

SECTION 01110

HAZARDOUS MATERIALS PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general requirements and procedures for hazardous materials related work activities, as applicable, to the Work and the existing conditions at the project site.
  - 1. Work includes Hazardous Materials Precautions and Handling Procedures for non-abatement trades, as applicable.
  - 2. Work includes controlled renovation procedures and hazardous materials controls, as applicable, including:
    - a) Drilling and attachment and minor disturbances to friable asbestos-containing materials (ACM), including thermal system insulation (TSI) and surfacing materials such as acoustical plasters and fireproofing, as applicable.
    - b) Drilling and attachments and minor disturbances to non-friable or non-surfacing asbestos-containing materials such as wall and ceiling non-acoustical plasters, sheetrock, transite board, vinyl floor tiles, thin coat paints, and floor tile mastics, as applicable.
    - c) Daily clean up of asbestos and lead-based paint debris from site demolition, coring, anchoring or other minor disturbances.
    - d) Final clean up of the site for lead wipe clearance sampling, airborne asbestos sampling or visual inspection, as applicable.
- B. Related Documents:
  - 1. Document 00235 - Existing Conditions: Hazardous Materials, where applicable.
  - 2. SFUSD's AHERA and Lead-Based Paint survey files with pertinent materials attached to the Contract Documents, where applicable.
- C. Related Sections:
  - 1. Section 01010 - Summary of Work.
  - 2. Section 01100 - Procedures for Working in Restricted Access Areas.
  - 3. Section 01300 - Submittals.
  - 4. Section 02090 - Hazardous Materials Abatement and Control.
  - 5. Appendix A - Abatement Work Plan/Related Sections Drawing/Plans.
  - 6. Section 15250 - Mechanical Reinsulation, where applicable.

## 1.2 DEFINITIONS

- A. **Abatement:** Primary work involving the removal, containment, control or treatment of hazardous materials.
- B. **Asbestos:** A generic name given to a number of naturally occurring hydrated mineral silicates that possess a unique crystalline structure, are incombustible in air, and are separate into fibers. Asbestos includes any material that contains greater than 0.1 percent by weight the asbestiform varieties of chrysotile (serpentine); crocidolite (riebecklite); amosite (cummingtonite-grunerite); anthophyllite; tremolite; and actinolite. For the purposes of determining respiratory protection and worker protection both the asbestiform and non-asbestiform varieties of the above materials and any of these materials that have been chemically treated or altered shall be considered asbestos.
- C. **Asbestos-Containing Material (ACM):** Any material which contains more than one percent (>1%) asbestos by weight for the purposes of abatement, waste disposal and fiber controls specified under this Contract.
- D. **Asbestos Containing Construction Material (ACCM):** Any material which contains more than one tenth of one percent (>0.1%) asbestos by weight requiring personal protection, dust controls, Contractor registration, and worker training in compliance with Cal/OSHA regulation 8 CCR 1529. For waste disposal purposes, ACCM greater than 0.1% by weight and less than 1% by weight is classified as non-hazardous waste, although it is a regulated material under Cal/OSHA.
- E. **Hazardous Materials Control:** Incidental work procedures for control of releases of project-related hazardous materials, including containment, enclosure, wetting, controlled renovations and demolition procedures, and removal and disposal.
- F. **Hazardous Waste:**
1. Waste material, including asbestos, loose and peeling lead-based paints, PCB ballasts, and any other material which requires management, handling transport, treatment, storage or disposal according to the requirements of the Federal Resource, Conservation and Recovery Act (RCRA) and associated regulation 42 U.S.C. 6901 et seq. and 40 CFR Part 260 et seq.) or the California Hazardous Waste Control Law and associated regulations (Health and Safety Code 25000 et seq. and 22 CCR 66260 et seq.).
  2. References to hazardous material or contaminated material incorporate definitions of hazardous pollutants, hazardous contaminants, hazardous material, hazardous substance, hazardous waste, toxic pollutants and toxic substance applicable in accordance with Federal, State, regional and local statutes, laws, regulations and policies.
- G. **Lead:** Metallic lead, all inorganic lead compounds and organic lead soaps, and excluding all other organic lead compounds.
- H. **Lead-Based Paints:** Paints or coated surfaces that contain an amount of lead equal to, or in excess of, one milligram per square centimeter or more than half of one percent (0.5%) lead by weight.
- I. **Lead-Containing:** Any material, coating, substrate or product that contains metallic lead, all inorganic lead compounds and organic lead soaps, and excluding all other organic lead compounds.
- J. **Lead-Contaminated Dust:** Dusts that contain an amount of lead equal to, or in excess of, forty micrograms per square foot for floor surfaces and two hundred fifty micrograms per square foot for horizontal window surfaces.

- K. **Lead-Contaminated Soil:** Bare soil that contains lead equal to, or in excess of, four hundred parts per million (400 ppm) in children's play areas and one thousand parts per million (1,000 ppm) in all other areas.
- L. **Lead-Related Construction Work:** Means any construction, alteration, painting, demolition, salvage, renovation, repair or maintenance of any residential or public building, including preparation and clean-up, that, by using or disturbing lead-containing material or soil, may result in significant exposure of adults or children to lead.
- M. **Presumed Lead-Based Paint:** Means paint or surface coating affixed to a component in or on a structure, excluding paint or surface coating affixed to a component in or on a residential dwelling constructed on or after January 1, 1978.

