

SECTION 070020
ASBESTOS REMOVAL (S-1)

SCOPE: This specification shall govern all work required for the removal and disposal of asbestos required to complete the project. See Lab Report in Appendix for asbestos that has been identified.

APPLICABLE DOCUMENTS AND SAFETY COMPLIANCE: The removal and disposal of asbestos shall be done in strict accordance with all Federal, State and Local requirements as applicable during the time of construction. Requirements to be observed include, but are not limited to, the following:

- a. Title 29, code of Federal Regulations, Sections 1910.1001, 1923.58 and 1910.1101 OSHA, U.S. Department of Labor.
- b. Title 40, Code of Federal Regulations, Part 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants, EPA.
- c. Copies of the EPA Guidelines "Guidance for Controlling Asbestos Containing Materials in Buildings", June, 1985, shall be available at all times on the job site.

RESPONSIBILITY FOR DAMAGE CLAIMS:

The Contractor shall provide insurance in accordance with B-6-11 of the General Provisions of these contract documents. Said insurance shall be non-exclusive to asbestos.

QUALIFICATIONS OF CONTRACTOR:

All bidders shall submit a resume. The resume may include as much evidence as deemed necessary to establish qualifications for asbestos related work. The resume shall be submitted with this proposal. Non-submission of resume with proposal shall be considered grounds for rejection of bid.

DEFINITIONS:

Amended Water: Water containing a wetting agent or surfactant.

Asbestos: The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

Asbestos Control Area: An area where asbestos removal operations are performed which is isolated by physical boundaries to prevent the spread of asbestos dust, fibers or debris.

Asbestos Fibers: This expression refers to asbestos fibers having an aspect ratio of 3:1 and longer than 5 micrometers.

Ceiling Concentration: An exposure of airborne concentrations of asbestos fibers at any time in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air.

Competent Person: One who is capable of identifying existing asbestos, tremolite, anthophyllite, of actinolite hazards in the workplace and who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f). The duties of the competent person include at least the following: establishing the negative-pressure enclosure, ensuring its integrity, and controlling entry to and exit from the enclosure; supervising any employee exposure monitoring required by the standard; ensuring that all employees working within such an enclosure wear the appropriate

personal protective equipment, are trained in the use of appropriate methods exposure control, and use the hygiene facilities and decontamination procedures specified in the standard; and ensuring that engineering controls in use are in proper operating condition and are functioning properly.

Area Monitoring: Sampling of asbestos fiber concentrations within the asbestos control area and outside the asbestos control area which is representative of the airborne concentrations of asbestos fibers which may reach the breathing zone.

Friable Asbestos Material: Material that contains more than one percent asbestos by weight and that can be crumbled, pulverized or reduced to power by hand pressure when dry.

HEPA Filter Equipment: High efficiency particulate absolute filtered vacuuming equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns or larger.

Nonfriable Asbestos Material: Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not release fibers in excess of the asbestos control limit during any appropriate use, handling, demolition, storage, transportation, processing or disposal.

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

Time Weighted Average (TWA): Three samples are required to establish the 8-hour time weighted average. The TWA is an 8-hour time weighted average airborne concentration of fibers, longer than 5 micrometers, per cubic centimeter of air.

Asbestos Permissible Exposure Limit: 0.2 fibers (longer than 5 micrometers) per cubic centimeter as an 8-hour time weighted average.

TITLE TO MATERIALS: All materials resulting from demolition work, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified herein.

MEDICAL REQUIREMENTS: 29 CFR 1910.1001.

Medical Examinations: Before exposure to airborne asbestos fibers, provide workers with a comprehensive medical examination as required by 29 CFR 1910.1001. This examination is not required if adequate records show the employee has been examined as required by 29 CFR 1910.1001 requirements within the past year. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos fibers and within 30 calendar days before or after the termination of employment in such occupation. Specifically identify x-ray films of asbestos workers to the consulting radiologist and mark medical record jackets with the word "ASBESTOS".

Medical Records: Maintain complete and accurate records of employees' medical examinations for a period of 40 years after termination of employment and make records of the required medical examinations available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health, the Director of The National Institute for Occupational Safety and Health (NIOSH), authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

RESPIRATOR PROGRAM: Establish a respirator program as required by ANSI Z88.2

AND 29 CFR 1910.134.

INDUSTRIAL HYGIENIST: Conduct monitoring and training under the direction of an industrial hygienist certified by the American Board of Industrial Hygiene.

POST BID SUBMITTALS: Prior to issuance of work order, the contractor shall provide the following submittals. These submittals shall be reviewed at the pre-construction conference and shall include the following:

Notification to Public Agencies: The contractor shall send written notice of the proposed asbestos related work to all applicable public agencies with a copy to the Engineer. The notice shall advise said agencies of the date of the pre-construction conference in addition to other relevant information. The pre-construction conference will be scheduled by the Construction Engineer (880-3058) of the City. Agencies to be notified include the following:

Environmental Protection Agency
1201 Elm Street
Dallas, TX 75270

Texas Air Pollution Control
5602 Old Brownsville Road
Corpus Christi, TX 78415

City-County Health Department
1702 Horne Road
Corpus Christi, TX 78416

Building Official
City of Corpus Christi
P.O. Box 9277
Corpus Christi, TX 78469

Permits and Arrangements: The Contractor shall submit proof that all required permits, disposal sites, transport and other necessary arrangements for the hazardous waste have been procured.

