.
 7. Identification of the project's Lead-Related Supervisor/Competent Person who is experienced in administration and supervision of lead-containing material demolition projects, including work practices, protective measures for building and personnel, disposal procedures, etc.
 8. Documentation that the Contractor's Lead-Related Supervisor/Competent Person and Lead-Related Demolition Workers performing lead-related demolition, disposal, and air sampling operations have received training and are certified in accordance with Article 1.07 of this Section
 9. Documentation from a Physician that all employees or agents who may be exposed to airborne lead in excess of the action level have received medical monitoring in accordance with 29 CFR Part 1926.62 to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. The contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, humidity, and chemical contaminants) that may impact on the employee's ability to perform work activities.
 10. Documentation from a Physician that all employees or agents who may be exposed to airborne lead in excess of the action level have received a comprehensive medical examination as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and will receive continued medical surveillance, including biological monitoring, as required by 29 CFR Part 1926.62 and 29 CFR Part 1910.1200 and by the state and local regulations pertaining to such work. Records shall be retained, at Contractor's expense, in accordance with 29 CFR Part 1910.1020.
 11. Documentation of respirator fit-testing, performed within the last 12 months, for all Contractor employees and agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as required by OSHA regulations or be quantitative in nature.
 12. Manufacturer's documentation and certification of NIOSH approvals for respiratory protective devices utilized on site, including manufacturer's

certification of NIOSH approval of respirator cartridges (organic vapor, acid gas, mist, dust, high efficiency particulate) and High Efficiency Particulate Air (HEPA) filtration capabilities for all cartridges, filters, and HEPA vacuum systems.

B. During lead-related demolition activities, submit to the University's Representative on a weekly basis, documentation that includes, without limitation, the following:

1. OSHA required personal air monitoring results.
2. Accident/incident reports where injury or damage has occurred on or to the University's property.
3. Hazardous waste manifests, non-hazardous waste data forms, trip tickets and disposal receipts for asbestos waste materials removed from the work area shall be provided within 24 hours of the transport. Send to:

University of California, Santa Barbara
Environmental Health and Safety Department; Bldg. 565
Santa Barbara, California 93106
Attention: Bruce Carter
Hazardous Waste Program Manager

C. Upon completion of all lead-related demolition activities, submit to the University's Representative documentation that includes, without limitation, the following. The submittals required below shall be submitted no later than 20 business days following the Contractor's demobilization from the project site.

1. Work area entry/exit logbook. The logbook must record name, affiliation, time in, and time out for each entry into the work site.
2. Material Safety Data Sheets (MSDS) for solvents, encapsulants, wetting agents and replacement materials, as necessary.
3. OSHA required personal exposure air monitoring results.
4. Accident/incident reports where injury or damage has occurred on or to the University's property.
5. Supervisor/foreman logs describing the work performed each day during the project.
6. A listing of all employees who worked on the project site and training certificates, medical monitoring records, and fit test records for these employees.
7. Copies of hazardous waste manifests, non-hazardous waste data forms, trip tickets and disposal receipts for asbestos waste materials removed from the project site for the duration of the project. Manifests, non-hazardous waste data

forms, trip tickets, and disposal receipts shall be provided in chronological order.

1.09 NOTICES AND POSTINGS

- A. Post in the wash station/decontamination station, a list containing the names, addresses, and telephone numbers of the Contractor, University Representative, and emergency contact numbers.
- B. Post at the job site a list of persons authorized to enter the lead-related demolition work area.
- C. Additional postings shall include:
 - 1. Visitor entry and exit log.
 - 2. Employee daily sign in/out log.
 - 3. Work area entry and exit procedures.
 - 4. Emergency procedures.
 - 5. One copy of Cal-OSHA and California Department of Public Health regulations.
- D. Posted Warnings and Notices: The following regulations, warnings, and notices shall be posted at the work site in accordance with 29 CFR Part 1926.62, 8 CCR Part 1532.1 and California Proposition 65.
 - 1. Warning Signs and Labels: Warning signs shall be provided at building entrances and approaches to lead work control areas containing airborne lead debris. Signs and lead caution barrier tape shall be located at a sufficient distance from the lead work control areas that will allow personnel to read the sign and take the necessary protective actions required before entering the lead work control area.