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01300 - Submittals. For projects where Section 01300 does not exist, submit one copy each to the District's Asbestos Control Program and to the District's Environmental Consultant, typical.
  - 1. **Site-Specific Hazardous Materials Management Plan (HMMP):** Submit Contractor's HMMP for the District's approval within ten (10) days after the Notice to Proceed, including the following items.
    - a) Overall scope and schedule of all hazardous materials management including but not limited to:
      - (1) Descriptions of all hazardous materials work to be performed or managed, and intended control procedures.
      - (2) Schedule of all hazardous materials work.
      - (3) Description of personal protective equipment and methods as well as intended compliance monitoring.
    - b) Name, phone number, pager number of Contractor's designated Hazardous Materials Supervisor as required in this section's "Quality Control."
    - c) Name, address and phone number of the Contractor's landfill.
- B. Submit Worker Documentation in accordance with the requirements outlined in the Contractor's HMMP, including but not limited to:
  - 1. Certification of the worker's awareness or hazards training by a Certified trainer or as stated on the Contractor's letterhead by the Contractor's Health & Safety Officer or Superintendent.
  - 2. Medical examination and approval for use of respiratory protection, as applicable, including current respirator fit test records.

1.4 PROJECT CONDITIONS

- A. Contractor shall pay all costs associated with the compliance with applicable hazardous materials regulations or requirements incurred by the Contractor or its subcontractors for this Project.
- B. Take precautions necessary to protect the health and safety of construction workers, site visitors, District personnel, outside consultants, public and others from exposure to hazardous materials.
- C. Take precautions necessary to insure all surrounding properties or adjacent occupied areas are protected from any contamination from all hazardous materials from this Project Site.
- D. Review the information in the environmental and hazardous material investigation reports and make such information available to appropriate subcontractors and building occupants.
- E. Obtain and pay for all sampling and profiling analyses required for waste disposal. California DHS-accredited laboratories shall perform analyses.
- F. Minimize generation and migration of hazardous and contaminated materials, waste, dust, fumes and debris.
- G. Prevent contamination or further contamination of any material or area by hazardous or contaminated material, waste, dusts, fumes or debris.
- H. Avoid mixing or concentrating removed, or demolished materials so as to increase the cost of disposing of such materials required to be disposed as hazardous or contaminated wastes.
- I. Contractor shall retain, and the District will not indemnify against, any liability of Contractor resulting from the activities or duties which are the responsibility of Contractor under the terms of the Contract, including but not limited to present or future liability arising from the arrangement of transportation or disposal of any hazardous or contaminated material, whether on or off-site.
- J. Pursuant to 29 CFR 1926.1101, the Contractor shall be deemed to exercise general supervisory authority over the work covered by the standard, even though the General Contractor is not qualified to serve as the asbestos "Competent Person," as defined by the standard. As supervisor of the entire Project, the General Contractor shall ascertain whether any subcontractor is in compliance with the standard and shall require such contractor to come into compliance with the standard when necessary.
- K. Contractors shall schedule and coordinate abatement activities to time limitations indicated in the Contract Documents, allowing work shifts for asbestos, lead-based paint, PCB ballast, and other abatement as indicated in the Abatement Work Plan.
- L. Time limitations for hazardous materials removal work shall be in accordance with Section 00100 -- Instructions to Bidders and submittals approved by the District.

1.5 QUALIFICATIONS

- A. Hazardous Materials Supervisor: Assign a qualified person directly responsible under the Contractor's Superintendent having the necessary training to be knowledgeable in the identification, control, and management of the hazardous materials on-site. The Hazardous Materials Supervisor is responsible for the following:
  - 1. Enforcing safe work and hygiene practices in compliance with the Site-Specific Hazardous Materials Management Plan (HMMP).

2. Advising subcontractors of potential hazards and minimum general requirements of the HMMP.
3. Coordinating subcontractor's work regarding hazardous material procedures and controls.
4. Establishing and maintaining restricted work areas.
5. Requiring proper use of personal protective equipment.
6. Communicating approved modified safety requirements to site personnel.
7. Notification and coordinating signing of waste manifests with the District.

**B. Hazardous Materials Handlers:** Only qualified persons shall engage in hazardous material- related work. Contractor and subcontractor personnel who come into contact with, are exposed to, disturb, operate equipment or otherwise handle hazardous or contaminated material, or debris shall have appropriate hazard communication and required training, personal and medical monitoring, and shall be certified to wear appropriate personal protective equipment as required by the applicable laws and regulations. Special qualifications which may be required depending on the Contractor's means and methods include, but are not limited to, the following:

1. **Asbestos-Related Work Involving Asbestos-Containing Materials exceeding 100 square feet:**
  - a) Valid asbestos handling license issued by the California State Contractors Licensing Board and a valid current Certificate of Registration for Asbestos-Related Work as issued by the California Department of Industrial Relations - Division of Occupational Safety and Health (Cal/OSHA).
  - b) Work shall be completed under the on-site supervision of a Competent Person as defined by OSHA Regulation 29 CFR Part 1926.1101 (8 CCR 1529 in California).
  - c) All abatement workers shall have AHERA training with annual 8-hour refresher training, current medical exams for the use of respiratory protection, and current fit tests of appropriate respirators.
2. **Lead-Hazard Work:** All affected workers shall have lead awareness training, current medical examinations and approval for the use of respiratory protection, and current fit testing of respirators complying with Cal/OSHA regulation 8 CCR 1532.1 when affecting lead paints and lead construction hazards including, but not limited to:
  - a) Demolishing or salvaging structural items where lead or material containing lead are present.
  - b) Removing or encapsulating materials containing lead.
  - c) Constructing, altering, repairing or renovating structures, substrates, or portions thereof, that contains lead or materials containing lead.
  - d) Installing of products containing lead.
  - e) Cleaning-up of lead contamination.

