

CITY OF AUSTIN, TEXAS
Purchasing Office
REQUEST FOR PROPOSAL (RFP)
Offer Sheet

SOLICITATION NO: DKC0040

COMMODITY/SERVICE DESCRIPTION: Abatement Services for Asbestos, Lead & Mold

DATE ISSUED: May 31, 2012

REQUISITION NO.: RQM 1100 12042000318

PRE-PROPOSAL CONFERENCE TIME AND DATE: June 8, 2012 at 9:00 AM

COMMODITY CODE: 9103820

LOCATION: Town Lake Center Bldg, 721 Barton Springs Road, Austin, Texas 78704, Room 449

FOR CONTRACTUAL AND TECHNICAL ISSUES CONTACT:

Primary – Dolores Castillo, Sr. Buyer
Phone: 512-322-6466
Secondary – Gage Loots, Buyer II
Phone: 512-322-6118

PROPOSAL DUE PRIOR TO: 11:00 AM on June 15, 2012

COMPLIANCE PLAN DUE PRIOR TO: N/A

PROPOSAL CLOSING TIME AND DATE: 11:00 AM on June 15, 2012

LOCATION: MUNICIPAL BUILDING, 124 W 8th STREET
RM 310, AUSTIN, TEXAS 78701

When submitting a sealed Offer and/or Compliance Plan, use the proper address for the type of service desired, as shown below.

P.O. Address for US Mail	Street Address for Hand Delivery or Courier Service
City of Austin	City of Austin, Purchasing Office
Purchasing Office	Municipal Building
P.O. Box 1088	124 W 8 th Street, Rm 310
Austin, Texas 78767-8845	Austin, Texas 78701
	Reception Phone: (512) 974-2500

Offers (including Compliance Plans) that are not submitted in a sealed envelope or container will not be considered.

SUBMIT 1 ORIGINAL AND 5 SIGNED COPIES PLUS ONE COPY ON A CD OF OFFER

OFFER SUBMITTED BY

By the signature below, I certify that I have submitted a binding offer.

Signature of Person Authorized to Sign Offer

Signer's Name and Title: (please print or type)

FEDERAL TAX ID NO. _____

Date: _____

Company Name: _____

Address: _____

City, State, Zip Code _____

Phone No. ()

Fax No. ()

Email Address: _____

Table of Contents

SECTION NO.	TITLE	PAGES
0100, 0200, 0300	See http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDOCUMENTS *	*
0400	SUPPLEMENTAL PURCHASE PROVISIONS	10
0500	SCOPE OF WORK	6
0505	Master Specification for AE	103
0510	Master Specification for DPW	97
0600	PROPOSAL PREP INSTRUCTIONS / EVALUATION FACTORS	7
0605	LOCAL BUSINESS PRESENCE IDENTIFICATION FORM	2
0700	REFERENCE SHEET	1
0705	Cost Proposal Sheet for AE	2
0706	Cost Proposal Sheet for DPW	6
0710	Contractor Certifications Form	1
0715	City of Austin Inspection Form	2
Attachment 1	Power Production Contractor Work Requirements	15
Attachment 2	Master Spec for Abatement of Lead-Containing Materials	81
Attachment 3	Master Spec for Lead Based Paint	130
Attachment 4	Master Spec for Remediation of Mold Contaminated Building Materials	49
0800	NON-DISCRIMINATION CERTIFICATION	2
0805	NON-SUSPENSION OR DEBARMENT CERTIFICATION	1
0810	NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING AFFIDAVIT	2
0815	LIVING WAGES AND BENEFITS CONTRACTOR CERTIFICATION	1
0820	LIVING WAGES AND BENEFITS EMPLOYEE CERTIFICATION	1
0825	WORK PLACE CONDITIONS AFFIDAVIT	N/A
0830	BUY AMERICAN ACT CERTIFICATE	N/A
0835	NONRESIDENT BIDDER PROVISIONS	1
0900	MBE/WBE PROCUREMENT PROGRAM PACKAGE or NO GOALS UTILIZATION PLAN	2
1000	"NO OFFER" RESPONSE FORM	1

All other Sections may be viewed at: http://www.austintexas.gov/financeonline/vendor_connection/index.cfm

RETURN THE FOLLOWING DOCUMENTS WITH YOUR OFFER**

- Cover Page Offer Sheet
- Section 0600 Proposal
- Section 0605 Local Business Presence Identification Form
- Section 0700 Reference Sheet (if required)
- Sections 0800 - 0835 Certifications and Affidavits (return all applicable Sections)
- Section 0900 MBE/WBE Procurement Program Package or No Goals Utilization Plan
- Proposal Guaranty (if required)

**** See also Section 0200, Solicitation Instructions, Section 0400, Supplemental Purchase Provisions, and Section 0500, Scope of Work/Specification, for additional documents that must be submitted with the Offer.**

The Vendor agrees, if this Offer is accepted within 180 calendar days after the Due Date, to fully comply in strict accordance with the Solicitation, specifications and provisions attached thereto for the amounts shown on the accompanying Offer.

*** INCORPORATION OF DOCUMENTS.** Section 0100, Standard Purchase Definitions; Section 0200, Standard Solicitation Instructions; and Section 0300, Standard Purchase Terms and Conditions are hereby incorporated into this Solicitation by

reference, with the same force and effect as if they were incorporated in full text. The full text versions of these Sections are available, on the Internet at the following online address http://www.austintexas.gov/financeonline/vendor_connection/index.cfm#STANDARDBIDDDOCUMENTS.

If you do not have access to the Internet, you may obtain a copy of these Sections from the City of Austin Purchasing Office at the address or phone number indicated on page 1 of this Offer Sheet. Please have the Solicitation number available so that the staff can select the proper documents. These documents can be mailed, expressed mailed, or faxed to you.

It is the policy of the City of Austin to involve certified Minority Owned Business Enterprises (MBEs) and Woman Owned Business Enterprises (WBEs) in City contracting. MBE and WBE goals for this Solicitation are contained in Section 0900.

All Contractors and Subcontractors should be registered to do business with the City prior to submitting a response to a City Solicitation. In the case of Joint Ventures, each individual business in the joint venture should be registered with the City prior to submitting a response to a City solicitation. If the Joint Venture is awarded a contract, the Joint Venture must register to do business with the City. Prime Contractors are responsible for ensuring that their Subcontractors are registered. Registration can be done through the City's on-line vendor registration system. Log onto http://www.austintexas.gov/financeonline/vendor_connection/index.cfm and follow the directions.

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

The following Supplemental Purchasing Provisions apply to this solicitation:

1. **EXPLANATIONS OR CLARIFICATIONS** (reference paragraph 5 in Section 0200)

All requests for explanations or clarifications must be submitted in writing to the Purchasing Office no later than one week prior to closing of the Request for Proposal, to Dolores Castillo or Gage Loots by FAX: 512-322-6490 or EMAIL: Dolores.castillo@austinenergy.com or gage.loots@austinenergy.com.

2. **PRE-PROPOSAL CONFERENCE:**

Date: June 8, 2012

Time: 9:00 AM

Location: Town Lake Center, 721 Barton Springs Road, Austin, Texas 78704, Room 449

3. **Insurance** (reference paragraph 32 in Section 0300). Insurance is required for this proposal.

- A. General Requirements: See Section 0300, Standard Purchase Terms and Conditions, paragraph 32, entitled Insurance, for general insurance requirements.
- B. Specific Requirements: The Contractor shall at a minimum carry insurance in the types and amounts indicated below for the duration of the Contract and during any warranty period. These insurance coverages are required minimum and are not intended to limit the responsibility or liability of the Contractor.
- i. Worker's Compensation and Employers' Liability Insurance: Coverage shall be consistent with statutory benefits outlined in the Texas Worker's Compensation Act (Section 401). The minimum policy limits for Employer's Liability are \$1,000,000 bodily injury each accident, \$1,000,000 bodily injury by disease policy limit and \$1,000,000 bodily injury by disease each employee.
 - (1) The Contractor's policy shall apply to the State of Texas and include these endorsements in favor of the City of Austin:
 - (a) Waiver of Subrogation, Form WC 420304
 - (b) Thirty (30) days Notice of Cancellation, Form WC 420601
 - ii. Commercial General Liability Insurance: The minimum bodily injury and property damage per occurrence are \$1,000,000 for coverages A and B.
 - (1) The policy shall contain the following provisions:
 - (a) Blanket contractual liability coverage for liability assumed under the Contract and all other Contracts related to the project.
 - (b) Independent Contractor's Coverage.
 - (c) Products/Completed Operations Liability for the duration of the warranty/period.
 - (d) If the project involves digging or drilling provisions must be included that provide Explosion, Collapse, and Underground Coverage (X,C,U).
 - (2) The policy shall also include these endorsements in favor of the city of Austin:
 - (a) Waiver of Subrogation, Endorsement CG 2404
 - (b) Thirty (30) days Notice of Cancellation, Endorsement CG 0205
 - (c) The City of Austin listed as an additional insured, Endorsement CG 2010
 - iii. Business Automobile Liability Insurance: The Contractor shall provide coverage for all owned, non-owned and hired vehicles with a minimum combined single limit of \$1,000,000 per occurrence for bodily injury and property damage.

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

- (1) The policy shall include these endorsements in favor of the City of Austin:
 - (a) Waiver of Subrogation, Endorsement TE 2046A
 - (b) Thirty (30) days of Notice of Cancellation, Endorsement TE 0202A
 - (c) The City of Austin listed as an additional insured, Endorsement TE 9901B

iv. Endorsements: The specific insurance coverage endorsements specified above, or their equivalents must be provided. In the event that endorsements, which are the equivalent of the required coverage, are proposed to be substituted for the required coverage, copies of the equivalent endorsements must be provided for the City's review and approval.

- C. The Contractor shall provide a Certificate of Insurance with the types and amounts of coverage and the endorsements required herein within 14 calendar days of notification of award, unless otherwise specified.
- D. The Certificate of Insurance, and annual updates, shall contain the solicitation number and the Buyer's name and shall be mailed to the following address:

City of Austin Purchasing Office
Attn: Dolores Castillo
721 Barton Springs Road
Austin, Texas 78704

- E. Hazardous Materials Insurance. For work which involves asbestos or any hazardous material pollutant, CONTRACTOR or Subcontractor responsible for the Work shall comply with the following insurance requirements in addition to those specified above:

a) Provide an endorsement to the Commercial General Liability policy with minimum bodily injury and property damage limits of \$1,000,000 per occurrence for coverage's A&B and products and completed operations coverage with a separate aggregate of \$1,000,000. This policy shall not exclude coverage for the hazardous material or pollutant identified in the contract scope of work, and shall provide "occurrence" coverage without a sunset clause. This policy shall provide 30 day Notice of Cancellation and Waiver of Subrogation endorsements in favor of the CITY.

b) CONTRACTOR or Subcontractor responsible for transporting any hazardous materials under this contract shall provide pollution coverage. All Federal and State insurance requirements for transporting the materials described in this contract shall be met. Federal law requires interstate or intrastate transporters of asbestos to provide an MCS 90 endorsement with a \$5,000,000 limit when transporting asbestos in bulk in conveyances of gross vehicle weight rating of 10,000 pounds or more. Interstate transporters of asbestos in non-bulk in conveyances of gross vehicle weight rating of 10,000 pounds or more must provide an MCS 90 endorsement with a \$1,000,000 limit. The terms "conveyance" and "bulk" are defined by Title 49 CFR 171.8. All other transporters of asbestos shall provide either an MCS 90 endorsement with minimum limits of \$1,000,000 or an endorsement to their Commercial General Liability policy which provides coverage for bodily injury and property damage arising out of the transportation of asbestos. The endorsement shall, at a minimum, provide a \$1,000,000 limit of liability and cover events caused by the hazardous properties of airborne asbestos arising from fire, wind, hail, lightning, overturn of conveyance, collision with other vehicles or objects and loading and unloading of conveyances.

c) CONTRACTOR shall submit complete copies of the policy providing pollution liability coverage to OWNER.

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

4. PERFORMANCE BOND

- A. The City reserves the right to require a payment bond on a “per project” basis. If required, the Contractor shall provide a Performance Bond in an amount equal to 100% for each project as it is assigned, or at the discretion of the Project Manager amount within 14 calendar days (14 unless a different period is inserted) after notification of award. The Performance Bond serves as security for the faithful performance of all of the Contractor’s obligations under the Contract. The Performance Bond shall be issued by a solvent company authorized to do business in the State of Texas, and shall meet any other requirements established by law or by the City pursuant to applicable law. The Surety must obtain reinsurance for any portion of the risk that exceeds 10% of the Surety’s capital and surplus. For bonds exceeding \$100,000, the Surety must also hold a certificate of authority from the U.S. Secretary of the Treasury or have obtained reinsurance from a reinsurer that is authorized as a reinsurer in Texas and holds a certificate of authority from the U.S. Secretary of the Treasury.
- B. The Performance Bond shall remain in effect throughout the term of the project.

5. TERM OF CONTRACT

- A. The Contract shall be in effect for an initial term of 60 months, subject to the approval of the Contractor and the City Purchasing Officer or his designee.
- B. Upon expiration of the initial term or period of extension, the Contractor agrees to hold over under the terms and conditions of this agreement for such a period of time as is reasonably necessary to solicit and/or complete the project (not to exceed 120 days unless mutually agreed on in writing).
- C. The Contractor shall not be authorized to begin work on any Project until a Notice to Proceed has been issued from Owner.

THIS IS A 60 MONTH CONTRACT.

FIRM PRICES ARE TO BE SUBMITTED FOR THE FIRST TWENTY-FOUR (24) MONTH PERIOD

6. CONTRACT AWARD

Austin Energy and Department of Public Works reserve the right to award this contract to multiple vendors to ensure that services will be available at all times. Award will be made to the best evaluated proposers meeting the requirements states for this solicitation. Proposers may submit proposals for all or part of the work scopes.

For each project under this contract, a Scope of Work will be presented to all vendors on the contract and they will be asked to submit a bid for that project. The award for individual projects will be based on cost submitted by each vendor and ability to complete the project within required schedule.

The estimated not to exceed total contract expenditure for the duration of the contract period for Austin Energy is \$3,000,000 and for Department of Public Works \$6,000,000.00.

7. INVOICES and PAYMENT (reference paragraphs 12 and 13 in Section 0300)

- A. Invoices shall contain a non-duplicated invoice number and the information required in Section 0300, paragraph 12, entitled “Invoices.” Invoices received without all required information cannot be processed and will be returned to the vendor.

Invoices shall be mailed to the below address:

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

	City of Austin
Department	Austin Energy
Attn:	Linda Arredondo
Address	721 Barton Springs RD
City, State Zip Code	Austin, TX 78704

	City of Austin
Department	Public Works
Attn:	Steve Nelson
Address	505 Barton Springs Rd
City, State Zip Code	Austin, TX 78704

8. LIQUIDATED DAMAGES

Austin Energy (AE): Time is of the essence in the performance of the Contract; therefore, the Contractor shall strictly adhere to the Contract delivery schedule. No changes in the delivery schedule shall be effective unless in writing executed by both the City and the Contractor. The parties agree that if, due to no fault of the City, delivery of any material or performance of any service is delayed beyond the time specified in the Contract, the actual damages sustained by the City because of such delay will be uncertain and difficult to determine, and that the reasonable foreseeable damage incurred by the City is hereby stipulated to be \$500 per calendar day. The Contractor therefore agrees to pay, and the City agrees to accept, as liquidated damages, the sum of \$500 per calendar day for each calendar day of delay.

Department of Public Works (DPW):

The Bidder understands and agrees that the timely completion of the described Work is of the essence. The Bidder and OWNER further agree that the OWNER's actual damages for delay caused by failure to timely complete the Project are difficult, if not impossible to measure. However, with respect to the additional administrative and consultant costs to be incurred by OWNER, the reasonable estimate of such damages has been calculated and agreed to by OWNER and Bidder. Therefore, the Bidder and the OWNER agree that for each and every **Calendar Day** the Work or any portion thereof, remains incomplete after the **Final Completion** date as established by the above paragraph, "Time of Completion", payment will be due to the Owner in the amount of two hundred dollars (\$200.00) per **Calendar Day** as liquidated damages, not as a penalty, but for delay damages to the OWNER. Such amount shall be deducted by the OWNER from any Contract payment due. In the event of a default or breach by the CONTRACTOR and demand is made upon the surety to complete the project, in accordance with the Contract Documents, the surety shall be liable for liquidated damages pursuant to the Contract Documents in the same manner as the CONTRACTOR would have been.

9. RETAINAGE

The City will withhold 10 percent (%) retainage on a per project basis until completion of all work required per projected under the Contract. The Contractor's invoice shall indicate the amount due, less the retainage. Upon final acceptance of the work, the Contractor shall submit an invoice for the retainage to the City and payment will be made as specified in the Contract. Payment of the retainage by the City shall not constitute nor be deemed a waiver or release by the City of any of its rights and remedies against the

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

Contractor for recovery of amounts improperly invoiced or for defective, incomplete or non-conforming work under the Contract.

10. **FINAL PAYMENT**

The City will authorize payment of up to 90% of the total cost for the abatement project after the Contractor, (1) successfully completes the final walk-through and the performance of any work/repairs, as discovered, during the final walk-through, (2) submits the Contractor Supervisor's field notes to the Owner, (3) submits all sign-in/out logs to the Owner, and (4) submits any other paperwork generated at the project site by the Contractor.

The remaining 10% will be issued as final payment when the Contractor receives final clearance from the City and the Contractor has submitted to the City the final documentation listed in Section 00500 Substantial Completion Submittals contained in the Asbestos Abatement Master Specification. Submittals must be reviewed and approved as complete before final payment can be authorized.

11. **SUSPENSION**

City shall have the right at any time prior to completion of the work to suspend all or part of the work upon written notice to the Contractor. Upon such suspension and unless the Contractor is in default thereunder, the City will pay to Contractor the difference between the value of the work performed and the sum of the payments made prior to the date of suspension. Further payments under the Terms of Payment clause shall cease during the period of suspension. When directed by the City to resume the suspended work, Contractor and City shall establish the schedule for completion of the work. The Contract Price shall be adjusted to reflect the costs or savings attributable to such extension or suspension, and the adjustment to the Contract Price will be based upon the revised schedule. Payments under the provisions of the Terms of Payment clause shall then resume. The Contractor shall provide City with final cost, location of material in storage of undergoing treatment, and any associated paperwork involving services that were underway prior to suspension of work.

12. **CONTRACTOR'S UNDERSTANDING OF SCOPE AND TECHNICAL SERVICES REQUIREMENTS:**

Contractor warrants by submitting a bid, that the Contractor has reviewed the Scope and Technical Services, Specification and other Contract Documents, that Contractor understands the nature and scope of the work required thereby, and has correlated those documents with workable plans to accomplish the services required. City has made a good faith effort to communicate its needs to Contractor, but City is relying on the expertise of Contractor to help ensure regulatory compliance and perform treatment and disposal of various waste streams generated. It is understood that Contractor has had sufficient time and opportunity to review and study all of the data made available by City pertinent to the tasks. City shall not be liable for claims for extra compensation due to inadequacy or insufficiency of data or other information.

13. **WORKING HOURS:**

Unless specified otherwise in the Scope of Work issued for each individual project, the work schedule shall be from 7:30 a.m. to 4:30 p.m., Monday through Friday, excluding City of Austin holidays.

Any request for change to the working hours must be submitted, in writing, to the Project Manager at least 48 business hours in advance of the proposed change. The working hours may be changed only after written approval, from the Project Manager, has been received by the Contractor.

14. **CONTRACTOR WORK REQUIREMENTS: (AE Only)**

The Contractor shall comply with all the work requirements as contained in document titled Power Production Contractor Work Requirements.