Education of Workers: The Contractor shall submit documentation (certificates signed by each employee) indicating that each employee to be associated with the asbestos related work has had current instructions on the hazards of asbestos and that each demonstrated proficiency in all aspects of work procedures and protective measures.

Medical Records: The Contractor shall submit documentation that each employee has had a current physical examination including name, address, and phone number of the physician conducting said examination.

Certification of Equipment: The Contractor shall submit manufacturer's certification that vacuums, ventilation equipment and other equipment required to contain airborne asbestos fibers conform to ANSI Z9.2

Environmental Protection Plan: The Contractor shall submit a detailed plan of work procedures to be used in the removal and demolition of materials containing asbestos. The plan shall be prepared, signed and sealed, including certification number and date, by the certified industrial hygienist or consulting professional engineer. Such a plan shall include location of asbestos control areas, change rooms, layout of change room, inter face of trades, involved in the demolition, sequencing of asbestos related work, disposal plan, type of wetting agent and asbestos sealer to be used, air monitoring and a detailed description of

the method to be employed in order to control pollution and provide a safe work area. This plan shall be reviewed prior the start of any asbestos work.

Testing Laboratory: The Contractor shall submit the name, address and telephone number of the testing laboratory selected for the monitoring, testing, and reporting of airborne concentrations of asbestos fibers along with certification that persons counting the samples have been judged proficient by successful participation within the last year in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing (PAT) Program.

Industrial Hygienist or Consulting Engineer: Submit the name, address and telephone number of the industrial hygienist selected to prepare asbestos plan, direct monitoring and training, and a certification that the Industrial Hygienist is certified by the American Board of Industrial Hygiene, or State Board of Registration for Professional Engineers, including certification number and date.

SUBMITTALS FOR ENVIRONMENTAL MONITORING:

Monitoring Results: Fiber counting shall be completed and results reviewed by the industrial hygienist within 16 hours. The industrial hygienist shall notify the Contractor and the Engineer immediately of any exposures to asbestos fibers in excess of the acceptable limits. Submit monitoring results to the Engineer within three working days, signed by the testing laboratory employee performing air monitoring, and employee that tested, and the certified industrial hygienist.

Monitoring of Nonfriable Materials: A copy of all monitoring reports of nonfriable asbestos, including a description of the work procedure at the time of air monitoring, shall be submitted to the Engineer prior to completion of the project.

Notification: Notify the Engineer three working days prior to the start of asbestos work.

Disposal Manifest: The Contractor shall submit written evidence that the landfill for disposal is approved for asbestos disposal by the ESEPA and state or local regulatory agency(s). Submit detailed delivery tickets, prepared, signed and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill, within three working days after delivery.

Local Exhaust System: The local exhaust system shall be operated continuously 24 hours a day until the enclosure of the asbestos control area is removed. Pressure differential recording for each work day shall be reviewed by the industrial hygienist and submitted to the Engineer within 24 hours from the end of each work day. The industrial hygienist shall notify the Contractor and the Engineer immediately of any pressure differential which is less than .02 inches of water.

EXECUTION

Equipment: Make available to the Engineer two complete sets of personal protective equipment and instructions for their use as required herein for entry to the asbestos control area at all times for inspection of the asbestos control area.

Competent Person: The Contractor shall have a "Competent Person" on the job site during work.

Protective Clothing: Provide personnel exposed to airborne concentrations of asbestos fibers with fire retardant disposable protective whole body clothing, headcovering, gloves, and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort but shall not be used alone. Make sleeves secure at the wrists and make coverings secure at the ankles by the use of tape.

Caution Signs and Labels: Provide bilingual caution signs at all approaches to asbestos control areas containing concentrations of airborne asbestos fibers. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide labels and affix to all asbestos materials, scrap, waste, debris and other products contaminated with asbestos.

Tools and Local Exhaust System: Provide a local exhaust system in the asbestos control area. The local exhaust system shall be in accordance with ANSI Z9.2 Equip exhaust with absolute (HEPA) filters. Local exhaust equipment must be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day monitoring of the pressure differential with an automatic recording instrument. In no case shall the building ventilation system be used as the local exhaust system for the asbestos control area. Filters on vacuum and exhaust equipment shall conform to ANSI Z9.2.

Work Procedures: Perform asbestos related work in accordance with 29 CFR 1910.1001 and as specified herein. Use wet removal procedures. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking and drinking shall not be permitted in the asbestos control area. Personnel of other trades not engaged in the removal and demolition of asbestos shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection provisions of this specification are complied with by the trade personnel. Shut down the building, heating, ventilation and air conditioning systems. Disconnect electrical service when wet removal is performed and provide temporary electrical service.