- f) Transporting, disposing, storing, or containing lead or lead-containing materials on the site or other locations where construction and renovation activities are performed.
3. Lead Abatement Work: Only qualified persons with California Department of Health Services' (DHS)-approved Lead Workers training, annual medical examinations and approval for the use of respiratory protection, and current fit testing of respirators under the direct supervision of a DHS approved Lead Abatement Supervisor shall engage in work defined under Cal/OSHA regulation 8 CCR 1532.1 affecting lead-based paints and lead construction hazards, including but not limited to:
- a) Working in an environment where lead exposures exceed 30 micrograms/m<sup>3</sup>.
  - b) Abating lead-based paints, including but not limited to abatement of loose and peeling lead-based paints, demolition and disposal of concrete-encased primed structural steel and/or stripping of lead coatings from structural steel prior to torching or welding.
  - c) As defined under Title 17, California Code of Regulations (CCR), Division 1, Chapter 8 "Accreditation, Certification and Work Practices in Lead-Related Construction," Article 1, Sections 35001 et al, and Article 16, Section 36000 and 36100.
4. PCB Ballast-Related Work: Removal of non-leaking PCB ballasts may be completed by workers with PCB hazard awareness training as verified by the Contractor's Health and Safety Officer or Superintendent. Removal of leaking or damaged PCB ballasts from lighting fixtures shall be completed by a trained worker, wearing protective gloves and following safety procedures as outlined in the HMMP. Hazardous waste shall be handled according to the U. S. Environmental Protection Agency's Standards 40 CFR 761.60 and 761.65 (22 CCR Section 66699(b) in California).
5. Biohazard Work: Work areas contaminated with fecal matter and human excretions, along with needles and syringes and other materials potentially contaminated with infectious bloodborne pathogens or other biohazards shall comply with the health and safety requirements as approved in a Site-Specific Hazardous Materials Management Plan, approved and signed by the Contractor's Certified Industrial Hygienist.
- C. Hazardous Materials Haulers:
- 1. Possess during the hauling of hazardous material, applicable federal, state, and local vehicle insurance requirements, valid driver's license, vehicle registration and licenses, and a current Class 1 Certification of Compliance from the California Highway Patrol affixed to each vehicle or container.
  - 2. Possess a Hazardous Substance Removal Certification granted by the State of California Department of Toxic Substances Control (510-540-3802) and other required certifications and insurance.
  - 3. Contractor shall be responsible for informing drivers of hauling vehicles about:
    - a) The nature of the material hauled.
    - b) Any recommended or required routes to and from the site.

- c) Applicable City Street use regulations and requirements, and State of California Department of Transportation (Caltrans) codes, regulations and requirements.
- d) The District's requirements for proper handling and transportation of hazardous waste.
- e) The legal maximum loads for each vehicle.

#### 1.6 REGULATORY REQUIREMENTS

- A. Hazardous and contaminated materials and hazardous waste shall be handled according to applicable laws and regulations in effect at the time of disturbance; transport or disposal of said hazardous materials or waste and requirements of the Contract Documents. In the event of conflict, the more stringent requirement shall apply.
- B. The District is the generator, as defined in 22 CCR Section 66260.10 and 40 CFR Part 261, of any hazardous waste, and will be responsible for that hazardous waste to the extent required by law.
- C. Contractor is alerted to and shall familiarize itself to the following laws and regulations regarding the generation, management, characterization and disposal of hazardous waste:
  - 1. Resources Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq. and regulations 40 CFR Part 260 et seq.
  - 2. California Health and Safety Code, Division 20 and regulations, and 22 CCR Section 66000 et seq.
  - 3. For asbestos hazards: Comply with the applicable requirements of the Cal/OSHA Construction Asbestos Standard, 8 CCR Section 1529, and BAAQMD Regulation 11, Rule 2.
  - 4. For lead hazards and abatement: Comply with the applicable requirements of the Cal/OSHA Lead in Construction Standard, 8 CCR Section 1532.1; Cal/EPA Regulation 22 CCR Section 66000, et seq.; California Department of Health Services (DHS) Regulation 17 CCR 35001, et seq., and San Francisco Building Code, Chapter 36, "Work Practices for Exterior Lead-Based Paint".

#### 1.7 HAZARDOUS MATERIALS USED TO PERFORM THE WORK

- A. General: Minimize the use of hazardous materials to perform the work. Where materials which contain hazardous substances or mixtures are used to perform the work, material usage shall be in strict adherence to Cal/OSHA's safety requirements and the manufacturer's warnings and application instructions listed on the Material Safety Data Sheet provided by the product manufacturer and on the product container label.
  - 1. Contractor will be responsible for coordinating the exchange of MSDS or other hazard communication information between subcontractors at the site.
  - 2. Contractor will notify the District when a specific product or equipment, or their intended usage, may be unsafe prior to ordering the product or equipment or prior to the product or equipment being incorporated in the Work.
- B. Prohibited Material: The following materials and chemicals are specifically prohibited from use on this project unless otherwise accepted in writing by the District.

1. Material with a stated ACGIH threshold limit value of less than 25 parts per million.
2. Ethylene glycol monomethyl ether.
3. Dipropylene glycol methyl ether.
4. Ethylene glycol.
5. Formaldehyde.
6. Methylene chloride.
7. Isocyanates.
8. Chemicals with a flash point of less than 140 degrees Fahrenheit.