15. **AWARD OF WORK AFTER ESTABLISHMENT OF SERVICE AGREEMENTS**

The AE and DPW will identify a scope of work and a schedule for abatement. If more than one service agreement has been established, then an invitation will be issued to each Contractor requesting that the Contractor attend a pre-bid meeting at the intended work site.

The Contractor(s) will be required to submit information including but not limited to: abatement plan of action, information on waste handling and minimization methods, site supervisor and worker

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

documentation, insurance certificates, schedule for work and a total cost for completing the project. Each bid will be evaluated for completeness, availability and total cost. The work will be issued to the Contractor with the lowest responsive bid available to meet project schedule. All abatement and O&M activities will comply with the Master Specification for Asbestos, lead or mold Abatement and O&M activities for these service agreements.

16. PROJECT SUPERVISORS

The contractor shall submit the names and resumes (including pertinent project experience) of at least two supervisors that they plan on using to conduct this abatement project. If the supervisors they submitted are approved by the Owner, the contractor shall ensure that one of these project supervisors are on site throughout the abatement project including the time when items specified to be removed for recycling are being removed from all buildings. The contractor shall not substitute any other project supervisor without the approval of the Owner.

17. CONTRACTOR CERTIFICATION

The Owner will check with the Texas Department of State Health Services Programs Branch to see if the abatement contractor/subcontractor has been issued a critical or serious violation in accordance with the Health Protection Rules for asbestos, lead, and mold. If the Texas Department of Health determines through their hearing process that a critical or serious violation did occur, the Owner may elect not to use the services of this abatement contractor/subcontractor for this project.

18. HAZARDOUS MATERIALS

- A. If this Solicitation involves hazardous materials, the Offeror shall furnish with the Offer Material Safety Data Sheets (MSDS), (OSHA Form 20), on all chemicals and hazardous materials specifying the generic and trade name of product, product specification, and full hazard information including receiving and storage hazards. Instructions, special equipment needed for handling, information on approved containers, and instructions for the disposal of the material are also required.
- B. Failure to submit the MSDS as part of the Offer may subject the Offer to disqualification from consideration for award.
- C. The MSDS, instructions and information required in paragraph "a " must be included with each shipment under the contract.

19. RECYCLED PRODUCTS

- A. The City prefers that Offerors offer products that contain recycled materials. When a recycled product is offered by the Offeror, the Offeror must state in their Offer the percentage of the product that is recycled and must include a list of the recycled materials that are contained in the product.
- B. The recycled content of paper products offered to the City shall be in accordance with the Federal Environmental Protection Agency's Recycled Product Procurement Guidelines. These guidelines are available at <http://www.epa.gov/cpg/> .
- C. Contract award for paper products will be made for recycled products unless the cost is more than 10% above the lowest price for non-recycled paper products as required in the City's Comprehensive Recycling Resolution.

20. LIVING WAGES AND BENEFITS (applicable to procurements involving the use of labor)

- A. In order to help assure low employee turnover, quality services, and to reduce costs for health care provided to uninsured citizens, the Austin City Council is committed to ensuring fair compensation for City employees and those persons employed elsewhere in Austin. This commitment has been

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

supported by actions to establish a “living wage” and affordable health care protection. Currently, the minimum wage for City employees is \$11.00 per hour. This minimum wage is required for any Contractor employee directly assigned to this City Contract, unless Published Wage Rates are included in this solicitation. In addition, the City may stipulate higher wage rates in certain solicitations in order to assure quality and continuity of service.

- B. Additionally, the City provides health insurance for its employees, and for a nominal rate, employees may obtain coverage for their family members. Contractors must offer health insurance with optional family coverage for all Contractor employees directly assigned to this contract. Proof of the health care plan shall be provided prior to award of a Contract. In addition, an insurance certificate for Workers’ Compensation Insurance Coverage must be provided if required by the solicitation.
- C. The City requires Contractors submitting Offers on this Contract to provide a signed certification (**see the Living Wages and Benefits Contractor Certification included in the Solicitation**) with their Offer certifying that all employees directly assigned to this City Contract will be paid a minimum living wage equal to or greater than \$11.00 per hour and are offered a health care plan. The certification shall include a list of all employees directly assigned to providing services under the resultant contract including their name and job title. The list shall be updated and provided to the City as necessary throughout the term of the Contract.
- D. The Contractor shall maintain throughout the term of the resultant contract basic employment and wage information for each employee as required by the Fair Labor Standards Act (FLSA). Basic employment records shall at a minimum include:
 - i. employee’s full name, as used for social security purposes, and on the same record, the employee’s identifying symbol or number if such is used in place of name on any time, work, or payroll records;
 - ii. time and date of week when employee’s workweek begins;
 - iii. hours worked each day and total hours worked each workweek;
 - iv. basis on which employee’s wages are paid;
 - v. regular hourly pay rate;
 - vi. total daily or weekly straight-time earnings;
 - vii. total overtime earnings for the workweek;
 - viii. all additions to or deductions from the employee’s wages;
 - ix. total wages paid each pay period; and
 - x. date of payment and the pay period covered by the payment.
- E. The Contractor shall provide with the first invoice and as requested by the Department’s Contract Manager, individual Employee Certifications (**see the Living Wages and Benefits Employee Certification included in the Solicitation**) for all employees directly assigned to the contract containing:
 - i. the employee’s name and job title;
 - ii. a statement certifying that the employee is paid at a rate equal to or greater than the Living Wage of \$11.00 per hour;
 - iii. a statement certifying that the employee is offered a health care plan with optional family coverage.

Employee Certifications shall be signed by each employee directly assigned to the contract.

- A. Contractor shall submit employee certifications quarterly with the respective invoice to verify that employees are paid the Living Wage throughout the term of the contract.

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

- G. The Department's Contract Manager will periodically review the employee data submitted by the Contractor to verify compliance with this Living Wage provision. The City retains the right to review employee records identified in paragraph D above to verify compliance with this provision.

21. NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING

- A. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2.7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Offerors or potential Offerors are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.
- B. If during the No-Contact Period an Offeror makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Offeror's Offer is disqualified from further consideration except as permitted in the Ordinance.
- C. If a Respondent has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Offeror from doing business with the City for a period not to exceed three (3) years, provided the Respondent is given written notice and a hearing in advance of the debarment.
- D. The City requires Offerors submitting Offers on this Solicitation to provide a signed Section 0810, Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying Affidavit, certifying that the Offeror has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance. The text of the City Ordinance is posted on the Internet at: <http://www.ci.austin.tx.us/edims/document.cfm?id=161145>

22. NON-SOLICITATION

- A. During the term of the Contract, and for a period of six (6) months following termination of the Contract, the Contractor, its affiliate, or its agent shall not hire, employ, or solicit for employment or consulting services, a City employee employed in a technical job classification in a City department that engages or uses the services of a Contractor employee.
- B. In the event that a breach of Paragraph A occurs the Contractor shall pay liquidated damages to the City in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation; or (ii) 100 percent of the employee's annual compensation while employed by the City. The Contractor shall reimburse the City for any fees and expenses incurred in the enforcement of this provision.
- C. During the term of the Contract, and for a period of six (6) months following termination of the Contract, a department that engages the services of the Contractor or uses the services of a Contractor employee will not hire a Contractor employee while the employee is performing work under a Contract with the City unless the City first obtains the Contractor's approval.
- D. In the event that a breach of Paragraph C occurs, the City shall pay liquidated damages to the Contractor in an amount equal to the greater of: (i) one (1) year of the employee's annual compensation or (ii) 100 percent of the employee's annual compensation while employed by the Contractor.

23. ECONOMIC PRICE ADJUSTMENT

- A. Prices shown in this contract shall remain firm for the first 24 month period of the contract. After that, in recognition of the potential for fluctuation of the Contractor's cost, a price adjustment (increase or

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

decrease) may be requested by either the City or the Contractor subject to the following considerations:

B. Price Increases

i. Requests for price increases must be made in writing and submitted to the appropriate Buyer in the City's Purchasing Office. The letter must be signed by a person with the authority to bind the Contractor contractually, shall reference the contract number, and include the following documentation:

- (1) an itemized, revised price list with the effective date of the proposed increase;
- (2) copies of the documentation provided by the manufacturer regarding the proposed price increase if the contractor is not the manufacturer of the products. If the Contractor is the manufacturer of the products, a letter so stating must be provided;

- (3) For the purposes of this Contract, pricing provided by the Contractor will be considered to be 70% cost of goods and 30% cost of labor; price change requests shall be allocated accordingly. For the 70% cost of goods pricing, Contractor shall submit, as a part of the request for increase, the version of the Producer Price Index Industry Data, Series ID: Index #061302, the Index for Basic Chemical mfg current as of the date of the Contractor's Offer; and a copy of the index for the most current period. For the 30% labor portion of the contract, Contractor shall submit, as a part of the request for increase, the version of the U.S. Department of Labor Employment Cost Index for Wages and Salaries for all Private Industry Workers (the "Index") current as of the date of the Contractor's Offer; and a copy of the index for the most current period. Price increases shall be calculated based on percentage changes in the above indexes with the following formula:

$$\text{Price increase \%} = .70 (\text{PPI Index above}) + .30 (\text{Labor Index})$$

- (4) Proposed price increases must be solely for the purpose of accommodating increases in the Contractor's costs for the products or services provided. Prices for products or services unaffected by verifiable cost trends shall not be subject to change.

ii. Requests for price increases must be made in writing and submitted to the appropriate Contract Manager prior to each yearly anniversary date of contract. Prices will only be considered for an increase at that time. Once received, the City will have 30 calendar days to review and approve/disapprove the requested increase. Should the City not agree with the requested increase, Contractor may either maintain the prices currently in effect, negotiate an acceptable increase with the City or terminate the contract.

C. Price Decreases

i. Proposed price decreases may be offered to the City at any time, and become effective upon acceptance by the City unless a different effective date is specified by the Contractor. Request for price decreases by the City will be based on the same documentation as price increase request. Price decrease offers may also be subject to negotiation.

ii. Price decreases based on relevant factors may be requested by the City at any time. Such requests shall be accompanied by a complete statement of the City's justification for the request. The Contractor shall have 30 calendar days to respond to the City's request. Following receipt of the Contractor's agreement with the requested decrease, the City may implement the decrease at any time. Should the Contractor not agree with the requested decrease, the City may either maintain the prices currently in effect, negotiate with the contractor, or terminate the contract.

**CITY OF AUSTIN
PURCHASING OFFICE
SUPPLEMENTAL PURCHASE PROVISIONS
RFP DKC0040**

24. **CONTRACT MANAGER**

The following person is designated as Contract Manager, and will act as the contact point between the City and the Contractor during the term of the Contract:

Austin Energy: Linda Arredondo

Public Works: Steve Nelson

*Note: The above listed Contract Manager is not the authorized Contact Person for purposes of the **NON-COLLUSION, NON-CONFLICT OF INTEREST, AND ANTI-LOBBYING Provision** of this Section; and therefore, contact with the Contract Manager is prohibited during the no contact period.

MASTER SPECIFICATION
For Abatement of Asbestos-Containing Materials

THE CITY OF AUSTIN

Project No. 0504151

Prepared for:
AUSTIN ENERGY
721 Barton Springs Road
Austin, Texas

Prepared by:
ENVIRONMENTAL RESOURCE CONSULTANTS (ERC)
10801 Hammerly Boulevard, Suite 222
Houston, TX 77043
P. 713-290-9444 F. 713-290-9441
www.erc-tx.com
July 2006

Revised by: Linda Arredondo; Environmental Care & Protection

March 2011

PROJECT INFORMATION

SECTION 00010 DIRECTORY 1
 SECTION 00100 INSTRUCTIONS TO COST ESTIMATORS 3
 SECTION 00300 BID FORM 3
 SECTION 00500 PROJECT SUBMITTAL SUMMARY 2
 SECTION 00800 SUPPLEMENTARY GENERAL CONDITIONS 7

ADMINISTRATIVE PROCEDURES

SECTION 01050 PROJECT COORDINATION 2
 SECTION 01100 DEFINITIONS AND STANDARDS 7
 SECTION 01200 CODES AND REGULATIONS 3
 SECTION 01300 SCHEDULES, REPORTS, PAYMENTS 3
 SECTION 01350 SHOP DRAWINGS, PRODUCT DATA, SAMPLES 2
 SECTION 01360 SUBSTITUTIONS AND PRODUCT OPTIONS 2
 SECTION 01370 PRODUCT HANDLING 1
 SECTION 01380 TEMPORARY FACILITIES 4
 SECTION 01390 PROJECT CLOSEOUT 4

AIR MONITORING / INSPECTION / LABORATORY TESTING SERVICES

SECTION 01400 AIR MONITORING & INSPECTION / TESTING LABORATORY SERVICES 5
 SECTION 01410 FINAL CLEARANCE (AGGRESSIVE PCM) 2
 SECTION 01420 FINAL CLEARANCE (AGGRESSIVE TEM) 2
 SECTION 01430 FINAL CLEARANCE (STATIC PCM) 1

REMOVAL PROCEDURES

SECTION 01500 CONTAINMENT 5
 SECTION 01510 PRE-CLEANING AND PROJECT DECONTAMINATION PROCEDURES 2
 SECTION 01520 DECONTAMINATION UNITS 6
 SECTION 01530 VENTILATION SYSTEM 4
 SECTION 01540 REMOVAL OF ASBESTOS-CONTAINING MATERIALS 3
 SECTION 01545 REMOVAL OF RESILIENT FLOOR TILE & MASTIC, SHEET FLOORING AND VINYL FLOORING AND MASTIC 2
 SECTION 01550 REMOVAL OF PIPE INSULATIONS (GLOVE-BAG METHOD) 2
 SECTION 01565 REMOVAL OF EXTERIOR ROOFING AND SIDING PANELS 1
 SECTION 01580 REMOVAL OF TEMPORARY CONTAINMENT 2
 SECTION 01590 DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIALS 2

PERSONNEL PROTECTION

SECTION 01700 WORKER PROTECTION/WORKER TRAINING 6
 SECTION 01710 RESPIRATORY PROTECTION 5

REPAIR PROCEDURES

SECTION 15100 PIPE AND EQUIPMENT INSULATION 2
 SECTION 15200 REPAIRS OF INSULATION AND LAGGING 2

PROJECT DIRECTORY

SECTION 00010

PROJECT NAME: Master Specification for Austin Energy

PROJECT NO: 0504151

OWNER: Austin Energy
721 Barton Springs Road
Austin, TX 78767
(512) 322-6274

CONTACT: Ms. Linda Arredondo
Project Manager
Compliance Specialist

CONSULTANT:

ENVIRONMENTAL RESOURCE CONSULTANTS (ERC)
10801 Hammerly Boulevard, Suite 222
Houston, Texas 77043
TEL: (713) 290-9444 FAX: (713) 290-9441

Fernando F. Yopez
Principal
TDSHS Asbestos Consultant License #10-5279

PROJECT DIRECTORY

SECTION 00010

PROJECT NAME: Master Specification for Austin Energy

PROJECT NO: 0504151

**OWNER: Austin Energy
721 Barton Springs Road
Austin, TX 78767
(512) 322-6274**

**CONTACT: Ms. Linda Arredondo
Project Manager
Compliance Specialist**

CONSULTANT:

**ENVIRONMENTAL RESOURCE CONSULTANTS (ERC)
10801 Hammerly Boulevard, Suite 222
Houston, Texas 77043
TEL: (713) 290-9444 FAX: (713) 290-9441**

**Fernando F. Yopez
Principal
TDSHS Asbestos Consultant License #10-5279**

INSTRUCTIONS TO COST ESTIMATORS

SECTION 00100

COPIES OF COST ESTIMATING DOCUMENTS:

Complete set of the Cost Estimating Documents is available from the **OWNER** as noted in the Advertisement or Invitation to Bid.

Complete sets of Cost Estimating Documents shall be used in preparing Cost Estimates; neither the **OWNER** nor **CONSULTANT/AIR MONITORING TECHNICIAN** assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

The **OWNER** in making copies of Cost Estimating Documents available do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

RECEIPT OF ADDENDUM:

It is the responsibility of the Cost Estimator to confirm receipt of all issued Addenda.

Failure to acknowledge receipt of issued Addenda may result in a Cost Estimate being declared non-responsive.

EXAMINATION OF CONTRACT DOCUMENTS AND SITE:

Before submitting a Cost Estimate, each Cost Estimator must examine the Contract Documents thoroughly, visit the site to familiarize himself with local conditions that may in any manner affect cost, progress or performance of the Work, and familiarize himself with federal, state, and local laws, ordinances, rules and regulations that may in any manner affect cost, progress or performance of the Work, and satisfy himself that the Work can be completed as set forth in the Contract Documents.

Each Cost Estimator shall, at his own expense, make such additional investigations as he may deem necessary to determine his Cost Estimate for performance of the Work in accordance with terms and conditions of the Contract Documents.

Study and carefully correlate Cost Estimator's observations with the Contract Documents.

On request, the **OWNER** will provide each Cost Estimator access to the site to conduct such investigations and tests as each Cost Estimator deems necessary for submission of his Cost Estimate.

Trips for the purpose of site inspections shall be made by appointment through the **OWNER**. **NO UNSCHEDULED INSPECTIONS WILL BE ALLOWED.**

The submission of a Cost Estimate will constitute an incontrovertible representation by the Cost Estimator that he has complied with every requirement of this specification and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance of the Work.

INTERPRETATION:

Questions about the meaning or intent of the Contract Documents shall be submitted to the **OWNER**. Replies will be issued by Addenda mailed, emailed, faxed or delivered to parties recorded by the **OWNER** as having received the Bidding Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

SUBMISSION OF COST ESTIMATES:

Cost Estimates shall be submitted at the time and place indicated in the Invitation to Provide Cost Estimate and shall be included in an opaque, sealed envelope, marked as follows:

Project Title
Project Number
Bidder's Name, Address, Telephone Number
Person to contact concerning the Cost Estimate

If the Cost Estimate is sent through the mail or other delivery system, with the exception of faxed or electronic bids, the sealed envelope shall be enclosed in a separate envelope with the notation "**COST ESTIMATE ENCLOSED**" on the face thereof.

MODIFICATION AND WITHDRAWAL OF COST ESTIMATES:

Cost Estimates may be modified or withdrawn by an appropriate document duly executed (in the manner that a Cost Estimate must be executed) and delivered to the place where Cost Estimates are to be submitted at any time prior to the opening of Cost Estimates.

PLAN OF ACTION:

For the initial cost estimate the **CONTRACTOR** shall be required to submit a detailed plan of the procedures proposed for use in complying with the requirements of these specifications. The plan of action must include the following items:

1. Total number of workers proposed for the project.
2. Floor plan layout with decon unit and ventilation units clearly identified.
3. Work procedures proposed for abating required materials including any mechanical equipment which may be required.
4. Safety measures proposed for working with other trades, city personnel or visitors to the site.
5. Fire Action Plan.
6. Disposal plan including proposed staging site for disposal trailers.
7. Type of respiratory protection proposed for anticipated scope of work.

Upon award of the contract, the **CONTRACTOR** will be required to submit a plan of action for every job proposed on. The plan must be approved by the **OWNER** and **CONSULTANT/AIR MONITORING TECHNICIAN** prior to commencement of work.

Submit a written, updated Plan of Action, including Work Schedule, with each payment request. Update shall reflect changes made prior to the payment request and changes required to successfully complete the next phase of **WORK**.

OPENING OF COST ESTIMATES:

Cost Estimates will be opened publicly. However, final selection of successful bidder(s) will not be made available until all evaluations have been completed by the selection committee.

COST ESTIMATES TO REMAIN OPEN:

Cost Estimates shall remain valid and binding for one hundred twenty (120) days after the day of the Cost Estimate opening, but the **OWNER** may, at his sole discretion, release any Cost Estimate prior to that date.

AWARD OF CONTRACT:

The **OWNER** reserves the right to reject any and all Cost Estimates, to waive any and all formalities and informalities and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, non-responsive or conditional Cost Estimates.

Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

Discrepancies between the indicated sum in figures and written sum will be resolved in favor of the written sum.

Operating costs, maintenance considerations, performance data and guarantees of material and equipment, associated costs of **CONSULTANT/AIR MONITORING TECHNICIAN** services, and other items as deemed appropriate by the **OWNER** may be considered by the **OWNER** in evaluation of Cost Estimates.

The **OWNER** may conduct such investigations as he deems necessary to assist in the evaluation of any Cost Estimate and to establish the responsibility, qualifications and financial ability of the Bidders, and other persons and organizations to do the Work in accordance with the Contract Documents to the **OWNER's** satisfaction within the prescribed time.

The **OWNER** reserves the right to reject the Cost Estimate of any Cost Estimator who does not pass any such evaluation to the **OWNER's** satisfaction.

If the contract is to be awarded, the **OWNER** will give the Successful Bidder a Notice of Award within one hundred twenty (120) days after the day of the Cost Estimate opening.

BID FORM

SECTION 00300

To: Austin Energy
721 Barton Springs Road
Austin, TX 78704

Date:

In compliance with your Invitation for Bids and subject to the conditions thereof the undersigned:

(Name of **BIDDER**)

a Corporation organized and existing under the laws of the State of:

A Partnership consisting of:

or an Individual trading as:

having principal offices in the
City of _____

hereby proposes to furnish labor and materials and perform Work required, including all applicable taxes, license fees, permits, bonds, insurance premiums and other associated items necessary in the performance of the Work for the following Project:

Project Name: _____

Address: _____

Project
Number: _____

in accordance with Contract Documents
dated: _____

as prepared by Environmental Resource Consultants and Austin Energy.

PROJECT SPECIFICATIONS

ACKNOWLEDGMENTS: The **BIDDER** declares that he has examined the site of the Work and fully informed himself regarding pertinent conditions, and that he has examined the Contract Documents (including Addenda received) for the Work relative thereto, and that he has satisfied himself relative to the Work to be performed.

ADDENDA: The **BIDDER** acknowledges receipt of Addenda Numbers: _____

INSURANCE CERTIFICATES: As part of the bid requirements a properly completed "Certificate of Insurance" is enclosed with this bid.

CITATIONS: The undersigned certifies that he

has

has never

received any citations issued by Federal, State or Local regulatory agencies relating to asbestos abatement activities for the Contracting Company listed below and any and all its affiliates. If any citations have been issued attach a record of said citations including projects, dates and resolutions.

LEGAL PROCEEDINGS/CLAIMS: The undersigned certifies that he

has

has never

been involved in any asbestos-related legal proceedings/claims in which the **BIDDER** (or employees scheduled to participate in this project) have participated or are currently involved. If any legal proceedings/claims have been issued, attach a record of said legal proceedings/claims including descriptions of role, issue and resolution to date.

TERMINATIONS: The undersigned certifies that he

has

has never

been involved in situations in which an asbestos related Contract has been terminated. If any terminations have been issued, attach a record of said terminations including projects, dates and reasons for terminations.

CERTIFICATIONS: The undersigned certifies that he is authorized to execute Contracts on behalf of the **BIDDER** as legally named, that this proposal is submitted in good faith without fraud or collusion with any other **BIDDER**, that the data indicated below is true and complete, and that the bid is made in good faith and in full accord with State Law. Notice or acceptance may be sent to the undersigned at the address set forth below.

Legal Name of BIDDER*: _____

Mailing Address: _____

By (Legal Signature): _____

Name Typed: _____

Title: _____

Corporation number
(if applicable): _____

DATA ON BIDDER:

Abatement Contractor's State
License: _____

License Number** _____

**Submit copy of License.

*If a partnership, list partners and their addresses. If a corporation, type in corporate number; if bid is signed by other than the president or a vice-president, attach written authority to bind the corporation. If an individual, then so state. Any modification to a bid shall be over the initials of the person signing the bid or of an agent who supplied written authority with the modification.

STATE OF: _____

COUNTY
OF: _____

SWORN TO AND SUBSCRIBED BEFORE ME, DAY 20
ON THIS OF _____

Signature of Notary Public

Printed Name of Notary Public

MY COMMISSION
EXPIRES _____

SEAL:

PROJECT SPECIFICATIONS

PROJECT SUBMITTAL SUMMARY

SECTION 00500

Illegible submittals will be rejected and returned for re-submittal.

BID SUBMITTALS (One (1) copy submitted to **OWNER**)

Section 00020 - Bid Bond (if required)
Section 00300 - Bid Form
Section 00300 - Contractor's License

PRE-MOBILIZATION SUBMITTALS (Two (2) copies submitted to CONSULTANT / AIR MONITORING TECHNICIAN)

Section 01050 - Emergency Phone List
Section 01200 - Permits (if required)
Section 01200 - Regulatory Notices
Section 01300 - Project Schedule
Section 01300 - Schedule of Values
Section 01350 - Product Data and Samples
Section 01350 - Shop Drawings (as applicable)
Section 01350 - Material Safety and Data Sheets
Section 01360 - Substitution
Section 01590 - Name of transporter and disposal site

MOBILIZATION SUBMITTALS (One (1) copy submitted to CONSULTANT / AIR MONITORING TECHNICIAN on-site)

Section 01200 - Licenses to include: Contractor and Supervisor
Section 01700 - List of Workers
Section 01700 - Worker Training Certificate
Section 01700 - Worker Registration Certificate
Section 01700 - Respiratory Fit Test Certificate
Section 01700 - Certificates of Worker Acknowledgment
Section 01700 - Medical Examination Results
Section 01700 - AE Site Inspection Form

PROGRESS PAYMENTS (Two (2) original signed copies submitted to CONSULTANT/AIR MONITORING TECHNICIAN)

Section 01300 - Payment Application Form to include:

Schedule of Values
Waivers of Lien
Affidavit of Bills Paid

SUBSTANTIAL COMPLETION SUBMITTALS (Two (2) copies submitted to **OWNER REPRESENTATIVE**)

- Section 01300 - Daily Contractors Log
- Section 01300 - Disposal Manifests and Weigh Tickets
- Section 01390 - Certificate of Completion
- Section 01390 - Warranties (as applicable)
- Section 01400 - Personal Air Monitoring Lab Results
OSHA 1926.1101

FINAL PAYMENT APPLICATION FORMS (Two (2) original signed copies submitted to **CONSULTANT/AIR MONITORING TECHNICIAN**)

- Section 01390 - Final Payment Application Forms to include:
- Schedule of Values
 - Waivers of Lien
 - Affidavit of Bills Paid
 - Consent of Surety (as applicable)

SUPPLEMENTARY GENERAL CONDITIONS

SECTION 00800

DATA AND REPORTS:

The **CONTRACTOR** agrees that Contract Documents, data and reports generated by the **OWNER** and **CONSULTANT** remains the property of the **OWNER**.

FURNISHING OF WATER AND ELECTRICITY:

The **OWNER** will provide the normal electrical supply and currently installed electrical system in the building for the use of the **CONTRACTOR**; however, it shall be the responsibility of the **CONTRACTOR**, at his own expense, to provide temporary connections and route the power to its usage area. The **OWNER** provides no warranty as to the system's condition or capabilities. The **CONTRACTOR** shall assure himself that the electrical system is adequate for his requirements or supply additional temporary electrical power, at his own expense.

The **OWNER** will pay cost of the above utilities for the duration of the Project. Cost of excessive waste or abuse of provided utilities, as determined by the **CONSULTANT/AIR MONITORING TECHNICIAN**, will be back charged to the **CONTRACTOR** and deducted from the Contract Amount.

Damage to the water or electrical systems or surrounding areas (floors, ceilings, walls, etc) resulting from failure of **CONTRACTOR**'s materials (hoses, cabling, etc.) or misuse or abuse of the existing systems shall be repaired or replaced by the **CONTRACTOR** to the satisfaction of the **OWNER** at no additional expense to the **OWNER**.

At the completion of Work the **CONTRACTOR** shall remove temporary connections and restore systems and surrounding area to pre-abatement conditions.

PRE-CONSTRUCTION CONFERENCE:

The **OWNER** will schedule an initial progress meeting, recognized as "pre-construction conference". Prior to start of work, meet at the project site, with **CONTRACTOR**'s Superintendent, **OWNER**, **CONSULTANT/AIR MONITORING TECHNICIAN**, and other entities concerned with the Work. The **CONSULTANT/AIR MONITORING TECHNICIAN** will record discussions and agreements and provide copy to each attendee.

STOP WORK ORDER:

The General Conditions are hereby amended to permit the **OWNER** or **CONSULTANT/AIR MONITORING TECHNICIAN** to stop work with the issuance of a Stop Work Order.

If the **OWNER** or **CONSULTANT/AIR MONITORING TECHNICIAN** presents a written or verbal Stop Work Order, immediately and thoroughly stop work. Do not recommence work until authorized in writing by the **CONSULTANT/AIR MONITORING TECHNICIAN**.

WORK HOURS AND WORK CONDUCT:

CONTRACTOR shall schedule his work so that the maximum number of work hours per man does not exceed twelve (12) within any twenty-four (24) hour period, except as authorized by the **CONSULTANT/AIR MONITORING TECHNICIAN** or the **OWNER**.

The **CONTRACTOR** shall employ orderly and competent workers, skilled in the performance of the work required under this Contract. Workers shall maintain a professional demeanor; appear rested and physically able to complete a day's work. If, in the opinion of the **CONSULTANT/AIR MONITORING TECHNICIAN**, a worker is concurrently employed on another project, exhibits fatigue, or for other reasons appears incompetent or disorderly, he may be expelled from the job site and not regain entry without the **CONSULTANT/AIR MONITORING TECHNICIAN'S** written consent.

FIRE PROTECTION:

CONTRACTOR shall submit a detailed written fire plan in case of a fire enumerating procedures and specific personnel responsibilities concerning the following:

1. Chain of command
2. Call local fire department
3. Alert building occupants
4. Contact **OWNER** and Consultant/Air Monitoring technician
5. Operate fire extinguishing equipment
6. Control of contamination after fire is extinguished

CONTRACTOR shall conduct a safety meeting for **CONTRACTOR'S** employees with emphasis of operation of fire extinguishers and emergency exits in case of fire.

CONTRACTOR shall have posted emergency phone numbers for the fire department and building security.

CONTRACTOR shall store minimum of volatiles substances on the job site and in fire-resistant containers only.

CONTRACTOR shall install smoke detectors, with audible and visual warning signals for every 1,000 square feet of enclosed Work Area.

CONTRACTOR certifications for portable fire extinguishers shall comply with the Texas Insurance Code Article 5.43-1 and 28 TAC §§ 34.500 September 1997.

SECURITY:

Adequate warning signs shall be posted to warn persons approaching a Work Area of the dangers of asbestos. Post signage with initial opaque barrier stating "**CONSTRUCTION AREA, KEEP OUT**", which must be breached to encounter asbestos specific warning signage at such points so that persons approaching the Work Area will have time to take adequate safety precautions.

If the work involves the entire building, establish a twenty-foot (20') perimeter line clearly demarcated to restrict unauthorized access to the building.

CONTRACTOR shall provide personnel to perform surveillance of work areas 24 hours per day seven (7) days per week during operation of ventilation units. Personnel shall be qualified asbestos abatement workers. Duties include maintenance of pressure differential containment and regular inspection of work area for fire prevention and other incidents, which could cause contamination outside of the work areas. Separate personnel are not required during **CONTRACTOR'S** normal work hours.

The **OWNER** may, on his own election, provide security on the premises covered under this Agreement. The **OWNER** and the **CONSULTANT/AIR MONITORING TECHNICIAN** will not be liable for damage, injury or destruction to any personal property owned by the **CONTRACTOR** or any death, sickness, disease, or bodily injury incurred by an employee or agent of the **CONTRACTOR** as a result of the provision of such security.

The **CONTRACTOR**, its employees, agents and directors specifically and forever release, acquit and waive any claims, demands and obligations against the **OWNER** and **CONSULTANT/AIR MONITORING TECHNICIAN** arising from, whether directly or consequentially, the provision of such security.

POTENTIAL ASBESTOS HAZARD:

The disturbance or dislocation of ACM may cause asbestos fibers to be released in to the building's atmosphere, thereby creating a potential health hazard to workmen and building occupants. Apprise workers, supervisory personnel, and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.

Where in the performance of the Work, workers, supervisory personnel, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified ACM, take appropriate continuous measures as necessary to protect building occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

ASBESTOS-CONTAINING MATERIALS:

The **CONTRACTOR** shall always be mindful of the possible presence of asbestos-containing materials (in addition to the ACM to be abated under this Contract.) and shall carry out its work with due diligence in light of this possibility. The **CONTRACTOR** shall be and remain solely responsible for the safety of its employees in the performance of the Work and shall take precautions necessary to ensure such safety.

The **CONTRACTOR** may discover suspected ACM, other than material to be abated under this Contract. Upon such discovery the **CONTRACTOR** shall take such action as is reasonably necessary and feasible to provide an interim safe and secure environment for its employees and third parties until the determination can be made of how next to proceed.

The **CONTRACTOR** shall promptly notify the **CONSULTANT/AIR MONITORING TECHNICIAN** of such suspected material. The **CONSULTANT/AIR MONITORING TECHNICIAN** will thereupon determine the proper course of action (sampling, testing, etc), prepare his report and proceed with notification to the **OWNER**.

In no event shall the **CONTRACTOR** discuss such materials with parties other than the **CONSULTANT/AIR MONITORING TECHNICIAN**.

The **CONSULTANT/AIR MONITORING TECHNICIAN** will determine if the material is ACM and so inform the **CONTRACTOR**. The **CONTRACTOR** shall modify actions as necessary to continue a safe and secure environment. At the discretion of the **OWNER**, the **CONSULTANT/AIR MONITORING TECHNICIAN** will convey detailed report results to the **CONTRACTOR**.

OWNER OCCUPANCY:

Cooperate fully with the **OWNER** during construction operations to minimize conflicts and to facilitate **OWNER** usage. Perform the work so as not to interfere with the **OWNER's** operation.

ACCESS TO AFFECTED AREA:

The **CONTRACTOR** shall be careful when utilizing space around the affected work area. Do not block access to adjacent walkways or equipment necessary for the **OWNER's** day-to-day operations. Do not block emergency exits or emergency pathways.

USE OF THE SITE:

The **CONTRACTOR** shall limit his use of the premises to the work indicated, so as to allow for **OWNER** occupancy and use by the public, if required.

Confine operations at the site to areas designated. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project construction.

Adhere to general safety requirements for working on all Austin Energy projects. Minimum safety equipment required for working or entering site shall include steel toe safety shoes, protective eye wear with side shields and current dated hardhat.

Keep existing driveways and entrances serving the premises clear and available to the **OWNER** and his employees. Do not use these areas for parking or storage of materials.

Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to areas designated. If additional storage is necessary, obtain and pay for such storage off site.

Clause D will apply to each contract and will apply to any and all sub-contractors.

D. Workforce Security Clearance and Identification

Please note the following security procedures for personnel scheduled to perform any contract service on Austin Energy ("AE") property, sites or projects.

AE has a commitment to provide a secure work environment, free of work place violence; to protect its assets, property and operations; and to have its Contractors screen for any activity or presence which could result in an opportunity for sabotage or terrorism. These goals are designed to meet City of Austin policies and objectives as well as the counter-terrorism goals of the U.S. Department of Homeland Security.

- (A) Contractors are required to obtain a certified criminal background report with fingerprinting (referred to as the "report") for all persons performing on the contract, including all Contractor, Subcontractor, Supplier and vendor personnel (for convenience referred to as "Contractor's personnel"). The report may be obtained by reporting to an appropriate governmental entity, submitting to fingerprinting and requesting the report. [Requestors may anticipate a two-week delay for State reports and up to a four to six week delay for receipt of a Federal report.] Reports must be dated no more than 180 days before project commencement. The Contractor shall retain the reports and make them available for audit by the City during regular business hours (reference paragraph 17 in Section 0300, entitled Right to Audit).
- (B) The report may be obtained from the one of the following governmental entities:
- (1) Texas Department of Public Safety for any person currently residing in the State of Texas and having a valid Texas driver's license or photo identification card;
 - (2) The appropriate governmental agency from either the U.S. state or foreign nation in which the person resides and holds either a valid U.S. state-issued or foreign national driver's license or photo identification card; or
 - (3) A Federal security clearance obtained from and certified by a Federal agency.

- (4) An approved I9 form issued by the U.S. Immigration and Nationalization Service will be accepted in lieu of one of the above items (1)-(3) for contract or vendor employees with foreign citizenship, newly arrived to the United States to perform work on the contract.
- (C) Contractor shall obtain the reports prior to any onsite work commencement.
- (D) Contractor shall provide AE an affidavit affirming that Contractor has conducted reasonable and necessary security screening of Contractor's personnel to determine those appropriate for execution of the work and for presence on AE's property. To assist AE in providing the contractor identification badges in (E) below, Contractor also shall attach an appendix with the project name, Contractor's personnel name(s), current address(es), and a copy of the U.S. state-issued or foreign national driver's license or photo identification card/ID.
- (E) Upon receipt by AE of Contractor's affidavit described in (D) above, AE will provide each of Contractor's personnel a contractor identification badge ("ID badge") that is required to access AE property and that shall be worn at all times by Contractor's personnel during the execution of the work.
- (F) Contractor's personnel who fail to produce or wear the ID badge will not be allowed on AE's property, without regard to Contractor's schedule. Lost ID badges shall be reported to AE. Contractor will reimburse AE for all costs incurred in providing additional ID badges to Contractor.
- (G) **AE may revoke access at any time for any reason to include without limitation, cause, AE's convenience, or project cancellation or completion.**
- (H) Contractor is not required to obtain reports for delivery personnel, including but not limited to FedEx, UPS, Roadway, or other materials delivery persons, however all delivery personnel must present company/employer-issued photo identification and be accompanied by at least one of Contractor's personnel at all times while on AE's property or at the site for the work.

Lock vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.

The CONTRACTOR will not bring any company or personal vehicles on AE plant property without prior approval from Project Manager. A list of all vehicles, including make, model, owner and license plate number must be submitted.

CONTRACTOR'S USE OF THE EXISTING BUILDING:

Maintain existing building in a safe and weather tight condition throughout the construction period. Take precautions necessary to protect the building and its occupants during the construction period.

Keep public areas such as hallways, stairs, elevators lobbies and toilet rooms free from accumulation of waste, rubbish or construction debris.

Smoking or open fires will not be permitted within the building enclosure or on the premises, except where designated by the OWNER.

Except for Portable Toilet, A Rest Room(s) may be designated by the CONSULTANT/AIR MONITORING TECHNICIAN for use by the CONTRACTOR's personnel, otherwise use of existing toilets within the building, by the CONTRACTOR's personnel, will not be permitted.

USE OF EXISTING ELEVATORS (AS APPLICABLE):

Except for elevator as may be designated by the CONSULTANT/AIR MONITORING TECHNICIAN, use of elevators by the CONTRACTOR will not be permitted.

The designated elevator may be used for temporary freight service and the transportation of construction personnel during the construction period. This elevator must also be available to the OWNER; coordinate elevator usage with the CONSULTANT/AIR MONITORING TECHNICIAN. Provide protective pads for the elevator cab and other appropriate measures for the car and entrance doors and frames. During asbestos abatement activities, the car is to be protected as set forth in Section 01500 - Temporary Containment.

PARTIAL OWNER OCCUPANCY:

The OWNER reserves the right to place and install equipment as necessary, or conduct other non-asbestos construction or removal work, in areas of the building in which asbestos abatement and project decontamination procedures have been completed, and to occupy such completed areas prior to Substantial Completion, provided that such occupancy does not substantially interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the Work or any part of the Work.