1.10 WORK AREA SECURITY

- A. The lead work control area shall be restricted only to authorized personnel, including Contractor, Contractor's employees, University's Representative(s), and state, and local inspectors.
- B. Entry into the lead work control area by unauthorized individuals shall be reported immediately to the University's Representative.
- C. Contractor shall be responsible for Project site security during lead-related demolition operations in order to protect work efforts and equipment.

1.11 PERSONAL PROTECTION AND SAFETY

- A. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his/her appliances, methods, and for any damages that may result from his/her operations, improper construction practices, or maintenance. He shall erect and properly maintain at all times as required by the conditions and progress of the work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site.
- B. Work shall be performed in accordance with the requirements of applicable regulations including, but not limited to 29 CFR Part 1926.62, 8 CCR Part 1532.1, and 17 CCR, Division 1, Chapter 8. Matters of interpretation of the standards shall be submitted to the appropriate agency for resolution before starting work. Where these requirements vary, the most stringent shall apply.
- C. Respiratory protection requirements:
1. All respiratory protection programs shall be established in accordance with the respiratory protection requirements of 29 CFR Part 1910.134, 8 CCR Part 5144, and 29 CFR Part 1926.62. Copies of these regulations are included herein by reference and shall be considered as a requirement of these Specifications.
 2. All respirators used shall be selected from those approved by NIOSH for use in atmospheres containing lead dust.
 3. Work activities associated with the removal of lead-containing materials shall be conducted in a minimum of half-face air purifying respirators with P-100 filters.
 4. A sufficient supply of respirator filters shall be maintained at the work site to provide new filters to employees, University Employees, authorized visitors, and government regulator personnel throughout the duration of the project. Filters shall be replaced according to the manufacturer's recommendations, when breathing becomes difficult, or if the filter becomes wet.
 5. Respirators shall be quantitatively fit-tested a minimum of every 12 months. Either the standard Irritant Smoke Protocol or the Isoamyl Acetate Protocol may be used.
- D. A Hazard Communication Program shall be implemented in accordance with 29 CFR Part 1926.59.
- E. Right-to-know notices shall be placed in clearly visible areas of the work site in compliance with Federal, State, and local regulations.
- F. Daily personal air monitoring results shall be placed in a clearly visible area of the work site and shall be prepared so as to be easily understood by the workers.

- G. A list of emergency telephone numbers shall be posted at the site. The list shall include numbers of the local hospital, emergency squad, police and fire departments, Government Agencies, Contractor, and University representatives who can be reached 24 hours per day, and professional consultants directly involved in the project.

- H. Sufficient quantities of health and safety equipment and supplies as required by 29 CFR Part 1926.62 and 8 CCR Part 1532.1, and other materials and equipment needed to complete the project, shall be available and kept on site. Specific health and safety equipment to be utilized at all times during performance of lead-related demolition work includes the following.
 - 1. Disposable full body suits. The disposable full body suits shall have head and foot covers and shall be of a sufficient size to prevent tearing during performance of the work.
 - 2. Disposable rubber gloves.
 - 3. Hard hats.
 - 4. Safety shoes or boots.
 - 5. Safety Glasses (Eye Protection)

- I. A wash/decontamination station shall be provided on the site at all times that lead-related demolition work is being performed.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: Contractor shall adhere to the following:
 - 1. All plastic, spray-on strippable coatings and structural materials used shall be UL-certified as fire retardant or non-combustible.
 - 2. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer, brand name (where applicable), and model.
 - 3. Polyethylene sheeting utilized for worker decontamination and barriers shall be black or opaque in color and shall be a minimum of 6-mil in thickness. All polyethylene shall be fire retardant.
 - 4. Waste containers utilized during the project shall be properly labeled as required by 29 CFR § 1926.62, 8 CCR § 1532.1, and, if applicable, 22 CCR 66504.
 - 5. Warning signs as required by 8 CCR § 1532.1 and 29 CFR § 1926.62 and lead caution barrier tape shall be utilized during lead-related demolition activities.