## PART 2 - PRODUCTS

### 2.1 HAZARDOUS MATERIAL CONTROLS AND EQUIPMENT

- A. Protective Devices: Temporary wash stations or showers, disposable clothing, respirators, gloves, hard hats, and other required items. Respirators shall protect against appropriate dusts, fumes and mists as approved by the National Institute for Occupational Safety and Health (NIOSH) under provisions of 30 CFR Part 11.
- B. Waste Receptacles: Conform to federal and State regulations, with 6-mil minimum thickness waste bags.
- C. Polyethylene Sheeting and Dust Barriers:
  1. Polyethylene sheeting shall be flame-retardant and approved and listed by the State Fire Marshal in accordance with Section 13121 and/or 13144.1 of the California Health and Safety Code.
    - a) Thickness and Size: 6-mil thick minimum, unless otherwise specified, sized to minimize the frequency of joints.
    - b) Flammability: Comply with NFPA Standard 701 with a flame spread rating of no greater than 5 and a smoke development rating of no more than 70 when tested in accordance with ASTM procedures.
- D. HEPA Vacuums and Negative Pressure Units (NPU) used for clean up of materials and detail cleaning shall be HEPA-filtered.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Notify the Contractor's Hazardous Material Supervisor of suspect conditions for testing by the District.
- B. Promptly notify the District of differing conditions. Please note that the Contract Documents may restrict access to some Crawlspace and plenums where known asbestos-containing thermal system insulation or damaged, friable surfacing materials exist. Access to these restricted areas will



require the use of respiratory protection; full coveralls and decontamination procedures if accessed by non-abatement trades unless a negative exposure assessment is submitted to show that lower standard of protection are acceptable.

### 3.2 ASBESTOS HAZARD CONTROL PROCEDURES

#### A. Prohibited Activities not specified in this Section:

1. Asbestos-containing materials shall not be disturbed by cutting, sawing, grinding, pulverizing, crumbling, breaking, or otherwise rendered friable or airborne unless these activities are conducted under the requirements of all applicable regulations and guidelines or controlled renovation procedures as outlined in the Contract Documents.
2. Work exceeding 100-sq. ft. or 100 linear feet of asbestos-containing materials shall be completed by a qualified Asbestos Abatement Contractor per Cal/OSHA regulation 8 CCR 1529. All work affecting friable asbestos-containing materials shall be completed in compliance with Cal/OSHA Work Class I or III procedures, as applicable. Class III work may be completed by workers with EPA Asbestos Operations and Maintenance training and annual refresher training, minimum. Refer to Section 02090 - Hazardous Materials Abatement and Control.

#### B. Controlled Renovation Procedures for Installation of Anchors and Minor Disturbances to Asbestos- Containing Material under 100 SF or 100 LF, except thermal system insulation or surfacing materials (including but not limited to vinyl floor tiles, carpet or tile mastics, transite board, sheetrock wallboard, ceiling tile mastics):

1. Minor work affecting non-friable materials, such as drilling molly anchors into wallboard or seismically bracing equipment through asbestos-containing vinyl floor tiles, may be completed by construction workers or maintenance personnel following procedures under the General Industry Asbestos Standards, 8 CCR 5208. Such workers shall have initial training regarding the hazards of the operation, control procedures, and hands-on training on anchoring procedures. Workers with over 30 days of exposure to such activities, exceeding 1-hour duration per day, shall comply with Cal/OSHA's medical surveillance requirements. Protective clothing, including full body coveralls and half-facepiece HEPA-filtered respirators shall be worn by all workers within the regulated controlled renovation zone unless a negative exposure assessment has been produced to show lower levels of protection are acceptable.
2. Demarcate the area of exposure to minimize traffic within the area and to protect persons outside the area from airborne asbestos exposures, even if a negative exposure assessment has been produced.
3. The following materials are classified as not "surfacing" materials for controlled renovation purposes involving anchoring or minor disturbances:
  - a) Wall and ceiling troweled-on plasters over metal or wooden lath or buttonboard, except acoustical plasters or decorative plasters with an appearance like acoustical plaster.
  - b) Stucco.
  - c) Paint that has been sprayed-on or otherwise applied to a wall, ceiling, eave, etc.