AIR MONITORING SERVICES:

The OWNER will provide and pay for inspection and Air Monitoring services through the CONSULTANT/AIR MONITORING TECHNICIAN for the entirety of the Project. The CONTRACTOR shall provide and pay for all OSHA compliance monitoring for awarded projects.

Such services will be full-time, and there shall be no Abatement Work conducted unless the CONSULTANT/AIR MONITORING TECHNICIAN is on-site.

Notify the CONSULTANT/AIR MONITORING TECHNICIAN five (5) days prior to any proposed Work schedule change to allow for rescheduling of personnel. Failure to give such notice may result in disallowance of schedule change.

Should the Work not be completed within the scheduled Project Duration as submitted in the original Bid, services for Inspection and Air monitoring beyond the scheduled completion date will be provided and the costs of such services will be back charged by the OWNER to the CONTRACTOR at the OWNER'S cost.

Should the CONTRACTOR choose to work outside the schedule as submitted in the original Bid, services for Inspection and Air Monitoring will be provided and costs of such services will be back charged by the OWNER to the CONTRACTOR at the OWNER's cost.

Cost of CONSULTANT/AIR MONITORING TECHNICIAN'S services for the re-tests and re-inspections required due to failure of the CONTRACTOR to meet project criteria will be back charged by the OWNER to the CONTRACTOR at the OWNER's cost.

AFFIDAVIT

BEFORE ME, the undersigned authority, personally appeared _____(name), the _____(title) of _____(contractor name), a _____(state) corporation, who having been first duly sworn, did on oath depose and state that:

1. I am the _____(title) of _____(contractor name), hereafter referred to as the "Contractor", and have personal knowledge of the matters set forth in this Affidavit.

2. On _____(date) the City of Austin d/b/a Austin Energy, herein referred to as the "City", awarded a Contract, herein referred to as the "Contract", for _____

_____(title of project),
Contract No. _____, herein referred to as the "Project".

3. On behalf of the Contractor, I affirm that under the Contract's security procedures, the Contractor has conducted, and will conduct in the future if needed for personnel changes, reasonable and necessary security screening of Contractor's personnel, including for purposes of this Affidavit all Contractor, Subcontractor, Supplier and vendor personnel identified on the attached Appendix, to determine those appropriate for execution of the work and for presence on the City's property. Contractor will supplement the Appendix listing from time to time for any personnel changes.

(name of contractor)

By: _____

Title: _____

State of Texas
County of _____

SUBSCRIBED AND SWORN TO before the undersigned authority, on this _____ day of _____, 200__.

Notary Public, State of Texas

Notary's Printed Name

(Notary stamp with expiration date)

PROJECT COORDINATION

SECTION 01050

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

SUMMARY:

Minimum administrative and supervisory requirements necessary for coordination of work on the project include but are not necessarily limited to the following:

- Administrative and supervisory personnel
- Special reports
- Notifications to other entities at jobsite

EMERGENCY PHONE LIST:

CONTRACTOR shall submit an Emergency Phone List to CONSULTANT/AIR MONITORING TECHNICIAN as part of the Pre-Construction Submittals. **CONTRACTOR** shall post Emergency Phone List inside clean room of decontamination unit.

ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

Provide a full-time on-site General Superintendent who is familiar with and experienced in administration and supervision of asbestos abatement projects including work practices, regulations, protective measures for building and personnel, disposal procedures, and other applicable related asbestos abatement concerns.

This person is the Competent Person as required by OSHA in 29 CFR 1926 for the **CONTRACTOR** and is the **CONTRACTOR**'s representative responsible for compliance with applicable federal, state and local regulations, and in particular, those relating to asbestos-containing materials.

The General Superintendent must have completed and maintain current training requirements in supervision of asbestos abatement projects, have had a minimum of THREE(3) year on-the-job training and meet additional requirements set forth in 40 CFR Part 763 and 29 CFR 1926 for a Competent Person.

The General Superintendent shall be licensed in accordance with state law.

The General Superintendent shall be pre-approved prior to job start, acceptable to the **OWNER** and shall remain acceptable throughout the Project. The **CONTRACTOR** shall immediately replace a General Superintendent who becomes unacceptable to the **OWNER**, and the Work shall not proceed until an acceptable General Superintendent is on-site.

SPECIAL REPORTS:

General: Except as otherwise indicated, submit special reports directly to **OWNER** within one day of occurrence requiring special report, with copy to CONSULTANT/AIR MONITORING TECHNICIAN and others affected by occurrence.

Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of ventilation system, rupture of temporary enclosures), prepare and submit a special report, or daily log sheet, listing chain of events, persons participating, response by **CONTRACTOR**'s personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise **OWNER** and CONSULTANT/AIR MONITORING TECHNICIAN in advance at earliest possible date.

Reporting Accidents: Report accidents immediately to the CONSULTANT/AIR MONITORING TECHNICIAN. Prepare and submit reports, or daily log sheet, to the **OWNER** and CONSULTANT/AIR MONITORING TECHNICIAN of significant accidents where work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

DEFINITIONS AND STANDARDS

SECTION 01100

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

GENERAL DEFINITIONS:

General Explanation: A substantial amount of specification language constitutes definitions for terms found in other Contract Documents, including Drawings. Certain terms used in Contract Documents are defined in this article. Definitions and explanations of this section are not necessarily complete or exclusive, but are general for the work to the extent they are not stated more explicitly in another element of Contract Documents. The **CONTRACTOR** is responsible for clarifying definitions and terms with the **CONSULTANT/AIR MONITORING TECHNICIAN**. The **CONSULTANT/AIR MONITORING TECHNICIAN'S** interpretation of the definitions will be final and binding.

General Requirements: The general provisions or requirements apply to the entire work of Contract and, where so indicated, to other elements which are included in project.

Indicated: The term "Indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in Contract Documents.

Directed, Requested, etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by **CONSULTANT/AIR MONITORING TECHNICIAN**" "requested by **CONSULTANT/AIR MONITORING TECHNICIAN**," and similar phrases. However, no such implied meaning will be interpreted to extend **CONSULTANT/AIR MONITORING TECHNICIAN'S** responsibility into **CONTRACTOR'S** responsibility for construction supervision.

Approve: Where used in conjunction with **CONSULTANT/AIR MONITORING TECHNICIAN'S** response to submittals, requests, applications, inquiries, reports and claims by **CONTRACTOR**, the meaning of term "approved" will be held to limitations of **CONSULTANT/AIR MONITORING TECHNICIAN'S** responsibilities and duties as specified in General and Supplementary Conditions. In no case will "approval" by **CONSULTANT/AIR MONITORING TECHNICIAN** be interpreted as a release of **CONTRACTOR** from responsibilities to fulfill requirements of Contract Documents.

Project Site: The term "project site" is defined as the space available to **CONTRACTOR** for performance of the work, either exclusively or in conjunction with others performing other work as part of the project. The extent of project site may be shown on the drawings, and may or may not be identical with the actual area in which the project occurs.

Furnish: The term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

Install: The term "install" is used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing protecting, cleaning and similar operations, as applicable in each instance.

Provide: The term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

Testing Laboratory: is defined as an independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests. For this project the Testing Laboratory is the CONSULTANT/AIR MONITORING TECHNICIAN

CONSULTANT/AIR MONITORING TECHNICIAN: The CONSULTANT/AIR MONITORING TECHNICIAN will represent the OWNER during construction and until final payment is due. The CONSULTANT/AIR MONITORING TECHNICIAN will advise and consult with the OWNER. The OWNER's instructions to the CONTRACTOR's will be forwarded through the CONSULTANT/AIR MONITORING TECHNICIAN; the CONTRACTOR's correspondence with the OWNER shall be forwarded through the CONSULTANT/AIR MONITORING TECHNICIAN. The CONSULTANT/AIR MONITORING TECHNICIAN is a full time representative of the OWNER at the project site.

General Superintendent: the CONTRACTOR's representative at the project site.

DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT:

Abatement: Activities designed to control asbestos hazards, including preparatory work, removal operations, encapsulation, enclosure, and associated activities.

Aerosol: A system consisting of particles, solid or liquid, suspended in air.

Air Monitoring: The process of measuring the fiber content of a specific volume of air.

Amended Water: Water to which a surfactant has been added.

Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.

Asbestos-Containing Material (ACM): Material containing more than 1% by weight of asbestos of any type or mixture of types.

Asbestos-Containing Waste Material: Material which is contaminated with an asbestos-containing material.

Authorized Visitor: The OWNER, the CONSULTANT/AIR MONITORING TECHNICIAN, testing lab personnel, or a representative of any federal, state and local regulatory or other agency having authority over the project. Any other visitor to the site who has been authorized by the OWNER prior to site access.

Barrier: A surface that seals the work area to inhibit the movement of fibers.

Breathing Zone: A hemisphere forward of and even with the shoulders having a radius of approximately six (6) to nine (9) inches.

Clean room: means an uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

Competent person: means, in addition to the definition in 29 CFR 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32 (f): in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a) (2).

Critical barrier: means one or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

Decontamination area: means an enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

HEPA Filter: A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in Diameter.

HEPA Filter Vacuum Collection Equipment (HEPA vacuum): High efficiency particulate air (absolute) filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filter type shall be 99.97% efficient for retaining fibers of 0.3 microns or larger.

High-Efficiency Filter: A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 microns.

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

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

Permissible Exposure Limit (PEL): The maximum exposure of a contaminant which an individual can be exposed, prior to enforcement of medical monitoring and issuance of PPE.

Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Reduced Air Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

Removal (Remove): The removal of visible or detectable asbestos-containing material or waste from the removal surface and work area as inspected and approved by the CONSULTANT/AIR MONITORING TECHNICIAN followed by encapsulation of the cleaned removal surface. Removal of a material includes complete removal of over spray on vents, light fixture receptacles, adjacent surfaces, etc. Removal also includes clean-up of asbestos-containing debris in the designated work area.

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

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

Ventilation System: A local exhaust system, utilizing HEPA filtration capable of maintaining a reduced air pressure inside the work area and a constant air flow from adjacent areas into the work area and exhausting that air outside the work area.

Visible Emissions: Emissions containing particulate material that are visually detectable without the aid of instruments. This does not include condensed uncontaminated water vapor.

Visual Inspection (Final): The process of visual confirmation of completion of the removal and decontamination process prior to Final Clearance air testing. Visually clean means that visually detectable dust and debris has been removed from the work area as confirmed by visual inspection, wipe tests or other methods to detect optically visible particles as determined by the CONSULTANT/AIR MONITORING TECHNICIAN

Wet Cleaning (or Wet Wiping): The process of decontaminating building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant.

Work Area: The area where asbestos related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and to prevent entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.1101 (b).

FORMAL AND SPECIFICATION EXPLANATIONS:

Imperative language is used generally in specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by the **CONTRACTOR**. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities which must be fulfilled indirectly by **CONTRACTOR**, or when so noted, by others.

Section numbering is used to facilitate cross-references in the Contract Documents. Sections are placed in Project Manual in numeric sequence; however, numbering sequence is not complete, and listing of sections at the beginning of the Project Manual must be consulted to determine numbers and names of specification sections in Contract Documents.

Overlapping and Conflicting Requirements: Where compliance with two (2) or more industry standards or sets of requirements is specified, and overlapping of different standards or requirements establishes different or conflicting minimums or levels or quality, the most stringent requirement is intended and will be enforced, unless specifically detailed language written into Contract Documents clearly indicates that a less stringent requirement is to be fulfilled. Refer apparently-equal-but- different requirements, and uncertainties as to which level of quality is more stringent, to the CONSULTANT/AIR MONITORING TECHNICIAN for interpretation before proceeding. Communications and instructions from the CONSULTANT/AIR MONITORING TECHNICIAN to the **CONTRACTOR** must be in writing to be binding. Verbal communications must be confirmed in writing and acknowledged in writing by the CONSULTANT/AIR MONITORING TECHNICIAN to be binding.

Abbreviations: The language of Contract Documents is of abbreviated type in certain instances, implying words and meanings which will be appropriately interpreted. Actual work abbreviations of a self-explanatory nature have been included in the texts. Specific abbreviations have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of specification requirements with notations on drawings and in schedules. These are frequently defined in the section at first instance of use. Trade association names and titles of general standards are frequently abbreviated. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where full context of the Contract Documents so indicates.

INDUSTRY STANDARDS:

General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, applicable standards of the construction industry have the same force and effect (and are made a part of Contract Documents by reference) as if copied directly into Contract Documents, or as if published copies were bound herewith. Refer to the other Contract Documents for resolution of overlapping and conflicting requirements which result from the application of several different industry standards to the same unit of work.

Refer to individual unit of work sections for indications of which specialized codes and standards the **CONTRACTOR** must keep at the project site, available for reference.

Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.

Abbreviations and Names: The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of Contract Documents:

AIA	American Institute of Architects 1735 New York Avenue, N.W. Washington, D.C. 20006 (202) 626-7474
ANSI	American National Standards Institute 1430 Broadway, New York, NY 10018 (212) 354-3300
ASHRAE	American Society for Heating, Refrigerating, and Air Conditioning Engineers 1791 Tullie Circle, N.E., Atlanta, GA 30329 (404) 636-8400
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017 (212) 705-7722
ASPE	American Society of Plumbing Engineers 3716 thousand Oaks, Blvd., Suite 210 Westlake, CA 91362 (805) 495-7120

ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103 (215) 299-5400
CFR	Code of Federal Regulations Available from Government Printing Office, Washington, D.C. 20402 (usually first published in Federal Register)
CGA	Compressed Gas Association 1235 Jefferson Davis Highway Arlington, VA 22202 (703) 979-0900
CS	Commercial Standard of NBS (U.S. Dept. of Commerce) Government Printing Office Washington, D.C. 20402
DOT	Department of Transportation 400 M Street, SW Washington, DC 20590 (202) 426-4000
EPA	Environmental Protection Agency 401 M. Street, SW. Washington, D.C. 20460 (202) 382-3949
FS	Federal Specification (General Services Admin.) Obtain from your Regional GSA Office, or purchase from GSA Specifications Unit (SFSIS), Seventh and D Streets, S.W. Washington, D.C. 20406 (202) 472-2205 or 2140
GA	Gypsum Association 1603 Orrington Avenue Evanston, IL 60201 (312) 491-1744
GSA	General Services Administration F St. and 18th Street, N.W. Washington, D.C. 20405 (202) 655-4000
IEEE	Institute of Electrical and Electronic Engineers 345 E. 47th Street New York, NY 10017 (202) 705-7900
MIL	Military Standardization Documents (U.S. Dept. of Defense) Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120

NIST	National Institute of Standards and Technology (U.S. Dept. of Commerce) Gaithersburg, MD 20234 (301) 921-1000
NEC	National Electrical Code (by NFPA)
NFPA	National Fire Protection Association Batterymarch Park Quincy, MA 02269 (617) 770-3000
OSHA	Occupational Safety & Health Administration (U.S. Dept. of Labor) Government Printing Office Washington, D.C. 20402
PS	Product Standard of NBS (U.S. Dept. of Commerce) Government Printing Office Washington, D.C. 20402
RFCI	Resilient Floor Coverings Institute 966 Hungerford Drive, Suite 12-B Rockville, MD 60062 (312) 272-8000
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062 (312) 272-8800

TRADE UNION JURISDICTIONS:

The manner in which Contract Documents have been organized and subdivided is not intended to be an indication of jurisdictional or trade union agreements.

Maintain complete current information on jurisdictional matters, regulations actions and pending actions, as applicable to the work. Assign the work, and employ tradesmen and laborers, in a manner which will not unduly risk jurisdictional disputes of a kind which could result in conflicts, delays, claims and losses in the performance of the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

CODES AND REGULATIONS

SECTION 01200

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

SUMMARY:

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

CODES AND REGULATIONS:

General Applicability of Codes, Regulations, and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, applicable codes, regulations, and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

CONTRACTOR Responsibility: The **CONTRACTOR** shall be responsible for compliance with applicable Federal, State, and Local regulations pertaining to the Work, including work practices, transportation and disposal of asbestos waste materials, protection of workers, visitors to the site, and persons occupying areas adjacent to the site.

The **CONTRACTOR** shall be responsible for providing medical examinations and maintaining medical records of personnel as required by applicable Federal, State, and Local regulations.

The **CONTRACTOR** shall hold the **OWNER** and **CONSULTANT/AIR MONITORING TECHNICIAN** harmless for failure to comply with applicable regulations, including those pertaining to work practices, transportation and disposal of asbestos waste materials, protection of workers, visitors to the site, and persons occupying areas adjacent to the site; on the part of himself, his employees, and his authorized personnel, and will bear all costs associated therewith.

Federal Requirements: The **CONTRACTOR** shall abide by Federal requirements, which govern asbestos abatement work, transportation and disposal of asbestos waste materials, including, but not limited to, the following:

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

Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules, 29CFR 1910.1001 and 29 CFR1 926.1101.

Respiratory Protection, 29 CFR1910.134.

Access to Employee Exposure and Medical Records, 29 CFR, 1910.20 of the Code of Federal Regulations.

Hazard Communication, 29 CFR, 1926.59 of the Code of Federal Regulations.

Specifications for Accident Prevention Signs and Tags, 29CFR1910.145

U.S. Environmental Protection Agency (EPA) including but not limited to:

Regulation for Asbestos, 40CFR PART 61, Subpart A.

National Emission Standard for Asbestos, 40CFR Part61, Subpart M.

National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule, 40 CFR Part 61,dated November 20,1990.

Asbestos Abatement Projects; Worker Protection; Final Rule, 40 CFR Part763.

State Requirements: The **CONTRACTOR** shall abide by State requirements, which govern asbestos abatement work, transportation and disposal of asbestos waste materials, including, but not limited to, the following:

Texas Department of State Health Services, Title 25 Health Services, TAC 295.31 - 295.73

Local Requirements: The **CONTRACTOR** shall abide by Local requirements which govern asbestos abatement work including, but not limited to, transportation and disposal of asbestos waste materials.

STANDARDS:

Standards, which govern asbestos abatement work, transportation and disposal of asbestos waste materials, include, but are not limited to, the following:

American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018
(212) 354-3300.

Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79.
Revised 1991.

Practices for Respiratory Protection Publication Z288.2-80.

American Society for Testing and Materials (ASTM)
1916 Race Street
Philadelphia, PA 19103
(215) 299-5400.

Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849-82.

NOTICES:

CONTRACTOR will be responsible for notifying **OWNER** of changes required for notification. Failure to notify **OWNER** in a timely manner may result in project shutdown until revised notification can be processed.

State of Texas, Texas Department of State Health Services (TDSHS): The **OWNER** shall send Written Notification as required by the State of Texas, Texas Civil Statutes, Article 4477-3a, Paragraph 295.61.

Local Agencies: The **CONTRACTOR** shall send Notification as required and in the manner required by Local regulations prior to beginning work on asbestos-containing materials.

FEES:

Fees: The **OWNER** shall pay for all fees, and similar costs as may be required for the execution of the Work. Invoices or notifications of such costs will be forwarded to the **OWNER** for resolution and payment.

Licenses: The **CONTRACTOR** to maintain current licenses as required by applicable jurisdictions for the removal, transportation, disposal or other regulated activity relative to the Work.

SUBMITTALS:

Before start of Work submit the following to the **CONSULTANT/AIR MONITORING TECHNICIAN** for review. Each of the following documents shall be current and remain current during the course of the project. If a document expires during the course of the project, Work will not be allowed to proceed until an updated document has been submitted to the **CONSULTANT/AIR MONITORING TECHNICIAN**.

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

Licenses: Submit copies of required, current, valid licenses including Asbestos Abatement Contractor, Asbestos Abatement Supervisor and Asbestos Abatement Worker.