2.02 EQUIPMENT

A. General:

1. HEPA vacuums equipped with HEPA filtration and operated in accordance with ANSI Z9.2-79.
2. Respirators shall be furnished to the workers by the Contractor. The respirators shall have been tested and approved by National Institute of Occupational Safety and Health (NIOSH) for use in lead contaminated atmospheres. Respirator usage during the project shall be determined by the results of the sampling and analysis performed during the Test Section and shall be in accordance with the requirements of 8 CCR § 1532.1 and the work plan submitted by the Contractor. The respiratory requirements below shall be utilized at a minimum.
 - a. Air purifying respirators equipped with P-100 filters at a minimum shall be utilized.
3. Contractor shall provide full body disposable protective clothing, including head, body, and foot coverings to workers and visitors in sizes adequate to accommodate movement without tearing. Full body disposable protective clothing shall be utilized at all times during lead-related demolition activities.
4. Additional safety equipment including hard hats, eye protection, safety shoes, and disposable gloves as necessary, shall be furnished to all workers and authorized visitors. This safety equipment shall be utilized at all times during lead-related demolition activities.
5. Non-skid footwear shall be furnished to all workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.
6. Furnish disposable mops, rags, and sponges for work area decontamination.

B. Removal:

1. Scaffolds, ladders, lifts, and hand tools (e.g., scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be furnished as needed.
2. Rubber dustpans and rubber squeegees shall be furnished for cleanup.
3. Brushes utilized for removing loose lead-containing materials shall have nylon or fiber bristles.

PART 3 EXECUTION

3.01 LEAD-CONTAINING MATERIAL REMOVAL PREPARATION

- A. Interior Lead-Related Demolition Work Area Preparation: In addition to the methods described in the Contractor's approved work plan, work area preparation shall be performed in accordance with the following.
1. Prepare a lead work control area by placing lead warning tape and proper signage around the removal area as required by 8 CCR § 1532.1 and 29 CFR 1926.62. The warning tape should be placed a sufficient distance away from the removal area to allow persons who are not properly trained or who are not wearing personal protective equipment to avoid the contaminated area.
 2. Install remote worker decontamination unit as agreed upon with the University's Representative.
 3. Lead Workers shall don personnel protective equipment as required in Article 2.02.
 4. Contractor shall shut down and lock out all HVAC equipment serving the areas where work will be performed.
 5. Place one layer of 6-mil polyethylene sheeting over all critical barriers including HVAC vents, windows, doorways, and corridor openings.
 6. Floor shall be covered with one layer of 6-mil polyethylene sheeting sealed with duct tape.
 7. Perform lead-containing material removal in accordance with Article 3.06 – Lead-Related Demolition.

3.02 LEAD-RELATED DEMOLITION

- A. The Contractor shall utilize the following procedures in addition to those proposed in the lead-related demolition work plan required by Article 1.08 when performing lead-related demolition on the interior of the building.
1. Interior lead-related demolition shall be performed in a manner that reduces the amount of airborne lead particulate generated.
 2. While performing manual demolition, the material shall be kept wet to reduce airborne lead concentrations. The material shall only be wetted to a point that dust control is maintained. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during manual demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and landfill.
 3. If mechanical methods (power equipment) are used such as saws or grinders,

this equipment should be used in a manner that reduces airborne dust concentrations. It is preferred that equipment with HEPA vacuum attachments be used. If equipment HEPA vacuum attachments are not used, the area to be cut or ground shall be wetted prior to cutting or grinding. The material shall only be wetted to a point that dust control is maintained. The Contractor shall take care not to produce runoff or excess water waste. Waste generated during mechanical demolition shall not be allowed to dry out and shall be quickly packaged and placed into the waste containers required by the waste hauler and the landfill. The equipment shall be decontaminated prior to removing it from the lead work control area.