- d) Sheetrock wall and ceiling board and joint compounds, including joint compounds applied for texturing purposes, which are not otherwise classified as acoustical plasters.
  - e) Cement or plaster skimcoats on concrete or sheetrock with a smooth finish.
  - f) Floor leveling compounds.
  - g) Mastics troweled-on concrete floor surfaces to adhere resilient tiles.
4. Assemble equipment and supplies, including but not limited to a Hudson sprayer, an HEPA- filtered vacuum, polyethylene drop cloths and wetted sponges.
  5. Install a drop cloth below the area to be disturbed and shoot or drill the anchor through the wetted sponge or cut the material through a wetted sponge, as applicable. HEPA vacuum the area following all work and place the sponge and debris into a sealed plastic disposal bag. Do not use these procedures on asbestos-containing thermal system insulation (TSI) or asbestos-containing surfacing materials, such as asbestos fireproofing or acoustical sprayed-on plaster finishes.
  6. Immediately clean up all debris dislodged from coring or drilling through asbestos and trace asbestos substrates using a wetted sponge and HEPA vacuum. Contamination of the site by use of improper procedures will require extensive clean-up and clearance air sampling by the District, at the Contractor's expense.
  7. Vinyl Floor Tiles: Cordon off the room or area and remove the floor tiles before drilling through the concrete or wooden substrate, where feasible, using water to dislodge the tiles. Where tiles cannot be removed in advance of coring, saturate the tile with shave cream and core through the tiles, frequently wiping up all chips and debris and disposing as Category 1 non-friable waste. Continue using wet methods and reapply shaving cream as a barrier to prevent airborne releases. Wet wipe with a clean sponge and HEPA vacuum the area upon completion of work. Do not let cores and intact ACM debris to fall into the ceiling plenum or crawl space below.
  8. Carpet Mastics: Cordon off the room or area and cutout the carpeting and mastics using a carpet knife, saturating the carpet with water to prevent airborne asbestos fiber releases. Remove excess mastics using a mastic remover with a flash point greater than 140 deg. F., as approved by the District. Dispose of the carpet segment and mastics as Category 1 non-friable waste. Wet wipe and HEPA vacuum the area following completion of the controlled renovation procedures.
  9. Vinyl Floor Tile Mastics: Cordon off the room or area and remove the mastics using a mastic remover with a flash point greater than 140 deg. F., as approved by District. Dispose of the mastic and rags as Category 1 non-friable waste. Wet wipe and HEPA vacuum the area following completion of the controlled renovation procedures.
  10. Transite Board and Mastics: Cordon off the room or area and remove the board intact, where feasible, following installation of drop cloths below. If removal is not feasible, drill through the board using the shaving cream methods described for Vinyl Floor Tiles above. Dispose of transite debris as Category 2 non-friable waste Wet wipe and HEPA vacuum the area following completion of the controlled renovation procedures
  11. Sheetrock Wall or Ceiling Board: Shoot or drill anchors through a wetted sponge, where feasible. Cordon off the room or area and cut holes for receptacles or other devices using

drop cloths on the ground and wet methods. Remove the sheetrock avoiding the joint compounds, where feasible. Continually wet the controlled renovation area during the process and wet wipe and HEPA vacuum the area following completion of the controlled renovation procedures. Dispose of the sheetrock and joint compounds as "trace" non-hazardous waste.

12. **Thin-Layered Asbestos-Containing Paints:** Shoot or drill anchors through a wetted sponge, where feasible. Cordon off the room or area and core using drop cloths on the ground and wet methods. Continually wet the controlled renovation area during the process and wet wipe and HEPA vacuum the area following completion of the controlled renovation procedures. Dispose of the paints as Category 1 or 2 non-friable waste as determined by the substrate's composition.
13. **Other Non-Friable Materials:** Complete controlled renovation procedures in compliance with Cal/OSHA's Work Class 2 procedures per 8 CCR 1529.
14. **Work exceeding 100 SF or 100 LF or affecting friable asbestos surfacing materials or thermal system insulation shall be completed by a qualified Asbestos Abatement Contractor.**

**C. Controlled procedures for installation of anchors or coring through friable asbestos materials, including but not limited to sprayed-on or troweled-on acoustical plasters, structural fireproofing, and linoleum backing:**

1. **Avoid contact with friable ACM where practical. Anchor to non-ACM materials where feasible.**
2. **Install drop cloths on the ground and use a glovebag or mini-containment constructed of 6-mil polyethylene sheeting to contain work affecting friable materials.**
3. **Wet the ACM with water and remove limited material as required for installations. Immediately clean up all debris and seal the waste in a double 6-mil disposal bag for disposal as asbestos waste.**
4. **Clean up the immediate area using wet methods and a HEPA vacuum. Dispose of friable plasters, linoleum backing, fireproofing and thermal system insulation as friable asbestos waste.**
5. **Fireproofing and Textured Acoustical Plasters:** Cordon off the area and set-up negative pressurization of the controlled renovation activity using glovebag or mini-containment methods. Do not drill or core openly through friable ACM; a Certified Asbestos Worker only under Cal/OSHA Work Class I or III procedures, as applicable shall complete such work. Wet the materials throughout the controlled renovations. Do not allow ACM on cores to fall into the ceiling plenum or Crawl Space below. Following the controlled renovation activities, clean up the mini-containment using wet methods and a HEPA vacuum. Gooseneck and dispose of the glovebags, where applicable, within a double waste bag.
6. **Thermal System Insulation (TSI):** Avoid disturbing intact pipe and fitting lagging. Work within posted Crawl Spaces or plenums will require respiratory protection for all workers entering such zones, and use of personnel and equipment decontamination procedures in compliance with 8 CCR 1529. Avoid contacting TSI while installing conduit, etc. Use glovebag or mini-containment procedures for controlled renovation work as described

above and in compliance with Cal/OSHA's Work Class III procedures per 8 CCR 1529. Dispose of lagging as friable asbestos waste.