PART 2 -PRODUCTS (Not Applicable)

PART 3 -EXECUTION (Not Applicable)

SCHEDULES, REPORTS, PAYMENTS

SECTION 01300

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

COORDINATION:

Coordinate both the listing and timing of reports and activities required by provisions of this section and other sections, so as to provide consistency and logical coordination between the reports. Maintain coordination and correlation between separate reports by updating at monthly or shorter time intervals.

Make appropriate distribution of each report and updated report to parties involved in the Work including the CONSULTANT/AIR MONITORING TECHNICIAN and OWNER. Provide close coordination of the progress schedule, schedule of values, listing of subcontracts, schedule of submittals, progress reports, and payment requests.

SCHEDULES:

Provide proposed detailed schedule including work dates, work shift time, number of employees, dates of start and completion including dates of preparation work, removals and final inspection.

PROGRESS MEETINGS:

General: In addition to specific coordination and other regular project meetings held for other purposes, the CONSULTANT/AIR MONITORING TECHNICIAN will conduct general progress meetings as required, scheduled, where possible, with preparation of payment request. Require each entity then involved in planning, coordination or performance of Work to be properly represented at each meeting.

PRE-CONSTRUCTION CONFERENCE:

The OWNER will schedule an initial progress meeting, recognized as "Pre-Construction Conference". Prior to start of work, meet at project site, with CONTRACTOR's Superintendent, OWNER, CONSULTANT/AIR MONITORING TECHNICIAN and other entities concerned with the Work. The CONSULTANT/AIR MONITORING TECHNICIAN will record discussions and agreements and provide copy to each attendee.

REPORTING:

Daily Log: Maintain within the Decontamination Unit a Daily Log documenting the dates and time of but not limited to, the following items:

- Meetings; purpose, attendees, discussion (brief)
- Visitations; authorized and unauthorized
- Personnel, by name, social security number, entering and leaving the work area
- Air monitoring tests and test results
- Documentation of the following:
 - Inspection of work area preparation prior to start of removal and daily thereafter.
 - Removal of plastic sheeting barriers
 - Inspection prior to encapsulation
 - Removal of waste materials from work area
 - Decontamination of equipment (list items)
 - Final inspection/final clearance air test analysis
 - Unusual events
 - Request for change in Scope

Provide copies of Daily Logs at Project Closeout.

SCHEDULE OF VALUES:

General: Prepare the schedule of values, as required by the General Conditions, in conjunction with the preparation of the progress schedule. Correlate preparation of schedule of values and progress schedule. Correlate line items with other administrative schedules and forms required for the work, including the progress schedule, payment request form, schedule of allowances, and schedule of alternates. Provide breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of payment requests and progress reports. Round off to nearest whole dollar, but with the total equal to Contract Sum.

Sub-Schedules: Where the work is separated into phases which require separately phased payments to the **CONTRACTOR**, provide sub-schedules showing values correlated with each phase of payment.

Time Coordination: In coordination of initial submittals and other administrative "start up" activities, submit the schedule of values to the **CONSULTANT/AIR MONITORING TECHNICIAN** at the earliest feasible date, in no case later than seven (7) days prior to initial payment request submittal.

Listing: Arrange the schedule with columns to indicate the generic name of item, related specification sections, the supplier, manufacturer or fabricator, change orders (numbers) which have affected the value, the dollar value of the item, and the percentage of the Contract Sum to the nearest one-hundredth percent and adjusted to total 100 percent.

PAYMENT REQUESTS:

General: Except as otherwise indicated, the progress payment cycle is to be regular. Each application must be consistent with previous applications and payments. Certain applications for payment, such as the initial application, the application at substantial completion, and the final payment application involve additional requirements.

Waivers of Lien: For each payment application, submit waivers of lien from every entity (including **CONTRACTOR**) who could lawfully and possibly file a lien arising out of the Contract and related to work covered by the payment. Submit partial waivers for the amount requested prior to deduction or retainage on each item. When the application shows completion of an item, submit final or full waivers. **OWNER** reserves the right to designate which entities involved in the work must submit waivers.

Waiver Delays: Each progress payment must be submitted with **CONTRACTOR's** waiver for period of construction covered by application. At the **CONTRACTOR's** option, each progress payment may be submitted with waivers from suppliers for the previous period of construction covered by previous application. The final payment application must be submitted together with or preceded by final or complete waivers from every entity involved with performance of the Work covered by the payment request.

Waiver Forms: Submit waivers on forms, and executed in a manner, acceptable to **OWNER**

Retainage: Unless otherwise stated in the Agreement, retainage on Progress Payments will be 10% of the total amount completed to date.

Payment Application Times: The "date" for each progress payment is as indicated on **OWNER-CONTRACTOR** Agreement or, if none is indicated therein, it is the 15th day of each month. The period of construction work covered by each payment request is period indicated in the Agreement or, if none is indicated therein, it is period ending 15 days prior to date for each progress payment, with the starting day following end of preceding period.

Payment Application Forms: Submit on forms, and executed in a manner, acceptable to **OWNER**.

Application Preparation: Except as otherwise indicated, complete every entry provided for on the form, including notarization and execution by authorized persons. Incomplete applications will be returned by CONSULTANT/AIR MONITORING TECHNICIAN without action. Entries must match current data of schedule of values and progress schedule and report. Listing must include amounts of change orders issued prior to last day of the "period of construction" covered by application.

Final Payment Application: The administrative actions and submittals which must precede or coincide with submittal of **CONTRACTOR**'s final payment application can be summarized as follows, but not necessarily by way of limitation:

- Completion of project closeout requirements.
- Transmittal of required project construction records to CONSULTANT/AIR MONITORING TECHNICIAN.
- Landfill receipts including weigh tickets for asbestos-containing material.
- Consent of surety (if any) for final payment.

Application Transmittal: Submit executed copies of payment applications, one copy of which is completed with waivers of lien and similar attachments. Transmit each copy with a transmittal form listing those attachments, and recording appropriate information related to application in a manner acceptable to CONSULTANT/AIR MONITORING TECHNICIAN

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

SHOP DRAWINGS, PRODUCT DATA, SAMPLES

SECTION 01350

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DRAWINGS:

Present in clear and thorough manner.

Identify details by reference to sheet and detail numbers or room number shown on Drawings. Maximum Sheet Size: 30" x 42".

PRODUCT DATA:

Clearly mark each copy to identify pertinent products or models.

Show performance characteristics and capacities.

Show dimensions and clearances required.

Show wiring or piping diagrams and controls.

Manufacturer's standard schematic drawings and diagrams:

Modify drawings and diagrams to delete information not applicable to Work.

Supplement standard information to provide information specifically applicable to Work.

SAMPLES:

Provide sufficient size and quantity to clearly illustrate:

Functional characteristics of product, with integrally related parts and attachment devices.

Full range of color, texture and pattern.

SUBMISSION REQUIREMENTS:

Submit shop drawings, product data and samples sufficiently in advance of time returned copies are required to allow review by CONSULTANT/AIR MONITORING TECHNICIAN and resubmittal, if required.

Submit the OSHA Material Safety Data Sheet (MSDS) for solvents, encapsulates and other chemicals to be used on the Project site.

Submittals shall contain:

Date of submission (including previous submissions).

Project title and number.

Names of **CONTRACTOR**, supplier and manufacturer.

Identification of product, with specification section number where applicable.

Field dimensions, clearly identified as such.

Relation to adjacent or critical features of work or materials.

Applicable reference standards.

Identification of deviations from requirements of Contract Documents.

Identification of revisions on resubmittals.

RESUBMISSION:

Revise submittals as required and resubmit as specified for initial submittal. Indicate any **changes which have been made other than those requested by CONSULTANT/AIR MONITORING TECHNICIAN.**

CONTRACTOR RESPONSIBILITIES:

Schedule submittals according to general flow of Work and so as to allow for adequate and timely review of submittals by CONSULTANT/AIR MONITORING TECHNICIAN.

Review submittals prior to submission and submit to CONSULTANT/AIR MONITORING TECHNICIAN in accordance with provisions herein.

Verify field measurements, construction criteria, catalog numbers and similar data.

Coordinate submittals with requirements of Work and Contract Documents.

CONTRACTOR's responsibility for errors or omissions is not relieved by CONSULTANT/AIR MONITORING TECHNICIAN'S review.

CONTRACTOR's responsibility for deviations from requirements of Contract Documents is not relieved by CONSULTANT/AIR MONITORING TECHNICIAN review, unless CONSULTANT/AIR MONITORING TECHNICIAN is notified of deviations in writing at time of submittal and gives written review of specific deviations.

Do not begin work which requires submittals until reviewed submittals have been received from CONSULTANT/AIR MONITORING TECHNICIAN. Reproduce and distribute copies after CONSULTANT/AIR MONITORING TECHNICIAN'S review.

CONSULTANT/AIR MONITORING TECHNICIAN'S RESPONSIBILITIES:

Review submittals within ten days or indicate in writing reasons for reviews which require additional time.

Review for conformance with design concept of project and information given in Contract Documents.

Indicate results of review and return submittals to **CONTRACTOR** for distribution.

CONSULTANT/AIR MONITORING TECHNICIAN is not responsible for verification of field measurements, construction criteria, catalog numbers and other similar data.

Review of separate item does not constitute review of an assembly in which item functions

DISTRIBUTION: Distribute reviewed copies to **CONTRACTOR's** file, Project site file, and other parties as required.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

SUBSTITUTIONS AND PRODUCT OPTIONS

SECTION 01360

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

CONTRACTOR'S OPTIONS:

For products specified only by reference standards, select any product meeting standard.

For products specified by naming several products or manufacturers, select any named.

For products specified by naming products, provide product specifically named.

SUBSTITUTIONS:

CONSULTANT/AIR MONITORING TECHNICIAN will consider formal requests for substitution of products in place of those specified.

In making request for substitution, **CONTRACTOR** represents that:

He has investigated proposed substitution and determined that it is equal or superior to that specified for the intended use.

He will provide same warranty as for product or method specified.

He will coordinate installation of accepted substitution into Work, making changes as may be required to complete Work.

He waives claims for additional costs related to substitution which may subsequently become apparent.

Cost data is complete and includes related costs under Contract, excluding CONSULTANT/AIR MONITORING TECHNICIAN'S redesign.

Substitutions will not be considered if:

They are indicated or implied on shop drawings or data submittals without formal request.

Acceptance will require substantial revision of Contract Documents.

CONTRACTOR alone shall be responsible for substantiating acceptability of proposed substitutions.

CONSULTANT/AIR MONITORING TECHNICIAN'S decision in acceptance or non-acceptance of substitutions will be final.

SUBMITTALS:

Submit three copies, plus copies as needed for return, of each request for substitution, including complete data substantiating compliance of proposed substitution with Contract Documents.

For products:

Product identification, including name and address of manufacturer.

Product description, performance and test data, and reference standards.

For construction methods:

Detailed description of proposed method.

Illustrative drawings.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

PRODUCT HANDLING

SECTION 01370

PART 1 - GENERAL

QUALITY ASSURANCE:

Include within the **CONTRACTOR's** quality assurance program such procedures as are required to assure full protection of Work and materials.

MANUFACTURERS' RECOMMENDATIONS:

Except as otherwise approved by the **CONSULTANT/AIR MONITORING TECHNICIAN**, determine and comply with manufacturers' recommendations on product handling, storage, and protection.

PACKAGING:

Deliver products to the Project site in manufacturer's original container, with labels intact and legible.

Maintain packaged materials with seals unbroken and labels intact until time of use.

Promptly remove damaged material and unsuitable items from the Project site, and promptly replace with material meeting the specified requirements, at no additional cost to the **OWNER**.

The **CONSULTANT/AIR MONITORING TECHNICIAN** may reject as non-complying such material and products that do not bear identification satisfactory to the **CONSULTANT/AIR MONITORING TECHNICIAN** as to manufacturer, grade, quality, and other pertinent information.

PROTECTION:

Protect finished surfaces, including jambs, heads and soffits of openings used as passageways, through which equipment and materials are handled.

Provide protection for finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved over such surfaces.

Maintain finished surfaces clean, unmarred, and suitably protected throughout Project Duration.

REPAIRS AND REPLACEMENTS:

In event of damage, promptly make replacements and repairs to the satisfaction of the **CONSULTANT/AIR MONITORING TECHNICIAN** and at no additional cost to the **OWNER**.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

TEMPORARY FACILITIES

SECTION 01380

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF REQUIREMENTS:

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

STANDARDS:

Scaffolding: Comply with OSHA and other applicable regulations regarding the type, erection and use of scaffolding.

Electrical Service: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and installation of temporary electric service and hot water heater.

Heating Units: Temporary heating units shall have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed.

Fire Extinguishers: Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Fire extinguishers shall be fully charged and operable. **CONTRACTOR** certifications on portable fire extinguishers shall be in compliance with the Texas Insurance Code Article 5.43-1 & 28 TAC §§ 34.500.

PART 2 - PRODUCTS

GENERAL:

Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

SCAFFOLDING:

Provide scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type.

Equip rungs of metal ladders, etc. with an abrasive non-slip surface. Provide a nonskid surface on scaffold surfaces subject to foot traffic.

WATER SERVICE:

Temporary Water Service Connection: Connections to the **OWNER's** water system shall include backflow protection.

Water connection to **OWNER's** existing potable water system is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm each to hot and cold water supply. Hot water shall be supplied at a minimum temperature of 100°F.

Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered.

Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

Hot-Water Heater: Provide UL rated electric hot-water heater to supply hot water for the Decontamination Unit shower. Activate from appropriate amp circuit breaker located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper.

ELECTRICAL SERVICE:

General: Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work throughout the Project duration.

Temporary Power: Provide service to sub panel with appropriate amp, two (2) pole circuit breaker or fused disconnect sized and equipped to accommodate electrical equipment required for completion of the work.

Provide overload-protected disconnect switch for each temporary circuit located at the power distribution center.

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

Ground Fault Protection: Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for plug-in connection or power tools and equipment.

Electrical Wiring and Power Cords: Provide in the work area type UF (Underground Feeder) sheathed cable. Use only grounded extension cords in serviceable condition (no frayed or worn cords); use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work. Provide liquid tight enclosures or boxes for wiring devices.

Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide as a minimum, one 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed. In corridors and similar traffic areas provide as a minimum, one 100-watt incandescent lamp for every 50 feet. In stairways and ladder runs, provide as a minimum, one lamp per story, located to illuminate each landing and flight. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by work activities. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

Supplies for CONSULTANT/AIR MONITORING TECHNICIAN: The CONTRACTOR shall provide a source of electrical power, adequate lighting, and electrical extension cords for CONSULTANT/AIR MONITORING TECHNICIAN'S use throughout project duration.

TEMPORARY HEAT:

Use steam or hot water radiant heating units where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter. Under no circumstances shall forced air or fan type units be utilized inside a Work Area.

SANITARY FACILITIES:

Provide temporary self-contained toilet facilities as necessary for **CONTRACTOR's** own use. Facilities shall be clean and shall remain maintained in a condition acceptable to the **OWNER**.

At Project completion, decontaminate and remove temporary toilets and restore the area to the condition prevalent at the time of initial use.

SELF CONTAINED TOILETS:

Provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material. Provide one self-contained chemical toilet unit adjacent to the work area for each 30 workers. These self-contained toilets shall be made available if no other agreements are made with the **OWNER**.

ACM WASTE STORAGE:

Provide a separate, lockable, fully enclosed metal container, trailer or vehicle for temporary ACM waste storage on site.

Locate temporary ACM waste storage unit as directed on site. Label properly in accordance with regulatory requirements. Maintain locked at all times, except during loading operations. Repair damage to landscape and site construction resulting from storage unit operations to the satisfaction of the **OWNER**.

FIRST AID:

Provide first aid supplies and trained personnel in accordance with governing regulations and recognized recommendations within the construction industry.

FIRE EXTINGUISHERS:

Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations, including inside of the containment), provide type "ABC" dry chemical extinguishers. Fire extinguishers shall be operable and fully functional.

Locate operable and fully functional fire extinguishers as most convenient and effective for the intended purpose, not less than one (1) extinguisher per 1,000 square feet of Work Area, one (1) in Equipment Room and one (1) outside Work Area in Clean Room.

PART 3 - EXECUTION

INSTALLATION:

Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

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

SCAFFOLDING:

During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged. If damage occurs, it must be repaired immediately by appropriate means.

Clean as necessary, debris from non-slip surfaces.

At the completion of abatement work, clean construction aids within the work area, wrapping one (1) layer of 6 mil polyethylene sheet and seal before removal from the work area.

WATER SERVICE:

Supply hot and cold water to the Decontamination Unit.

Maintain hose connections and outlet valves in leak proof condition.

Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pan as it accumulates.

After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

ELECTRICAL SERVICE:

Temporary electrical service, including disconnections and modifications to existing electrical systems to accommodate abatement activities, shall be under the direct, continuous, on-site supervision of a licensed electrician authorized in the jurisdiction of the Project for the duration of the Project.

Existing electrical systems shall be temporarily disconnected or otherwise isolated from the abatement work areas prior to beginning of abatement activities which may disturb or otherwise cause contact with electrical systems.

Install temporary distribution overhead and drop vertically in locations least exposed to water and damage from work activities.

Do not wire devices with exposed or un-insulated electrical conductors.

TEMPORARY LIGHTING:

Install temporary lighting as necessary to provide sufficient illumination for safe and accurate work.

TEMPORARY HEAT:

Provide temporary heat as necessary for performance of the Work and as indicated.

Maintain a minimum temperature of 70°F where finished work has been installed.

Maintain a minimum temperature of 75°F in the shower of the Decontamination Unit.

Maintain a minimum temperature of 70°F in the work area during work activities. At other times and at completion of removal work, but before start of reconstruction work, maintain a minimum temperature of 50°F.

PROJECT CLOSEOUT

SECTION 01390

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF REQUIREMENTS:

Project Closeout is the term used to describe certain collective Project requirements, indicating completion of the Work, that are to be fulfilled near the end of the Contract Time in preparation for final acceptance and occupancy of the Work by the **OWNER**, as well as final payment to the **CONTRACTOR** and the normal termination of the Contract.

Specific requirements for individual units of Work are included in appropriate Sections.

Time of Project Closeout is directly related to Substantial Completion; therefore, the time of closeout may be either a single time period for the entire Work or a series of time periods for individual elements of the Work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this Section.

PREREQUISITES TO SUBSTANTIAL COMPLETION:

General: Complete the following before requesting the **CONSULTANT/AIR MONITORING TECHNICIAN** to inspect for substantial completion, either for the entire Work or for portions of the Work. Include list of known exceptions.

In the progress payment request that coincides with, or is the first request following, the date substantial completion is claimed, show either 100% completion for the portion of the Work claimed as "substantially complete" or list incomplete items, the value of incomplete Work, and reasons for the Work being incomplete.

Include supporting documentation for substantial completion.

Advise **OWNER** of pending insurance change-over requirements.

Obtain and submit releases enabling **OWNER's** full, unrestricted use of the Work and access to services and utilities. Where required, include occupancy permits, operating certificates and similar releases.

Complete Final Cleaning requirements.

Touch-up, repair, restore and/or replace marred finishes affected by the Work when such damaged or marred finishes are in excess of anticipated results of normal abatement operations. Degree of excessive damage and necessary repair procedures will be as determined by the **CONSULTANT/AIR MONITORING TECHNICIAN**

Inspection Procedures: Upon receipt of **CONTRACTOR's** request for inspection, the **CONSULTANT/AIR MONITORING TECHNICIAN** will either proceed with inspection or advise **CONTRACTOR** of unfulfilled prerequisites.

Results of the inspection will form the "punch-list" for final acceptance.

PREREQUISITES TO FINAL ACCEPTANCE:

General: Complete the following before requesting the CONSULTANT/AIR MONITORING TECHNICIAN's final inspection for final acceptance, and final payment as required by the General Conditions. List known exceptions, if any, in request.

Submit the final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required. CONTRACTOR's Certificate of Completion is enclosed at the end of this section.