3.03 LEAD WORK AREA CLEAN UP PROCEDURE

- A. Maintain surfaces within the lead work control area free of accumulations of lead debris and dust. Restrict the spread of dust and debris. Keep waste from being distributed over the work area. Do not dry sweep or use compressed air to clean up the area. When the lead removal operation has been completed, clean the area of visible lead contamination by vacuuming with a HEPA filtered vacuum cleaner and/or wet mopping the area.
- B. Final Cleaning: After all lead-containing materials are removed, the Contractor shall clean any remaining items remaining inside of the work areas including the concrete slab to remove any "settled" lead dust/debris. The concrete slab shall be HEPA vacuumed and then mopped. The following procedures shall be used:
 - 1. Wash all surfaces in the work area with a solution containing 5 percent trisodium phosphate (TSP). Prepare solution using hot water. Workers shall use towels, sponges, and mops to clean all surfaces including all areas that had been covered with polyethylene sheeting. Cleaning shall start at the ceiling and work down to the floors. A new solution of TSP and water shall be mixed as the water becomes dark.

3.04 LEAD-RELATED DEMOLITION FINAL INSPECTION

- A. The University will perform a visual inspection of each lead work control area at the completion of each phase of lead-related demolition. The inspection will determine that all lead-containing dust and debris has been cleaned up and that all lead-containing materials have been removed, packaged, and placed into the proper waste containers. If the final visual inspection is not acceptable, the Contractor shall perform the cleanup procedures listed in Article 3.04 of this Section.

3.05 LEAD WASTE HANDLING PROCEDURES

- A. All waste shall be handled in accordance with the Contractor's approved work plan and the following:
- B. All disposable personal protective equipment, respirator cartridges, and HEPA

vacuum filters shall be packaged and disposed of upon completion of the work shift and when the lead removal operation has been completed.

- C. All removed lead-containing materials, lead-contaminated clothing and equipment, and lead-containing dust/debris shall be packaged and placed into waste containers approved for use by both the waste transporter and landfill.
- D. Properly label each lead waste container in accordance with the requirements of the waste hauler and the landfill. At a minimum, the labels shall identify the type of waste and the date lead-contaminated wastes were first put into the container.
- E. The Contractor shall make provisions for the safe storage of waste on site for waste characterization and eventual disposal. For health and safety reasons, waste storage areas must be treated as lead work control areas with restricted access.
- F. The University may perform waste characterization sampling of all lead-containing waste or lead-contaminated waste that is generated during the project. The waste characterization tests performed on the waste will be in accordance with Title 22.

3.06 OSHA PERSONNEL AIR MONITORING

- A. Air monitoring required by OSHA for lead exposure is work of the contractor. The contractor is responsible for providing daily OSHA compliance monitoring as per 29 CFR Part 1926.62 and 8 CCR Part 1532.1.
 - 1. At minimum, Contractor shall conduct representative (25% of crew) breathing zone personal air monitoring of its employees twice each shift and repeated daily.
 - 2. Monitoring shall be conducted by a qualified professional experienced and knowledgeable about the methods of air monitoring and in accordance with 29 CFR Part 1926.62 and 8 CCR Part 1532.1.
 - 3. Monitoring results and appropriate laboratory analysis work shall be submitted to University's Representative within twenty-four (24) hours of the monitoring work.

3.07 ALTERNATE PROCEDURES

- A. The procedures described in this Section shall be utilized at all times.
- B. If specified procedures cannot be utilized, a request shall be made in writing to the University providing details of the problem encountered and proposed alternatives.
- C. Alternative procedures shall provide equivalent or greater protection than the procedures that they replace.
- D. Alternative procedure shall be approved in writing by the University prior to implementation.

END OF SECTION