7. Linoleum Backing: Cordon off the room and work area and cutout the linoleum, using a carpet knife prior to coring. Wet the backing using water and shave cream and remove the asbestos containing backing intact. Dispose of debris as friable asbestos waste. Wet wipe and HEPA vacuum the area of the controlled renovations for final clearance. Do not allow linoleum on cores to fall into the ceiling plenum or Crawl Space below, as applicable.
  8. Other Friable Asbestos: Remove materials in compliance with Cal/OSHA Work Class 3 procedures per 8 CCR 1529.
  9. Avoid contact or disturbance with intact asbestos-containing pipe lagging within concealed wall and plenum areas as well as within all accessible areas. Notify the Contractor's Hazardous Materials Supervisor (HMS) of the presence of damaged ACM materials, if accidentally contacted.
- D. Demolition of non-ACM obstructing known intact ACM.
1. Remove non-contaminated and non-asbestos materials for access using standard dust control procedures as required for painted assemblies, etc.
  2. Minimize disturbances to substrates concealing friable or damaged asbestos-containing materials, such as laid-in ceiling tiles concealing asbestos-containing fireproofing, demolition of non-ACM partitions which may destabilize sprayed-on asbestos-containing acoustical finishes, etc. Qualified workers shall complete Work impacting asbestos-containing materials only.
  3. Remove and dispose of non-contaminated waste, where feasible. Alert the Contractor's Hazardous Material Supervisor of contaminated conditions for proper removal and disposal and cordon off the affected areas where contamination is encountered. Do not dry sweep affected wastes and debris.
- E. Unexpected exposure to known or suspect intact ACM.
1. Where asbestos materials are intact, such as intact pipe lagging, proceed to remove the affected substrate and immediately label the asbestos material with a "caution" sign to prevent unintentional disturbances.
  2. Where asbestos materials uncovered are damaged or unknown asbestos contaminated conditions are encountered, discontinue work in the immediate contaminated area, shutdown the areas HVAC system, if not already disengaged, and alert the Contractor's Hazardous Materials Supervisor of the conditions for proper removal and disposal.
- F. Unexpected release of asbestos into the environment.
1. Cordon off the immediate area (10 to 20 ft. radius average minimum), and shutdown the area's HVAC system (if applicable).
  2. Notify the Contractor's Hazardous Materials Supervisor for proper removal and disposal using wet methods and HEPA-filtered vacuums. Clean-up work shall be completed under the directions of a Competent Person with 16-hour minimum EPA Operations and

Maintenance asbestos training and by workers with 2-hours asbestos awareness training minimum unless exposures exceed the permissible exposure limit of 0.1 fibers/cc.

3. Decontaminate or dispose of friable waste in double 6-mil thick goosenecked labeled waste bags for manifesting and disposal.

G. Procedures for reporting Suspect Asbestos Containing Materials.

1. Advise the Contractor's Hazardous Materials Supervisor (HMS) of suspect conditions for testing by the District. Do not remove or disturb suspect materials until tested and approved.

H. Perimeter Action Level: Failure of the Contractor to follow wet methods, immediate clean-up, and fiber control procedures as outlined herein resulting in exceedances to the Perimeter Action Level of 0.01 fibers/cc by Phase Contrast Microscopy at the perimeter of the regulated area or within adjoining occupied zones as measured by the District shall result in clean-up and analysis of the samples by Transmission Electron Microscopy (TEM) at the Contractor's expense.

3.3 LEAD HAZARD CONTROL PROCEDURES

A. Prohibited Activities Not Specified in this Section.

1. Lead-related construction work affecting lead-based paints or lead-contaminated soils as defined under DHS. Refer to Section 02090 - Hazardous Materials Abatement and Control.

B. Prohibited Activities:

1. Open flame burning or torching of lead-based paints or presumed lead-based paints, including use of propane-fueled heat grids.
2. Scraping, sanding, or grinding of lead-based paints or presumed lead-based paints without proper containment or a HEPA local vacuum exhaust tool.
3. Uncontained hydroblasting or high-pressure washing of lead-based paints or presumed lead-based paints.
4. Abrasive blasting or sandblasting or lead-based paints or presumed lead-based paints without proper containment or a HEPA local vacuum exhaust or dust collector.
5. Heat guns operating above 1,100 degrees Fahrenheit.
6. Dry sweeping of debris and removal of surface coatings by torch or flame.
7. Disturbance of lead-painted or lead-coated surfaces scheduled to remain within the structure(s) by cutting, sawing, grinding, or other construction operations without adequate dust controls.
8. Eating, smoking and drinking in or in the proximity of lead hazard operations.
9. Removal of lead-containing coatings with a torch or flame, except as a result of unavoidable welding or torching of back-to-back structural elements that cannot be adequately previously abated without affecting the integrity of the structure.

10. Steam cleaning and compressed air removal for lead-based paints or presumed lead-based paints.
  11. Lead hazard contamination beyond the containment barriers.
- C. Handling:
1. For existing lead-painted or lead-coated surfaces, which are indicated to remain, advise workers of the potential hazards.
  2. For areas where handling or disturbance of loose or peeling paints are required, verify that the paint that remains on interior walls, ceilings, and other surfaces in areas of active work, as applicable, is adhered to the substrate sufficiently to support eventual repainting. Paints that peel or loosen during wetting shall be handled and removed as specified in this Section.
  3. Clean debris and surfaces with HEPA-filtered vacuums and wet methods. Dry sweeping is not permitted.
  4. Show where existing lead-painted or lead-coated surfaces are scheduled to remain, workers shall be advised of the potential hazard of these materials with all work completed by qualified workers.
  5. Shoveling, wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and are found to be ineffective.
  6. Loose debris and scraped materials with a lead content greater than 1.0 mg/m<sup>3</sup> or 0.5% by weight shall be treated as hazardous waste. Construction waste coated with intact lead paints or glazing may be disposed as construction debris in accordance with Cal/EPA requirements.
  7. Workers shall decontaminate themselves and appropriate equipment prior to eating, drinking and smoking.
- D. Recycling: Items to be recycled, such as but not limited to lead roof flashings or lead sheeting, shall be accompanied with a bill of lading and a memorandum from the recycler acknowledging that lead may be present and work activities and disposal will comply with applicable regulations. Submit in accordance with procedures of Section 01300 - Submittals.
- E. Cleaning: Provide daily "housekeeping" on the project site including, but limited to:
1. Clean up of loose debris and contamination daily prior to leaving the job site, or covering with tarpaulins to prevent unwanted disturbances.
  2. Daily clean up of traffic areas, using HEPA vacuum and/or wet methods.
  3. Repair of torn or damaged protective barriers.
- F. Field Quality Control:
1. Maintain airborne dust levels within the regulated construction zone and throughout the construction site below the Cal/OSHA Project Action Level of 30 micrograms per cubic meter. Levels above the Project Action Level may require an upgrade in respiratory

protection for all affected workers, as well as amended work practices and clean up of affected areas at no additional cost to the District.