Submit evidence of final, continuing insurance coverage complying with insurance requirements.

Reinspection Procedure: The CONSULTANT/AIR MONITORING TECHNICIAN will reinspect the Work upon receipt of the CONTRACTOR's notice that the Work, including punch-list items resulting from earlier inspections, has been completed, except for these items whose completion has been delayed because of circumstances that are acceptable to the CONSULTANT/AIR MONITORING TECHNICIAN. Upon completion of reinspection, the CONSULTANT/AIR MONITORING TECHNICIAN will either prepare final acceptance documents, or will advise the CONTRACTOR of Work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.

MODIFICATION OF PROCEDURES:

The OWNER and CONSULTANT/AIR MONITORING TECHNICIAN may modify, waive, and/or combine procedures, submittals and requirements of the Project Documents as may be deemed in the OWNER's best interest and as may be suitable to the size and scope of the Project.

PART 3 - EXECUTION

FINAL CLEANING:

General: Special cleaning requirements for specific units of Work are included in the appropriate Sections.

Cleaning: Provide Final Cleaning of the Work as indicated. Employ licensed asbestos workers for final cleaning. Clean each surface or unit of Work to the condition expected from a normal, commercial building cleaning and maintenance program. Comply with the manufacturer's instructions for cleaning operations.

Complete the following cleaning operations before requesting the CONSULTANT/AIR MONITORING TECHNICIAN to inspect for certification of Substantial Completion:

Remove exposed labels in finished spaces, which are not required as permanent labels on materials supplied as part of the Work, except for "Asbestos", "Asbestos Free", or Thermal Insulation Labels specified elsewhere.

Clean transparent materials affected by the Work, including mirrors and window/door glass, to a polished condition, removing substances, which are noticeably vision-obscuring materials.

Clean hard surfaced floors affected by the Work, using materials approved by the OWNER.

Clean exposed hard-surfaced finishes affected by the Work to a dirt-free condition, free of dust, stains, films and similar distracting substances. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces.

Restore reflective surfaces to original reflective condition prior to Work.

HEPA vacuum carpeted surfaces and similar soft surfaces affected by the Work. Professionally clean to remove staining caused by the Work.

Clean toilet areas and plumbing fixtures affected by the Work to a sanitary condition, free of stains including stains from water exposure.

Replace disposable type HVAC Filters affected by the Work using materials supplied by the **OWNER**. Clean permanent type filters after minimum of eight (8) hours of operation of HVAC equipment after Final Clearance.

Clean light fixtures and lamps, which have been affected by the Work.

Clean Project site (yard and grounds), including landscaped areas, of litter and foreign substances accumulated during the course of the Work.

Sweep paved areas, which have been affected by the Work to a broom-clean condition; remove stains, petrochemical spills and other foreign deposits left by the Work.

Rake unplanted grounds, which have been disturbed by the Work, to a smooth, even-textured surface.

Provide asbestos-free labels where **CONTRACTOR** has re-insulated abated piping, valve flanges, duct, etc. If partial abatement was conducted only, provide clear and precise boundary labels to identify scope of work performed.

Removal of Protection: Except as otherwise indicated or requested by the CONSULTANT/AIR MONITORING TECHNICIAN, remove temporary protection devices and facilities, which were installed during the course of the Work to protect previously, completed work.

Comply with safety standards and governing regulations for cleaning operations.

Do not burn waste materials on the **OWNER's** property.

Do not bury debris or excess materials on the **OWNER's** property.

Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the Project site and dispose in accordance with regulatory requirements.

Where extra materials of value remaining after completion of associated Work have become the **OWNER's** property, store materials as directed by the **OWNER**.

Remove temporary facilities, equipment, materials, and debris from the Project site.

CONTRACTOR'S CERTIFICATE OF COMPLETION

TO: _____
Owner/Manager

PROJECT: _____

BUILDING NAME: _____

LOCATION WITHIN
BUILDING: _____

The Work for the above referenced Project has been completed in accordance with applicable requirements of the United States Environmental Protection Agency, the Occupational Safety and Health Administration, the National Institute for Occupational Safety and Health, and state, county, and local agencies. The Work has also been performed in accordance with the Project Manual "Master Specification for Abatement of Asbestos Containing Materials" and the City of Austin Project No. 9710134.2 and attachments as prepared by the CONSULTANT/AIR MONITORING TECHNICIAN.

SIGNED: _____
Contractor Authorized Representative

TITLE: _____

DATE: _____

SIGNED: _____
Consultant Authorized Representative

TITLE: _____

DATE: _____

SIGNED: _____
Owner Authorized Representative

TITLE: _____

DATE: _____

AIR MONITORING AND INSPECTION TESTING LABORATORY SERVICES

SECTION 01400

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF THE WORK:

This Section describes air monitoring and inspection services to be carried out by the CONSULTANT/AIR MONITORING TECHNICIAN to verify that the Work performed is in compliance and that the building areas beyond the Work Area and the outside environment remain uncontaminated. This section also sets forth airborne fiber levels both inside and outside the Work Area as action levels, and describes the action required by the CONTRACTOR if an action level is met or exceeded.

AIR MONITORING:

The CONSULTANT/AIR MONITORING TECHNICIAN will be conducting air monitoring throughout the course of the Project.

Base Line Fiber Levels: The CONSULTANT/AIR MONITORING TECHNICIAN will monitor airborne fiber levels prior to start of Work. The purpose of this air monitoring will be to establish prevailing airborne fiber levels prior to beginning abatement operations.

Work Area Isolation: The CONSULTANT/AIR MONITORING TECHNICIAN will monitor airborne fiber levels outside the Work Area.

The purpose of this air monitoring will be to monitor integrity of the Work Area isolation relating to, but not limited to, prevention of contamination of building areas outside of the Work Area, prevention of failure of filtration or rupture in the ventilation system, and prevention of contamination of the exterior of the building.

Should indications of failure of integrity of any of the above systems occur, the CONTRACTOR shall immediately cease asbestos abatement activities until the discrepancy is corrected. Work shall not recommence until authorized by the CONSULTANT/AIR MONITORING TECHNICIAN.

Work Area Airborne Fiber Levels: The CONSULTANT/AIR MONITORING TECHNICIAN will monitor airborne fiber levels inside the Work Area.

The purpose of this air monitoring will be to monitor airborne fiber levels to verify appropriateness of the Work Area isolation procedures including respiratory protection.

Final Clearance: The CONSULTANT/AIR MONITORING TECHNICIAN will conduct Final Clearance air sampling in accordance with the Final Clearance Section(s).

AIRBORNE FIBER LEVELS:

Inside Work Area: Maintain an average airborne fiber level in the Work Area of less than 0.10 fibers

per cubic centimeter. If the fiber levels rise above this figure for any sample taken, revise work procedures to lower fiber levels. If the Time Weighted Average (TWA) fiber level for any Work shift or eight (8) hour period exceeds 0.10 fibers per cubic centimeter, stop Work and leave ventilation system in operation. Do not recommence Work until authorized in writing by the CONSULTANT/AIR MONITORING TECHNICIAN.

Outside Work Area: Maintain an average airborne level outside the Work Area of less than or equal to Base Line as established below.

If any air sample taken outside the Work Area exceeds the Base Line, immediately stop Work until the source of the excessive readings can be determined by the CONSULTANT/AIR MONITORING TECHNICIAN. If no outside non-asbestos source can be located by the CONSULTANT/AIR MONITORING TECHNICIAN and if this air sample was taken inside the building and outside of Critical Barriers around the Work Area, immediately erect new Critical Barriers as set forth in Section 01500 to isolate the affected area from the balance of the building or as instructed by the CONSULTANT/AIR MONITORING TECHNICIAN

Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).

Decontaminate the affected area in accordance with Section 01510.

Respiratory protection as set forth in Section 01710 shall be worn in affected area until area is cleared for re-occupancy.

Leave Critical Barriers in place until completion of Work and insure that the operation of the reduced air pressure system in the Work Area results in a flow of air from the balance of the building into the affected area.

If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a new decontamination facility.

After certificate of visual inspection by the CONSULTANT/ AIR MONITORING TECHNICIAN and CONTRACTOR in the extended work area, remove Critical Barriers separating the Work Area from the affected area. Final air samples will be taken within the entire area as set forth in the section on work area clearance.

Include the affected area in the Work Area and proceed with the Work.

Fiber Type Disputes: The following procedure will be used to resolve disputes regarding fiber types when the Project has been stopped due to excessive airborne fiber levels:

Air samples will be secured in the disputed area by the CONSULTANT/AIR MONITORING TECHNICIAN for analysis by Transmission Electron Microscopy (TEM) and classified as retests and back charged to the CONTRACTOR in accordance with the procedures in this specification.

ANALYTICAL METHODS:

The following analytical methods will be utilized by the CONSULTANT/AIR MONITORING TECHNICIAN in collecting and analyzing air samples during the abatement process:

Phase Contrast Microscopy (NIOSH 7400 Method A, Issue 2, Revision No. 3).

Transmission Electron Microscopy (NIOSH 7402, Yamate, or 40 CFR Part 763).

SAMPLE PROTOCOLS AND VOLUMES:

General: The number and volume of air samples taken by the CONSULTANT/AIR MONITORING TECHNICIAN will generally be in accordance with the following schedule. Locations and methodologies may vary depending upon the analytical method and project layout used and at the discretion of the CONSULTANT/AIR MONITORING TECHNICIAN.

SCHEDULE OF AIR SAMPLES:

Base Line Sample Schedule: The CONSULTANT/AIR MONITORING TECHNICIAN will secure the following air samples to establish Base Line Fiber Levels prior to start of Work.

Base Line Fiber Level: is an action level expressed in fibers per cubic centimeter (f/cc) which is the larger of the following:

Average of the samples collected outside each work area.

Daily Sample Schedule During Abatement (per 8-hour work period): From start of Work of Section 01500 through the Work of Section 01580, the CONSULTANT/AIR MONITORING TECHNICIAN will take the following samples on a daily (8-hour work period) basis.

LOCATION SAMPLED PER 8 HR SHIFT	NUMBER OF SAMPLES	PLANNED ANALYTICAL METHOD
Each Work Area	2	PCM
Outside Each Work Area	3	PCM
Negative Air Pressure System	2	PCM
Blanks (1 field)(1 lab)	2	PCM
Outside Building	1	PCM

If airborne fiber counts exceed baseline limits (except in Work Areas), additional samples will be taken (and classified as retests) as necessary to monitor fiber levels and confirm sources.

LABORATORY TESTING:

The CONSULTANT/AIR MONITORING TECHNICIAN will perform laboratory analysis of the air samples. A microscope and technician will be set up at the Project site, at the option of the CONSULTANT/AIR MONITORING TECHNICIAN, so that verbal reports on air samples can be obtained promptly after collection.

Daily reports to the **OWNER** by the CONSULTANT/AIR MONITORING TECHNICIAN will include air monitoring data and pertinent information on work being conducted such as: work hours, number of workers, procedures used, contractor discrepancies and corrective measures, containment methods and construction, and amount of ACM removed.

INSPECTIONS:

The CONSULTANT/AIR MONITORING TECHNICIAN in addition to providing air monitoring services, will provide full-time, on-site inspection of Work activities. The CONSULTANT/AIR MONITORING TECHNICIAN will provide on-going inspections throughout the project. The CONSULTANT/AIR MONITORING TECHNICIAN and/or OWNER may enter the containment without notice to the CONTRACTOR for inspection of CONTRACTOR's work practices and procedures and containment integrity. Work shall not proceed without prior notice (twenty-four (24) hour minimum) to the CONSULTANT/AIR MONITORING TECHNICIAN and presence of the CONSULTANT/AIR MONITORING TECHNICIAN on the Project site.

The CONSULTANT/AIR MONITORING TECHNICIAN inspections do not relieve the CONTRACTOR of his Contract obligations and are not designed to locate all discrepancies.

Inspections for prep, gross removal completion, pre-encapsulation, pre-final, final clearance and final inspection will require twenty-four (24) hours advance notice to the CONSULTANT/AIR MONITORING TECHNICIAN. CONTRACTOR's competent person or project manager shall perform each of the scheduled inspections on behalf of the CONTRACTOR and correct any discrepancies noted prior to requesting the consultant/air monitoring technician for their inspections.

The CONSULTANT/AIR MONITORING TECHNICIAN will conduct the following key Project inspections and no work by the CONTRACTOR shall proceed beyond each inspection until discrepancies noted during the inspection have been corrected.

Prep Inspection:

The CONSULTANT/AIR MONITORING TECHNICIAN will inspect Work Area and Containment prior to start of removal activities (gross removal). Removal operations shall not proceed until the CONSULTANT/AIR MONITORING TECHNICIAN has completed inspection of the Work Area preparations and until discrepancies noted have been corrected.

Inspections during gross removal:

Inspection of the Work Area and Work practices will be conducted on an ongoing basis. Upon report of discrepancies the CONTRACTOR shall immediately take corrective actions, including discontinuing removal activities if appropriate.

Gross Removal Completion Inspection:

The CONSULTANT/AIR MONITORING TECHNICIAN will inspect the Work Area after completion of gross removal Work, including detail cleaning of substrate. Upon completion of the inspection by the CONSULTANT/AIR MONITORING TECHNICIAN and correction of discrepancies noted, the CONTRACTOR shall proceed with removal of all but one layer of Containment Barriers and cleaning of the remaining layer in preparation of lock-down encapsulation.

Pre-encapsulation Inspection:

The CONSULTANT/AIR MONITORING TECHNICIAN will inspect the Work Area after completion of Containment Barrier cleaning. Lockdown encapsulation shall not proceed until discrepancies noted have been corrected.

Pre-Final Inspection:

The CONSULTANT/AIR MONITORING TECHNICIAN will inspect the Work Area after completion of encapsulation Work, but prior to removal of Containment Barriers. The CONTRACTOR shall correct discrepancies noted, and upon completion of corrections, the CONSULTANT/AIR MONITORING TECHNICIAN will perform pre-final Air Sampling.

Final Clearance Inspection:

The CONSULTANT/AIR MONITORING TECHNICIAN will inspect the Work Area after completion of Pre-final Air Sampling, removal of Containment Barriers and clean-up, but prior to removal of Critical Barriers. The CONTRACTOR shall correct discrepancies noted, and upon completion of corrections, the CONSULTANT/AIR MONITORING TECHNICIAN will perform Final Clearance Air Sampling

Final Inspection:

The CONSULTANT/AIR MONITORING TECHNICIAN will inspect the Project area after the CONTRACTOR has removed Critical Barriers, equipment, supplies, and performed final clean-up operations. Discrepancies, which are not or cannot be corrected expediently, will be assigned to a Project Punch List. Punch List items shall be resolved prior to Project Close Out.

Modifications:

The above inspection schedule may be modified by the CONSULTANT/AIR MONITORING TECHNICIAN to meet specific Project needs.

Failed inspections will be re-conducted and classified as retests.

PERSONAL MONITORING:

The CONTRACTOR shall perform air monitoring as required to meet OSHA Requirements for maintenance of Time Weighted Average (TWA) and excursion limit fiber counts for types of respiratory protection provided. The OWNER will not provide air-monitoring services to meet the CONTRACTOR's OSHA requirements.

The CONTRACTOR shall post results of OSHA required air monitoring within forty-eight (48) hours of sample collection.

PART 2 -PRODUCTS (Not Applicable)

PART 3 -EXECUTION (Not Applicable)

FINAL CLEARANCE (AGGRESSIVE PCM)

SECTION 01410

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

AIR MONITORING:

To determine if airborne fiber levels following abatement operations have been reduced to acceptable standards, the CONSULTANT/AIR MONITORING TECHNICIAN will secure and analyze air samples in accordance with the following procedures.

AGGRESSIVE SAMPLING:

Air Samples from Work Areas will be collected using aggressive sampling techniques at locations determined by the CONSULTANT/AIR MONITORING TECHNICIAN as follows:

Before sampling pumps are started, the exhaust from forced air equipment (leaf blower with electric motor) will be swept against walls, ceilings, floors, ledges and other surfaces in the Work Area.

or

Fans will be mounted in central locations directed toward ceilings and operated at low speed continuously for the period of sample collection to maintain fiber suspension as determined by the CONSULTANT/AIR MONITORING TECHNICIAN.

SCHEDULE OF AIR SAMPLES:

General: The number and volume of air samples taken and analytical methods used by the CONSULTANT/AIR MONITORING TECHNICIAN will generally be in accordance with the following schedule. Sample quantities, volumes, and analytical methodologies may vary and will be at the discretion of the CONSULTANT/AIR MONITORING TECHNICIAN.

In each homogeneous Work Area or as determined by the CONSULTANT/AIR MONITORING TECHNICIAN, samples will be collected and analyzed as follows:

LOCATION SAMPLED	SCHEDULED NUMBER OF SAMPLES	FILTER MEDIA
Each Work Area	5	Cellulose Ester

Analysis: Fibers on each filter will be measured using the NIOSH 7400 procedures.

Release Criteria: Final Clearance (Aggressive PCM) of the Work Area is complete when every Work Area sample is below 0.005 fibers per cubic centimeter or the current Base Line level, whichever is greater.

Re-cleaning: If the results of analysis of the Work Area samples fails to meet the release criteria, Final Clearance is incomplete, re-cleaning per Section 01580 is required, and re-testing is required until release criteria is met. The contractor will be responsible for all monitoring classified as retest.

LABORATORY TESTING: The CONSULTANT/AIR MONITORING TECHNICIAN will be employed by the **OWNER** to perform laboratory analysis of the air samples.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

FINAL CLEARANCE (AGGRESSIVE TEM)

SECTION 01420

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

AIR MONITORING:

To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the **ENGINEER** will secure samples and analyze them according to the following procedures.

AGGRESSIVE SAMPLING:

Air Samples from Work Areas will be collected using aggressive sampling techniques at locations determined by the **CONSULTANT/AIR MONITORING TECHNICIAN** as follows:

Before sampling pumps are started, the exhaust from forced air equipment (leaf blower with at least 1 horsepower electric motor) will be swept against walls, ceilings, floors, ledges and other surfaces in the Work Area. This procedure will be continued for five (5) minutes per 10,000 cubic feet of room volume. Fans will be mounted in central locations directed toward ceilings and operated at low speed continuously for the period of sample collection to maintain fiber suspension as determined by the **CONSULTANT/AIR MONITORING TECHNICIAN**.

SCHEDULE OF AIR SAMPLES:

General: The number and volume of air samples taken and analytical methods used by the **CONSULTANT/AIR MONITORING TECHNICIAN** will generally be in accordance with the following schedule. Sample quantities, volumes, and analytical methodologies may vary and will be at the discretion of the **CONSULTANT/AIR MONITORING TECHNICIAN**.

TRANSMISSION ELECTRON MICROSCOPY (TEM):

In each homogeneous Work Area or as determined by the **CONSULTANT/AIR MONITORING TECHNICIAN**, samples will be collected and analyzed as follows:

LOCATION SAMPLED	SCHEDULE NUMBER OF SAMPLES	FILTER MEDIA .45 MICRON
Each Work Area	5	Cellulose Ester
Outside of Work Area	5	Cellulose Ester
Field Blank	2	Cellulose Ester
Lab Blank	1	Cellulose Ester

Analysis: Asbestos fibers on each filter will be measured using analysis per AHERA rules (40CFR 763, appendix A and B)

Release Criteria: Decontamination of the Work site is complete as determined by the analytical protocol if average fiber concentration of the Work Area samples is below seventy (70) structures per square millimeter in accordance with 40 CFR 763.90(4). The **CONSULTANT/AIR MONITORING TECHNICIAN** may elect at his option to utilize the Z-test clearance alternative description in 40CFR Part 7663 in lieu of the above Method.

If the results of analysis of the Work Area samples fails to meet the release criteria, then the decontamination is incomplete and re-cleaning per section 01580 is required.