Furnishings: Uncontaminated furnishings shall be removed prior to asbestos removal as applicable.

Asbestos Control Area Requirements: Seal openings in areas where the release of airborne asbestos fibers is expected. Establish an asbestos control area with the use of curtains, portable partitions, or other enclosures in order to prevent the escape of asbestos fibers from the contaminated asbestos control area.

Asbestos Handling Procedures: Sufficiently wet asbestos material with a fine spray of amended water during removal, cutting or other handling so as to reduce the emission of airborne fibers. Remove material and immediately place in plastic disposal bags. Where unusual circumstances prohibit the use of plastic bags, submit an alternate proposal for containment of asbestos fibers to the Engineer for approval. For example, in the case where both piping and insulation are to be removed, the Contractor may elect to wet the insulation and wrap the pipes and insulation in plastic and remove the pipe by sections.

Sealing and Removal of Asbestos-Contaminated Items: Remove contaminated architectural mechanical and electrical appurtenances such as venetian blinds, full-height partitions, carpeting, duct work, pipes and fittings, radiators, light fixtures, conduit, panels, and other contaminated for removal by completely coating the items with an asbestos sealer at the demolition site before removing the items from the asbestos control area. Remaining asbestos residue shall not be of such size so as to allow dislodging by means other than vacuuming. These items need not be vacuumed. The asbestos sealer shall be

tinted a contrasting color. It shall be spray-applied by airless method. Thoroughness of sealing operation shall be visually gauged by the extent of colored coating on exposed surfaces. Sealers shall be equal to the following products:

"Asbestite 2000" manufactured by Arpin Products, Inc., P.O. Box 262, Oak Hurst, NJ 07755, Phone (201)531-0674. (Application rate as recommended by manufacturer.)

"Wedbestos Sealer" distributed by Webco Products, Stinnes Western Chemical, 3270 East Washington Blvd., Los Angeles, CA 90023, Phone (213) 269-0191. (Application rate as recommended by manufacturer.)

"Dust-Set" Manufactured by Mateson Chemical Corporation, 1025 E. Montgomery Avenue, Phila., PA 19125, Phone (215)423-3200. (Application rate as recommended by manufacturer.)

Monitoring: Monitoring of airborne concentrations of asbestos fibers shall be in accordance with 29 CFR 1910.1001 and as specified herein.

Monitoring Prior to Asbestos Work: Provide area monitoring and establish the reference TWA one day prior to the masking and sealing operations for each demolition site.

Monitoring During Asbestos Work: Provide personal and area monitoring and establish the TWA during the first exposure to airborne concentrations of asbestos. Thereafter, provided the same type of work is being performed, provide area monitoring once every four hours during the work shift inside the asbestos control area, outside the entrance to the asbestos control area, and at the exhaust opening of the local exhaust system. If monitoring outside the asbestos control area shows airborne concentrations have reached the specified TWA, stop all work, correct the condition(s) causing the increase, and notify the Engineer immediately.

Site Inspection: While performing asbestos removal work, the Contractor shall be subject to onsite inspection by the Engineer who may be assisted by safety or health personnel. If the work is found to be in violation of this specification, the Engineer will issue a stop work order to be in effect immediately and until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.

Clean-up and Disposal: Essential parts of asbestos dust control are housekeeping and clean-up procedures. Maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. Give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Do not blow down the space with compressed air. When asbestos removal is complete, all asbestos debris is removed from the worksite, the final clean-up is completed, certify the area as safe before the signs are removed. After final clean-up, remove all filters on the building HVAC system and provide new filters. Dispose of filters as asbestos-contaminated materials. Reestablish HVAC, mechanical, and electrical systems in proper working order. The Engineer will visually inspect the affected surfaces for residual asbestos material and accumulated dust and the Contractor shall re-clean all areas showing dust or residual asbestos materials. If re-cleaning is required, monitor the asbestos airborne concentration after re-cleaning. Notify the Engineer before unrestricted entry is permitted. The City shall have the option to perform monitoring to certify the areas are safe before entry is permitted.

Procedure for Disposal: Collect asbestos waste, scrap, debris, bags,

containers, equipment, and asbestos-contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed impermeable bags. Affix a caution label to each bag. Dispose of waste asbestos material at an Environmental Protection Agency (EPA) or state-approved sanitary landfill. For temporary storage, store sealed impermeable bags in asbestos waste drums. Procedure for hauling and disposal shall comply with 40 CFR 61 (Subpart B), state, regional and local standards. Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled. Workers unloading the sealed drums shall wear appropriate respirators and personal protective equipment when handling asbestos materials at the disposal site.

MEASUREMENT AND PAYMENT

Unless indicated otherwise in the Proposal, Asbestos Removal shall not be measured for direct payment and will be subsidiary to the project.