2. Maintain airborne lead dust levels at the site's property line or adjoining occupied non-construction areas below the National Ambient Air Quality Standard (NAAQS) of 1.5 micrograms per cubic meter. Exceeding this level may require further isolation of the work areas; amended work practices, and clean up of affected areas at no additional cost to the District.
3. All costs for additional sampling of contaminated areas, including the District's time and expenses for handling, shipping, and analysis charges, required to show background levels below the lead standards specified within these Contract Documents shall be at the Contractor's expense.
4. Failure by the Contractor to contain construction dust and debris and exceedances of the NAAQS standard of 1.5 micrograms/cubic meter outside the construction boundaries within adjoining occupied areas of the school as measured by District will require detailed clean-up and additional clearance wipe sampling at the Contractor's expense.

G. Project Hygiene Facilities: Provide project hygiene wash-up facilities including:

1. A 2-stage decontamination assembly, minimum, including an equipment and contiguous clean room with a bucket wash-up facility positioned outside all regulated work areas. The Equipment Room shall contain labeled bags for storing contaminated protective clothing and equipment. The Clean Room shall contain lockers and containers for storing employee street clothes and personal items, including a suitable supply of potable water to permit each employee to wash their hair, hands, forearms, face and neck. Provide 1 wash station minimum for every 10 workers.
2. Sufficient sets of protective full-body clothing to be worn in the designated work areas and whenever a potential airborne lead hazard exists. Clothing shall include, but not be limited to, full-body coveralls, headgear, eye protection, and gloves. Disposable-type protective clothing is acceptable.

H. General Dust Controls: Provide general dust control including:

1. Hudson or airless sprayers for wetting-down construction materials and debris throughout demolition or scraping phases.
2. Fire-retardant polyethylene dust barriers.
3. HEPA-filtered vacuums for clean up of loose debris and suspect contamination.
4. Polyethylene drop cloths for protection of floors, furnishings, landscaping, etc., as applicable, to prevent contamination or damage to building surfaces, equipment or finishes.

I. Warnings and Signs: Provide the following minimum signs and posting requirements:

1. Cordon off the proximity (within approximately 20-ft.) of regulated work areas using construction tape, polyethylene dust barriers, or other appropriate means. Persons entering the regulated "cordoned" work areas shall wear appropriate respiratory protection and full-body coveralls.

2. Affix warning signs at the entry and approaches to the regulated areas.
3. Lockout electrical and HVAC equipment within the regulated area, as necessary.

#### 3.4 PCB BALLAST PROCEDURES

- A. Identifying PCB ballasts: All ballasts not specifically labeled “non-PCB” or “PCB free” shall be considered PCB-containing.
- B. Prohibited Activities Not Specified in this Section: Removal of ballasts from fixtures with hazard awareness training as indicated by the Contractor’s Hazardous Materials Supervisor.
- C. Procedures for Removal of Non-Leaking Ballasts: Non-leaking ballasts shall be removed from their fixtures and packed in kitty litter-lined steel drums for hazardous waste disposal. Workers removing ballasts may require protective gloves as a precaution against unforeseen leaks or damage.
- D. Procedure for Handling Leaking PCB Ballasts:
  1. Workers removing ballasts from fixtures shall wear protective clothing and nitrile or neoprene gloves.
  2. Leaking ballasts pose a health and safety hazard and shall therefore be removed by trained workers only (Cal/OSHA 40-hour Hazwoper training is recommended).
  3. Wipe down the fixture showing signs of overheated or leaking ballasts with paper towels after the unit has been cooled to room temperature.
  4. Follow with additional wiping with an organic solvent, e.g., mineral spirits or isopropyl alcohol.
  5. Place leaking ballasts and rags into a plastic bag, which is tied-off and secured.
  6. Pack the ballasts in steel drums for hazardous waste disposal.
- E. Procedure for Disposal of PCB ballasts:
  1. Pack PCB ballasts and bagged leaking ballasts and rags into a steel drum, sealed, labeled, and transported to an approved incinerator following required manifest procedures as specified in this Section.
  2. Absorbent material, such as kitty litter, shall be used as a cushion and absorbent within the drums.
  3. Do not exceed the incinerator’s drum loading requirements, typically 350 to 500 lbs. per drum.
  4. Transport hazardous waste for disposal per the requirements under 22 CCR Section 66268.110.
  5. Dispose as a hazardous waste per EPA Regulation 40 CFR 761.00 and 761.65 and Cal/EPA Regulation 22 CCR Section 66508.



3.5 MERCURY-CONTAINING LAMP REMOVAL PROCEDURES

- A. Prohibited Activities Not Specified in this Section: Disposal of quantities over 25 lamps per day as non-hazardous waste.
- B. Handling and Disposal of Lamps:
  - 1. Spent fluorescent and other mercury-containing lamps shall be considered a hazardous waste by the California Department of Health Services (DHS; 22 CCR Section 66699(b)).
  - 2. Ship lamps exceeding 25 units per site per day to a commercial recycler where they are to be crushed and the mercury reclaimed.
  - 3. Comply with DOT requirements for manifests, with evidence of proper disposal provided to the District, including a log of shipping dates and quantities.
  - 4. Load into secured cardboard boxes for shipment to prevent unnecessary breakage.
  - 5. In the event of lamp breakage, clean-up broken glass and debris immediately, using an HEPA-filtered vacuum for final clean up.