Laboratory Testing: Samples will be sent for analysis by Transmission Electron Microscopy to a laboratory selected by the **OWNER** for twenty-four (24) hour turn-around.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

FINAL CLEARANCE (STATIC PCM)

SECTION 01430

PART 1- GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

AIR MONITORING:

To determine if air borne fiber levels following abatement operations have been reduced to acceptable standards, the CONSULTANT/AIR MONITORING TECHNICIAN will secure and analyze air samples in accordance with the following procedures.

STATIC SAMPLING:

Static clearance sampling from work areas may be conducted by CONSULTANT/AIR MONITORING TECHNICIAN if work conditions exist in which aggressive sampling cannot be conducted. The OWNER will approve all static clearance sampling.

SCHEDULE OF AIR SAMPLES:

General: The number and volume of air samples taken and analytical methods used by the CONSULTANT/AIR MONITORING TECHNICIAN will generally be in accordance with the following schedule. Sample quantities, volumes, and analytical methodologies may vary and will be at the discretion of the CONSULTANT/AIR MONITORING TECHNICIAN.

In each homogeneous Work Area or as determined by the CONSULTANT/AIR MONITORING TECHNICIAN, samples will be collected and analyzed as follows:

LOCATION SAMPLED	SCHEDULED NUMBER OF SAMPLES	FILTER MEDIA
Each Work Area	5	Cellulose Ester

Analysis : Fibers on each filter will be measured using the NIOSH 7400 procedures.

Release Criteria : Final Clearance (Static PCM) of the Work Area is complete when every Work Area sample is below 0.005 fibers per cubic centimeter or the current Base line level, whichever is greater.

Re-cleaning: If the results of analysis of the Work Area samples fails to meet the release criteria, Final Clearance is incomplete, re-cleaning per section 01580 is required, and retesting is required until release criteria is met.

LABORATORY TESTING: The CONSULTANT/AIR MONITORING TECHNICIAN will be employed by the OWNER to perform laboratory analysis of the air samples.

PART 2 -PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

CONTAINMENT

SECTION 01500

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

PART 2 - PRODUCTS

Plastic Sheeting: A single polyethylene film in the largest sheet size possible to minimize seams, 4 or 6 mils thick as indicated, translucent or opaque or black, as indicated.

Fire Retardant Plastic Sheeting: When working near hot equipment, in fire potential area, or otherwise required provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films.

Reinforced Plastic Sheeting: Provide nylon-reinforced, laminated polyethylene film.

Spray Plastic: Provide spray plastic in aerosol cans or premixed for spray application which is formulated to adhere gently to surfaces and remove cleanly by peeling of at the completion of the work. Use of spray plastic must be approved by the CONSULTANT/AIR MONITORING TECHNICIAN.

Adhesive Tape: Provide adhesive tape in 2" or 3" widths as indicated or required, with an adhesive which is formulated to aggressively stick to sheet polyethylene and other surfaces in a wet, humid, hot environment.

Spray Adhesive: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene, and other surfaces in a wet, humid, hot environment. Use only on surfaces not scheduled to be salvaged, or on surfaces which can be cleaned of the spray adhesive.

View Window: Provide 1/4" thick, 18" x 24" minimum clear plastic window(s) to be located to provide view into each Containment Area at location as directed by the CONSULTANT/AIR MONITORING TECHNICIAN. Windows are required for every containment area. Window Height shall be no higher than 4.5 feet from ground level.

Paint: Provide luminescent paint capable of adhering to sheet polyethylene in a wet, humid, hot environment.

PART 3 - EXECUTION

SEQUENCE OF WORK:

Carry out work of this section sequentially. Complete each activity before proceeding to the next, except as may be modified by the CONSULTANT/AIR MONITORING TECHNICIAN to meet Project conditions.

ALTERNATE METHODS OF CONTAINMENT:

Alternate methods of containing the Work Area may be submitted to the CONSULTANT/AIR MONITORING TECHNICIAN for review in accordance with procedures set forth in Section 01360. Do not proceed with any such method(s) without prior approval of the CONSULTANT/AIR MONITORING TECHNICIAN.

WARNING SIGNAGE:

Provide Warning Signs meeting regulatory requirements generally reading as follows:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH

Signage shall be placed at approaches to the Work Area at such positions that personnel will have adequate time to take precautions. Post signage so as to not be in view of the general public inside or outside of the building.

Post preliminary signs in public areas reading similar to "CAUTION - CONSTRUCTION AREA - KEEP OUT". Provide visual barriers between preliminary signs and required signage as necessary to prevent undue public view of required signage.

REQUIRED DOCUMENTS:

Post required documents in accordance with Texas Asbestos Health Protection Rules 295.58(j)

- Asbestos Information Poster
- Copies of Violations

Provide required documents available on site in accordance with Texas Asbestos Protection Rules 295.58 (k).

- EPA " Green Book"
- Appropriate publications of Federal Standards
- Recommended Work Practices for Removal of Resilient Floor Coverings", if method is utilized.

TEMPORARY FACILITIES:

Provide temporary facilities per Section 01380, including temporary disconnection or isolation of existing electrical systems within the abatement work areas.

WORKER PROTECTION:

Provide Worker Protection per Section 01700.

RESPIRATORY PROTECTION:

Provide Respiratory Protection per Section 01710.

VENTILATION SYSTEM:

Provide Ventilation System per Section 01530.

CRITICAL BARRIERS:

Decontaminate Surfaces in areas to receive Critical Barriers with a HEPA vacuum and by wet wiping (if surface can be wet wiped) per Section 01510 prior to installation of Critical Barriers.

Completely Separate the Work Area from other portions of the building and/or the exterior with plastic sheeting, 6 mil (min) thickness, sealing perimeter and seams with adhesive tape and/or spray adhesive.

Individually seal ventilation openings, wall mounted fixtures, doorways, windows, and other openings into the Work Area with adhesive tape or with plastic sheeting true 6 mil (min) thickness secured in place with adhesive tape.

Maintain seal until Work, including Final Clearance, is completed. Exercise care in sealing active lighting and other fixtures to avoid melting or burning of plastic sheeting. Provide ventilation for equipment, such as electrical transformers, as necessary.

Provide plastic sheeting barriers at least true 6 mil in thickness as required to completely seal openings from the Work Area into adjacent areas. Seal the perimeter and seams of plastic sheeting barriers with adhesive tape.

PRE-CLEANING (DECONTAMINATION):

Decontaminate wall, floor and ceiling surfaces, within the Work Area with a HEPA vacuum and by wet wiping (if surface can be wet-wiped) per Section 01510.

Decontaminate furniture, carpeting, fixtures, equipment, and/or supplies within the Work Area with a HEPA vacuum and by wet wiping (if surface can be wet-wiped) per Section 01510, prior to being moved or covered. Decontamination of interior surfaces of enclosed cabinets, drawers, equipment, etc, is not required, unless otherwise indicated.

ACCESS TO ACM:

Remove built-in construction items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, cabinets, casework, doors and window trim, moldings, etc., which cover surfaces involved with the Work.

Decontaminate with a HEPA vacuum and by wet wiping (if surface can be wet-wiped) per Section 01510.

Reinstall removed items upon completion of Work with materials, finishes, and workmanship to match existing installations prior to start of Work to the satisfaction of the CONSULTANT/AIR MONITORING TECHNICIAN

CARPET/HARDWOOD FLOORING:

Cover Carpeting and Hardwood Floors (where occurs) with a minimum of one (1) additional layer of true 6 mil plastic sheeting to protect carpet or wood as critical barrier if carpeting or wood flooring is to remain in place during Work. Place corrugated cardboard sheets between the poly to protect the carpet or wood flooring.

DECONTAMINATION UNITS:

Provide Decontamination Units per Section 01520.

CONTAINMENT BARRIERS:

Provide Containment Barriers on surfaces which are not scheduled to be removed as ACM.

Provide two (2) layers of plastic sheeting Containment Barriers on floor areas to remain intact until removed.

Cover floor of Work Area with a minimum of two (2) individual layers of plastic sheeting, true 6 mil (min) each, turned up walls at least twelve (12) inches. Form a sharp right angle bend at junction of floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Seal seams using both spray adhesive and adhesive tape.

Locate seams in top layer at a minimum of six (6) feet from, or at right angles to, seams in bottom layer. Install plastic sheeting so that top layer can be removed independently of bottom layer

Cover Containment Barriers in areas where scaffolding or similar equipment is to be used with protection board (plywood, hardboard, or suitable material) of sufficient thickness to protect plastic sheeting from punctures and tears. At completion of abatement work, wrap protection board with two (2) layers of true 6 mil plastic sheeting and move to next Work Area, or dispose of as asbestos-contaminated waste materials.

Provide two (2) layers of plastic sheeting Containment Barriers on wall and ceiling areas to remain intact until removed.

Cover walls in Work Area with a minimum of two (2) layers of plastic sheeting, true 4 mil (min), supported as required to maintain barrier intact. Seal perimeters and seams, including the joining with the floor sheeting, with spray adhesive and adhesive tape.

Emergency Exits: At each existing door and opening from the Work Area, provide the following means for emergency exiting. Arrange exit door so that it is secure from outside the Work Area but permits exiting from the Work Area. Mark outline of door on Containment Barriers with luminescent paint or tape at least one inch (1") wide. Hang a razor knife suitable for cutting through the Containment Barriers on a string beside outline. Tape or paint with luminescent paint the word "EXIT" inside the outline in letters at least six inches (6") high and one inch (1") wide.

View Windows: Provide a 18" x 24" by 1/4 inch thick (min) clear plastic view window or windows into Containment areas to allow view to full extent possible. Locate as directed by the CONSULTANT/AIR MONITORING TECHNICIAN. Top of window to be no more than 5' from the bottom of the poly.

Elevators: If an elevator is permitted to be used by the **CONTRACTOR**, in addition to other requirements, cover walls, floor and ceiling of elevator with two (2) layers of 6 mil plastic sheeting. Arrange entry to Work Area so that elevator door is in a positively pressurized space outside the clean room of the Decontamination Unit. At completion of the Work, clean elevator per Section 01580. Do not use elevators for oversized items.

Stairs and Ramps: Do not cover stairs or ramps with unsecured plastic sheeting. Where stairs or ramps are necessary to be covered with plastic sheeting, provide treads securely held in place, over the plastic sheeting. Do not cover rungs or rails with protective materials.

Drop Cloth: Provide on the floor and wall areas as a Drop Cloth a single layer of plastic sheeting (6 mil on floor, 4 mil on wall) in Work Areas during removal operations. Turn floor Drop Cloth up walls at least eighteen (18) inches. Form a sharp right angle bend at junction of floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Overlap wall Drop Cloth twelve (12) inches at floor. Seal seams using both spray adhesive and adhesive tape.

Install Drop Cloth at the beginning of each work shift. Drop cloth needs only to be sufficient coverage for work of that shift.

Remove Drop Cloth at end of each work shift or as work in an area is completed. Fold Drop Cloth toward center of sheet and dispose as ACM.

Keep material on sheet continuously wet until bagged.

Install Walkways of 6 mil plastic sheeting between active removal areas and decontamination units to protect Containment Barriers from tracked material. Install walkways at the beginning of, and remove at the end of each work shift.

EXTENSION OF WORK AREA:

If the Containment Barrier is breached in any manner that could allow the passage of debris or airborne fibers, then add the affected area to the Work Area and provide Temporary Containment as required by this Section.

PRE-CLEANING AND DECONTAMINATION PROCEDURES

SECTION 01510

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF THE WORK:

The Work includes decontamination of areas prior to construction of Temporary Containment.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION

RESPIRATORY AND WORKER PROTECTION:

Provide Worker Protection per Section 01700.

Provide Respiratory Protection per Section 01710.

WET CLEANING (WET WIPING):

Accomplish wet cleaning during decontamination with lint-free towels (paper or disposable rags).

Immerse towel in container of water with surfactant or diluted removal encapsulant.

If a removal encapsulant is used, test first to insure that it will neither leave a residue that will impede visual inspection nor become gummy during cleaning.

Wring out; fold into quarters.

Wipe surface once and re-fold to a fresh face of cloth. Proceed in this manner until available faces of towel have been used.

Dispose of towel as ACM.

Do not place towel back in container to rinse out or for any other purpose. If a used towel comes in contact with water, dispose of water as ACM and decontaminate container.

Application of additional removal encapsulant may be required to facilitate cleaning of strongly adhered material.

HEPA VACUUM PROCEDURES:

Clean small areas of debris using the following procedures:

Remove small debris with the HEPA vacuum.

HEPA vacuum surfaces of pieces too large to be removed by the suction of the HEPA vacuum.

Pick up such pieces and place in the bottom of a Disposal Bag.

Place pieces in the bag without dropping and avoiding unnecessary disturbance of material.

Remove remaining visible debris with HEPA vacuum.

HEPA vacuum an area three (3) feet beyond the location in which visible debris was found. Vacuum in two directions each at right angles to the other.

Clean wall, ceiling, and floor surfaces using the following procedures:

HEPA vacuum surfaces in the room starting with the ceiling, then vacuum starting at the top of walls and working downward to the floor. Next begin at the corner of floor farthest from Work Area entrance and work towards entrance.

HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height.

Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16" of hard surface floors.

Vacuum the floor in parallel passes with each pass overlapping the previous by one half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.

DECONTAMINATION UNITS

SECTION 01520

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF WORK:

Provide personnel and equipment decontamination facilities.

PART 2 - PRODUCTS

Plastic Sheeting: A single polyethylene film in the largest sheet size possible to minimize seams, 4 or 6 mils thick as indicated, translucent or opaque, as indicated.

Fire Retardant Plastic Sheeting: When working near hot equipment, in fire potential area, or otherwise required provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films.

Reinforced Plastic Sheeting: Provide nylon-reinforced, laminated polyethylene film.

Spray Plastic: Provide spray plastic in aerosol cans or premixed for spray application that is formulated to adhere gently to surfaces and remove cleanly by peeling off at the completion of the Work. Use of spray plastic must be approved in advance by the CONSULTANT/AIR MONITORING TECHNICIAN

Adhesive Tape: Provide adhesive tape in 2" or 3" widths as indicated or required, with an adhesive which is formulated to aggressively stick to sheet polyethylene and other surfaces in a wet, humid, hot environment.

Spray Adhesive: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene, and other surfaces in a wet, humid, hot environment. Use only on surfaces not scheduled to be salvaged, or on surfaces that can be cleaned of the spray adhesive.

Shower Pan: Provide one piece waterproof shower pan fabricated from seamless fiberglass, stainless steel with welded seams, or other system acceptable to the CONSULTANT/AIR MONITORING TECHNICIAN.

Shower Walls and Roof: Provide walls and roof fabricated from impervious, waterproof material. Structurally support as necessary for stability.

Shower Head and Controls: Provide a factory made, personal use, commercial shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is made from inside the shower without outside aid.

Filters: Provide cascaded filter units on drain lines from showers or other water source carrying asbestos-contaminated water from the Work Area. Provide units with disposable filter elements as indicated below.

Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.

- | | | |
|------------------|---|---------------------------------------|
| Primary Filter | - | Pass particles 20 microns and smaller |
| Secondary Filter | - | Pass particles 5 microns and smaller |

Lumber: Provide kiln dried lumber of any grade or species.

Sump Pump: Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump two (2) times the flow capacity of showers or hoses supplying water to the sump, through filters loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.

Disposable Decontamination Unit: The **CONTRACTOR** may provide, as an option, disposable Decontamination Units fabricated utilizing corrugated cardboard or other non-cleanable materials. Units shall be disposed as ACM.

PART 3 - EXECUTION

CONSTRUCTION:

Walls and Ceiling: Construct airtight walls and ceiling using plastic sheeting, 6 mil (min) in thickness. Attach to existing building components or to a temporary framework.

Floors: Use a minimum of two (2) layers of plastic sheeting, 6 mil (min) in thickness, to cover floors (including under shower pan). Use only translucent or clear plastic sheeting to cover floors.

Curtained Doorways: Fabricate from two (2) overlapping layers of plastic sheeting with openings a minimum of three feet (3') wide. Configure so that sheeting overlaps adjacent surfaces. Weight sheets at bottom so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of four feet (4') between entrance and exit of any room. Attach top and right side of outer sheet to doorway frame. Attach top and left side of inner sheet to doorway frame.

Ceiling: If the decontamination unit is located within an area with workers overhead, provide the top of the unit with a minimum 1/4 inch hardboard or 1/2 inch plywood "ceiling" with plastic sheeting, 6 mil (min) in thickness, covering the top of the "ceiling".

Visual Barrier: Where the decontamination unit is within view of occupied areas, provide a visual barriers of opaque plastic sheeting or other suitable material so that worker privacy is maintained and work procedures are not visible to building occupants.

Solid Barrier: Where the area adjacent to the decontamination unit is accessible to building occupants, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal framing covered with minimum of 1/4 inch thick hardboard or 1/2 inch plywood. Where a solid barrier is provided, sheeting need not be opaque.

Alternate methods of providing decontamination facilities may be submitted to the CONSULTANT/AIR MONITORING TECHNICIAN for review. Do not proceed with alternate method(s) without authorization of the CONSULTANT/AIR MONITORING TECHNICIAN.

PERSONNEL DECONTAMINATION UNIT:

General: Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, with a minimum of a Changing Room, Shower Room, and Equipment Room.

Require persons, without exception, to pass through this Decontamination Unit for entry into and exiting from the Work Area.

Do not allow parallel routes for entry or exit.

Provide temporary lighting within Decontamination Units as necessary.

Electrical: Provide control panel at Changing Room or other outside location to accommodate **CONTRACTOR's** equipment. Provide complete ground-fault circuit protection for electrical service from control panel, and in accordance with applicable regulations.

Emergency Numbers: Post clearly in Changing Room (Clean Room) the telephone numbers and locations of emergency services including, but not limited to, fire, ambulance, doctor, hospital, police, power company, telephone company.

Signs: Post an approximately twenty inch by fourteen inch (20" x 14") manufactured danger sign at each entrance to the Work Area displaying the following general legend, and as required by applicable regulations.

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH

Changing Room (Clean Room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.

Locate so that access to Work Area from Changing Room is through Shower Room.

Separate Changing Room from other building areas by curtained doorway.

Require workers to remove street clothes in this room, dress in clean disposable coveralls, and don respiratory protection equipment.

Do not allow asbestos-contaminated items to enter this room.

An existing room may be utilized as the Changing Room if it is suitably located and of a configuration whereby workers may enter the Changing Room directly from the Shower Room. Protect surfaces of such Changing Room with plastic sheeting similar to Containment Barriers as set forth in Section 01500. Authorization for this configuration must be obtained from the CONSULTANT/AIR MONITORING TECHNICIAN prior to start of Work.

Maintain floor of Changing Room dry and clean at all times.

Damp wipe surfaces after each shift change with a disinfectant solution.

Provide a continuously adequate supply of disposable bath towels.

Provide storage facilities per employee as required with additional facilities for CONSULTANT/AIR

MONITORING TECHNICIAN and anticipated visitors.

Shower Room: Provide a completely watertight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Changing Room, or for showering by workers headed out of Work Area after undressing in the Equipment Room.

Construct room by providing a Shower Pan and Shower Walls in a configuration that will cause water running down walls to drip into pan.

Provide Shower Head and Controls at convenient location securely attached to shower wall.

Provide splash-proof entrances to Changing and Equipment Rooms with two (2) curtained doorways.

Provide hot and cold water and drainage, as necessary for a complete and operable shower. Provide adequate hot water supply for number of persons using shower facilities.

Provide a freely draining floor in shower pan at minimum one (1) inch from top of pan.

Provide a soap and shampoo dish and a continuously adequate supply of soap and shampoo, and maintain in a sanitary condition.

Arrange so that water from showering does not splash into the Changing or Equipment Rooms.

Provide Sump Pump to pump wastewater through filters to drain.