3.6 WASTE DISPOSAL AND MANIFESTING PROCEDURES

- A. Hazardous Waste Disposal:
  - 1. Packing, labeling, transporting, and disposing of hazardous waste shall comply with Cal/EPA regulations under 22 CCR, including completion of the Uniform Hazardous Waste Manifest Form (DTSC 8022A and EPA 8700-22).
  - 2. A "Waste Manifest" shall be completed for disposal of hazardous waste. The transporter shall possess a valid EPA Transporter I.D. number. The Contractor's Hazardous Materials Supervisor shall notify the District's Project Manager at least 48 hours prior to the time that the Manifest is required to be signed by the District.
  - 3. Applicable information to be included in the "Waste Manifest" includes the following:
    - a) EPA Generator I.D. Number: Verify with the Project Manager.
    - b) Generator's Name and Address & Tax I.D. Number: Verify with the District's Project Manager.
- B. Disposal of Contaminated and Other Materials:
  - 1. Disposal of intact lead-coated architectural or structural elements may occur as non-hazardous waste in accordance with Cal/EPA's and the Department of Toxic Substances Control's requirements.
  - 2. Loose and peeling lead-based paints and miscellaneous lead debris shall be treated as hazardous waste, unless otherwise indicated. Lead wastes shall be profiled by the Contractor by means of standard digestion and extraction tests (TCLP, WET and SW846), as appropriate, and shall be manifested and properly disposed.

3.7 FINAL PROJECT CLEAN-UP AND REOCCUPANCY CLEARANCE CRITERIA PROCEDURES

A. Asbestos: Asbestos-containing materials will be abated with clearance by visual inspection and phase contrast microscopy (PCM) or transmission electron microscopy (TEM), as applicable, as outlined under the "Asbestos Abatement" or "Hazardous Materials Abatement and Control" Sections, as applicable.

B. Lead Hazards:

1. Visual Inspection: Final clean-up prior to the District's reoccupancy or Substantial Completion shall include wet wiping using a TSP solution and HEPA vacuuming all suspect dust and debris for final visual inspection or wipe dust sampling as outlined under the "Lead Hazard" or "Hazardous Materials Abatement and Control" Sections, as applicable.

2. Final Reoccupancy Cleaning:

a) Final clean up prior to District's reoccupancy shall include wet wiping using a TSP solution and HEPA vacuuming all suspect dust and debris areas.

3. Final Reoccupancy Clearance:

a) Following the final clean-up, the District may visually inspect for any loose dust or debris, followed by wipe sampling of the settled dust to document surface lead levels below the specified clearance levels. Samples will be collected using commercial wipes moistened with a non-alcohol wetting agent. A one-foot square area will be wiped in an "S" pattern, folding the wipe inward and placing it in a labeled sample container. The wipe sample will be analyzed by flame atomic absorption using NIST Standard 1578.

b) The Contractor shall reclean the zone when surface concentrations exceed the following "EPA Dust Clearance Standards:"

40 micrograms/SF	for floors
250 micrograms/SF	for interior window sills and stools
800 micrograms/SF	for exterior window sills and interior window wells
800 micrograms/SF	for concrete or other rough surfaces
800 micrograms/SF	for attic and non-public areas

c) All Kindergarten through 2nd Grade Rooms affected by demolition or scraping of painted surfaces shall be cleared by wipe sampling.

d) Areas that do not comply with the "Final Reoccupancy Clearance Criteria" shall continue to be cleaned by and at the Contractor's expense until the specified criteria is achieved, as evidenced by results of inspections as previously specified.

END OF SECTION

## **SFUSD-Asbestos Control Program (ACP)**

### **Guidance for Incidental Contact with Asbestos and Lead Containing Materials - Destructive Testing Work**

The following requirements and procedures shall be incorporated into contracts:

1. All wall penetrations are to be treated as drilling through (a) asbestos containing materials, and (b) lead-based or containing paints.
2. Work can be performed by either a hazardous materials (lead and asbestos) abatement contractor or a contractor with the appropriate training as listed below.
3. Training. Personnel (a) performing drilling,(b) pulling wiring through, and/or (c) entering crawlspaces designated as being contaminated shall at the minimum have:
  - a. 16 hours asbestos "operations and maintenance" training, and
  - b. lead hazard awareness training.

Note: Higher level trained personnel (i.e. 40 hour asbestos abatement workers, CA Dept of Health Services lead workers) may also be used to perform the specified work.

4. Work shall be performed with a High Efficiency Particulate Air (HEPA) filter equipped vacuum cleaner available, as well as a supply of plastic sheeting, sponges, plastic waste bags, water, etc.
5. Plastic sheeting shall be laid down immediately (i.e. a 5 foot square) beneath the location where a hole will be drilled. The area shall be closed off from foot traffic using barrier tape.
6. Holes shall be drilled through a wet sponge.
7. Any dust generated shall be immediately vacuumed or wiped up using wet sponges.
8. No clearance air samples or wipes will be collected. Areas are subject to visual inspection with any observable dust or debris being considered to be lead and asbestos contamination and subject to re-vacuuming and wiping at no extra charge.