Change filters as necessary to maintain efficiency.

Clean debris from shower pans on a daily basis.

Provide minimum of 10 – 15 gallon portable water heaters or Insta Hot Heaters for all projects.

Equipment Room (Dirty Room): This is a change and transit area for workers. Separate this room from the Work Area by a plastic sheeting curtained doorway. Require work equipment, footwear and additional contaminated work clothing to be left in Equipment Room.

Provide Drop Cloth per Section 01500 in Equipment Room for each shift. Remove and dispose of Drop cloth after each shift.

Wet wipe surfaces in Equipment Room after each shift change.

Disposable Decontamination Unit: Disposable units shall be utilized at one location per containment and then disposed as ACM. Moving a disposable unit from one location to another is prohibited.

PERSONNEL DECONTAMINATION SEQUENCE:

Entering Work Area:

Worker shall enter Changing Room, remove street clothing, put on clean disposable overalls and respirator, and pass through the Shower Room into the Equipment Room.

Additional clothing and equipment left in Equipment Room needed by the worker shall be put on in the Equipment Room.

Worker shall then proceed to Work Area.

Exiting Work Area:

Before leaving the Work Area, require the worker to remove gross contamination and debris from overalls and feet. The worker shall then proceed to the Equipment Room and remove disposable clothing. Removed disposable clothing shall be placed in a disposal bag for disposal. Respiratory protection equipment shall not be removed.

Refer to Section 01700 for Shower Room decontamination procedures.

After showering, the worker shall proceed to the Changing Room and dress in either new coveralls for another entry or street clothes if leaving.

EQUIPMENT (BAG-OUT) DECONTAMINATION UNITS:

General: The **CONTRACTOR** may provide an Equipment and Bag-out Decontamination Unit consisting of a serial arrangement of rooms (Wash Down Station/Wash Room, Holding Room, Clean Room) for removal of equipment and material from Work Area. Personnel shall not enter or exit Work Area through Equipment Decontamination Unit.

Wash Down Station: Provide an enclosed completely watertight shower unit located in the Work Area just outside Wash Room as an equipment, bag and container cleaning station.

Construct shower by providing a Shower Pan and Shower Walls in a configuration that will cause water running down walls to drip into pan.

Provide suitable type of fixtures and controls for washing equipment, bags and containers.

Provide splash-proof entrance to Work Area with curtained doorway.

Provide a freely draining floor in shower pan at minimum one (1) inch from top of pan.

Provide Sump Pump to pump wastewater through filters to drain. Change filters as necessary to maintain efficiency.

Clean debris from shower pans on a daily basis.

Wash Room (Dirty Room): Provide Wash Room for cleaning of equipment, bags and containers passed from the Work Area. Construct Wash Room of adequate size and located so that equipment, bags and containers, can be wiped clean and passed to the Holding Room. Separate this room from the Wash Down Station by a curtained doorway.

Holding Room: Provide Holding Room as a drop location for equipment, bags and containers passed from the Wash Room. Size and locate so that equipment, bags and containers cannot be passed directly from the Wash Room through the Holding Room to the Clean Room. Separate Holding Room from the adjacent rooms by curtained doorways.

Clean Room: Provide Clean Room to isolate the Holding Room from the building or exterior. Size and locate to provide access to the Holding Room. Separate Clean Room from the building or exterior by a curtained doorway.

EQUIPMENT (BAG-OUT) DECONTAMINATION SEQUENCE:

Remove equipment, bags and containers from the Work Area through the Equipment Decontamination Unit according to the following procedure:

At Wash-down Station, thoroughly wash equipment, bags and containers and pass items into Wash Room.

At Wash Room, wet clean equipment, bags and containers per Section 01510 and pass items into Holding Room. Workers shall not enter the Holding Room from the Wash Room.

Enter Holding Area from Clean Room and remove decontaminated items through the Clean Room. Workers shall not enter the Wash Room from the Holding Room.

CLEANING OF DECONTAMINATION UNITS:

Clean debris and residue from inside of Decontamination Units on a daily basis. Wet wipe or wash surfaces when necessary to maintain sanitary conditions.

If the Changing Room of the Personnel Decontamination Unit or the Clean Room or Holding Room becomes contaminated, abandon the Decontamination Unit and erect a new Decontamination Unit. The former Unit may be used as an inner section of the new "Dirty Room".

VENTILATION SYSTEM

SECTION 01530

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

PART 2 - PRODUCTS

VENTILATION UNITS:

General: Supply adequate number of asbestos air filtration exhaust ventilation units. Each unit shall include the following:

Cabinet: Constructed of steel or other durable materials able to withstand damage from rough handling and transportation. Provide cabinet widths to accommodate doorways. Cabinet shall be factory sealed to prevent asbestos-containing material from being released during use, transport, or maintenance. Access to and replacement of air filters shall be from intake end. Unit shall be mounted on casters or wheels and shall be clean when arriving on site.

Equipment noted as dirty will be rejected and removed from project site.

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

HEPA Filters: The final filter shall be a HEPA type. Provide filter media folded into closely pleated panels. Completely seal the filter media edges with a structurally rigid frame. A continuous rubber gasket shall be located between the filter and the filter housing to form a tight seal.

Each filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 % when challenged with 0.3 UM dioctyl phthalate (DOP) particles. Testing shall be in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Each filter shall bear a UL586 label to indicate ability to perform under specified conditions.

Each filter shall be marked with the name of the manufacturer, serial number, airflow rating, efficiency and resistance, and the direction of the airflow.

Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. The first-stage pre-filter shall be a low-efficiency type (e.g., for particles 10 UM and larger). The second-stage (or intermediate) filter shall have a medium efficiency (e.g., effective for particles down to 5 UM). Pre-filters and intermediate filters shall be installed either on or in the intake grid of the unit and held in place with special housings or clamps.

Instrumentation: Each unit shall be equipped with a Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed. Magnehelic gauge or manometer must be working properly. Equipment which is not working properly must be removed from the containment and replaced with properly functioning instrumentation. **CONTRACTOR** will be issued a stop work order if they cannot provide proper working instrumentation in order to evaluate pressure differential of containment area.

A table indicating the usable air-handling capacity for various static pressure readings on the Magnehelic gauge shall be affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point.

Provide units equipped with an elapsed time meter to show the total accumulated hours of operation.

Safety and Warning Devices: Each unit shall have an electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter. Units shall be equipped with an automatic shutdown system to stop fan in the event of a major rupture in the HEPA filter or blocked air discharge.

Warning lights are required to indicate normal operation, excess pressure drop across the filters (i.e., filter overloading) and inadequate pressure drop (i.e., major rupture in HEPA filter or obstructed discharge).

Electrical components shall be approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit shall be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet shall be grounded.

PART 3 - EXECUTION

GENERAL:

The following is intended to provide a satisfactory reduced air pressure and ventilation rate in the Work Area.

PRESSURE DIFFERENTIAL:

Provide a fully operational ventilation system within the Work Area maintaining continuously a pressure differential across Work Area containment of - 0.02 inches of H₂O.

PREPARATION OF THE WORK AREA:

Determining ventilation requirements: Provide a sufficient number of fully operational ventilation units to provide the equivalent of a minimum of one air change every twelve (12) minutes, within the contained Work Area. Determine total ventilation requirement in cubic feet per minute (cfm) for the Work Area by dividing area volume by the air change rate.

$$\text{Ventilation Requirement (CFM)} = \frac{\text{Volume of Work Area (cu.ft.)}}{12 \text{ (min)}}$$

Determining number of units needed by dividing the ventilation requirement (CFM) above by capacity of ventilation unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential at which loaded filter warning lights activate) indicated on the unit's labeled operating characteristics.

$$\text{Number of Units} = \frac{\text{Ventilation Requirement (CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}}$$

Location of Ventilation Units: Locate ventilation unit(s) so that makeup air enters Work Area primarily through decontamination facilities and traverses Work Area as much as possible. Position the ventilation unit(s) at a maximum distance from the worker access opening or other makeup air sources.

Place exhaust end of unit or exhaust duct through an opening in the containment barrier or wall. Thoroughly seal opening against unit or duct.

Vent to exterior of building, unless authorized otherwise by the CONSULTANT/AIR MONITORING TECHNICIAN. As necessary, provide additional lengths of flexible or rigid duct connected to the exhaust end of unit and routed to the nearest exterior opening.

Auxiliary Makeup Air Inlets: Provide where required for proper air flow through the Work Area in locations approved by the CONSULTANT/AIR MONITORING TECHNICIAN by making openings in the plastic sheeting that allows air from outside the Work Area into the Work Area.

Locate auxiliary makeup air inlets as far as possible from the ventilation unit(s), off the floor, preferably near the ceiling, and away from barriers that separate the Work Area from occupied areas. Cover with flaps to reseal automatically if the ventilation system should shut down for any reason. Spray flap and around opening with spray adhesive so that flap seals if closed.

If makeup air is coming from a contaminated or potentially contaminated source, provide a HEPA filter at intake before air enters Work Area. Provide supply air fans to overcome the resistance of the HEPA filter as necessary. A ventilation unit may be used for this purpose. Calculations for air change requirements shall accommodate force makeup air to insure that Work Area remains under reduced air pressure.

OPERATION OF VENTILATION SYSTEM:

Electrical Service: Provide adequate electrical service to ventilation units. Provide separate overload protection devices to each unit such that an overload on one unit will not trip devices of other units in operation.

Testing the System: Test ventilation system prior to start of removal operations. Demonstrate successful operation of ventilation system to CONSULTANT/AIR MONITORING TECHNICIAN during Prep Inspection per Section 01400.

Demonstration of the Operation of the ventilation system to the CONSULTANT/AIR MONITORING TECHNICIAN shall include, but not to be limited to, the following:

Containment Barriers moving lightly in toward Work Area.

Curtained doorways of decontamination units moving lightly in toward Work Area.

Noticeable movement of air through the decontamination unit.

Measurement of the reduced air pressure utilizing a calibrated manometer.

Modify the Ventilation System as necessary to successfully demonstrate the above to the satisfaction of the CONSULTANT/AIR MONITORING TECHNICIAN.

Operation of System during Abatement:

Operate system continuously to maintain a constant reduced air pressure until decontamination of the Work Area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop. If failure of ventilation system occurs, immediately stop abatement work and do not resume until system is fully operating.

Operate system continuously during encapsulating procedures.

Start removal work at a location farthest from the ventilation units and proceed toward the units.

At completion of removal work, allow ventilation system to operate to purge the Work Area with clean makeup air and to remove airborne fibers that may have been generated during removal work.

Operate system continuously until CONSULTANT/AIR MONITORING TECHNICIAN authorizes shut down after successful Final Clearance Air Testing.

Dismantling the System:

Before removal of units from the Work Area, remove and dispose of pre-filters as ACM, clean and seal unit intake and exhaust openings with 6 mil plastic sheeting, decontaminate exterior of units and seal entire unit, except rolling assembly, with 6 mil plastic sheeting.

REMOVAL OF ASBESTOS-CONTAINING MATERIALS

SECTION 01540

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

SUBMITTALS:

Include manufacturer's data and disposal plan for proposed use of Over-sized Disposal Bags in the Plan of Action, Section 01000:

PART 2 - PRODUCTS

PLASTIC SHEETING, ADHESIVE TAPE, etc: Refer to Section 01500.

WETTING AGENTS:

Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of ACM. Use a material which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of 50% polyoxyethylene ether and 50 % polyoxyethylene ester mixed with five gallons of water.

DISPOSAL BAGS: Provide single layer, 6 mil (min) thickness, leak tight, manufactured polyethylene bags. Provide bags with required DOT marking "RQ, Asbestos, NA 2212" and diamond shaped figure with black stripes on top half and 9" on bottom half.

DISPOSAL CONTAINERS: Provide manufactured rigid plastic or coated cardboard drums or boxes, leak-tight, with mechanically sealed lids specifically intended for disposal of asbestos-containing waste materials. Containers manufactured to meet more stringent disposal requirements will be acceptable.

DISPOSAL BAG LABELS: Provide labels with OWNER's name, project Site address and the following warning, and in accordance with regulatory requirements.

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AVOID BREATHING AIR BORNE ASBESTOS

PART 3 - EXECUTION

TEMPORARY CONTAINMENT:

Provide Temporary Containment per Section 01500.

GENERAL REMOVAL CRITERIA (GROSS REMOVAL):

Apply wetting agents in strict accordance with manufacturer's instructions.

Thoroughly wet material to be removed prior to disturbance to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of wetting agent (amended water or removal encapsulant) applied with airless spray equipment. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow adequate time for wetting agent to penetrate material thoroughly. Spray material repeatedly during the removal work to maintain a continuously wet condition.

Perforate outer covering of material which has been painted or jacketed in order to allow penetration of wetting agent, or where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into air.

Mist work area continuously with amended water as necessary to reduce airborne fiber levels. Apply mist with airless spray equipment.

The use of compressed air or other non-airless type equipment will not be permitted.

Remove saturated material in manageable quantities. Do not allow material to dry out.

Control the descent to staging or floor below. If over twenty (20) feet use drop chute to contain material through descent.

Thoroughly clean substrate, removing remaining residue using stiff bristled brush or combination of methods to provide effective results.

PIPE INSULATION REMOVAL:

Wet and remove material as Indicated above.

Cut bands holding preformed pipe insulation, slit jackets at seams, remove and hand-place in a disposal bag. Do not drop to floor.

Remove job molded fitting insulation in pieces as large as practical and hand place in a disposal bag. Do not drop to floor.

Where pipe fitting insulation is removed from pipe with straight runs insulated with fibrous glass or other non-asbestos -containing fibrous material, remove fibrous material six (6) inches from the point of contact with the asbestos-containing insulation and seal exposed ends of remaining pipe insulation.

DISPOSAL BAG PROCEDURE:

Place removed material while still in wet condition into disposal bags.

Evacuate air from disposal bags with a HEPA vacuum before sealing.

Twist neck of bags, bend over and seal with minimum three (3) wraps of adhesive tape.

Clean outside of bags and move to decontamination unit.

Place second bag around first immediately prior to moving through decontamination unit. Evacuate air, twist neck, and seal the second bag in the same manner as the first.

Wash bags in shower, wet clean, and pass cleaned bags to adjacent room.

Attach labels to each disposal bag as indicated and in accordance with regulatory requirements.

Dispose of labeled bags per Section 01590.

DISPOSAL CONTAINER PROCEDURE:

Place removed material while still in wet condition into disposal containers. Seal containers securely.

Clean outside of containers and move to decontamination unit.

Wash containers in shower, wet clean, and pass cleaned containers to adjacent room.

Attach label to each container as indicated and in accordance with regulatory requirements.

Dispose of labeled containers per Section 01590.

REMOVAL OF RESILIENT FLOOR TILE AND MASTIC SECTION 01545

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF THE WORK:

Removal of asbestos containing resilient floor tile and/or associated mastic adhesive.

SUBMITTALS:

Before Start of Work: Submit the following to the CONSULTANT/AIR MONITORING TECHNICIAN for review:

OSHA Material Safety Data Sheet for solvents, encapsulants, and other chemicals utilized or stored at the Project site.

Manufacturer's Product Information Sheet for each type of mechanical equipment utilized in the Work Area.

PART 2 - PRODUCTS

PLASTIC SHEETING, ADHESIVE TAPE, etc: Refer to Section 01500.

WETTING AGENTS: Refer to Section 01540.

REMOVAL EQUIPMENT:

Mechanical equipment utilized shall be owned by the **CONTRACTOR**.

Provide machinery that meets the following minimum standards:

- will not damage the sub floor
- will not pulverize or crush the resilient floor covering
- causes release of flooring material with minimal destructive force

Use of the following types of machinery will not be permitted:

Shot Blaster: designed to aggressively break up flooring material with destructive propellants.

Rotary Machine: designed to aggressively break up flooring material with centrifugally controlled spikes or blades.

Moving blade machines: designed to aggressively break up flooring material with cutting blade or blades which vibrate or move independently of machine housing.

Floor Buffers: High speed machines rated at 190 RPM or greater. (Low speed floor buffers, rated at less than 190 RPM, will be permitted).

SEALANTS: Provide water resistant sealant compatible with mastic solvent.

CAULKING: Provide acrylic latex, one-part, non-sag caulk.

SOLVENT: Provide solvent specifically formulated for removal of resilient flooring mastic without leaving residual odors.

PART 3 - EXECUTION

TEMPORARY CONTAINMENT: Provide Temporary Containment per Section 01500.

WORK AREA PROTECTION:

Unless Work Area is scheduled for demolition, protect walls from water, solvent and machine damage. **CONTRACTOR** may utilize four (4) mil. poly splash guards if floor tiles will not be broken.

Utilize sealant to prevent wetting and chemical solutions from leaking under walls.

Provide leak-tight seal over floor drain and other floor openings.

VENTILATION REQUIREMENTS:

Provide ventilation adequate to prevent release of detectable chemical odors and fumes outside the Work Area.

ELECTRICAL CORDS:

Suspend electrical cords above floor during operation of mechanical equipment and take precautions to prevent suspended cords from becoming an impediment or hazard to workers.

REMOVAL PROCEDURES:

CONTRACTOR may utilize resilient floor covering institute (RFCI) methods and four (4) foot splash guards with negative pressure if floor tile will not be made friable during the course of removal activities. Should flooring be made friable during RFCI methods, **CONTRACTOR** will cease work and create full enclosure of work area.

Apply wetting agents per Section 01540.

Utilize hand tools and/or mechanical equipment for gross and detail removal work.

Apply solvent to mastic area and remove utilizing hand tools and/or mechanical equipment in accordance with manufacturer's instructions.

CLEANING:

Vent and/or clean Work Area, as necessary, to remove residual solvent odors.

CAULKING:

If exposed edges of resilient flooring remain (ex. inaccessible areas or limits of required removal) seal edges with a continuous bead of caulking, neat, trim and professionally installed.

DISPOSAL:

In addition to other disposal requirements, remove and dispose of chemical solution and water control materials as ACM, including, but not limited to sealants and absorption materials.

REMOVAL OF PIPE INSULATION (GLOVE-BAG METHOD)

SECTION 01550

PART 1 -GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF THE WORK:

Removal of asbestos-containing piping insulations within containment or enclosure by the Glove-bag method.

PART 2 -PRODUCTS

PLASTIC SHEETING, ADHESIVE TAPE, etc:

Refer to section 01500

WETTING AGENTS:

Refer to section 01540

GLOVE-BAG:

Provide minimum 6 mil polyethylene, or equivalent plastic sack, with two sealed inward projecting long sleeved gloves or mittens, pre-printed with the same warning notice as disposal bag, equipped with a pouch for storage of tools, with designated location for wand or HEPA vacuum wand, and sufficient capacity to hold removed materials and permit proper sealing. Utilize vertical glove-bags for removal of vertical pipe insulations.

SPRAYER:

Provide a hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or spray of liquid under pressure.

PART 3 -EXECUTION

TEMPORARY CONTAINMENT: Provide Temporary Containment per section 01500, with the following exception:

Containment Barriers: The CONTRACTOR may, at his option provide a single layer containment barrier on the floor in lieu of the two (2) layers indicated in section 01500.

REMOVAL OF PIPE INSULATION (GLOVE-BAG METHOD):

Inspect pipe insulation in the area to be removed. Wrap damaged pipe insulation (broken Lagging, hanging, etc) with plastic sheeting and secure with adhesive tape in a "candy-strip" pattern. Place one layer of adhesive tape around undamaged pipe insulation at each end where the Glove-bag will be attached.

Slit top of the Glove-bag open (if necessary) and cut down the sides to accommodate the size of the pipe insulation (approximately two (2) inches longer than the pipe insulation diameter).

Place necessary tools into pouch located inside Glove-bag.

Place one strip of adhesive tape along the edge of the open top slit of Glove-bag for reinforcement.

Place the Glove-bag around the section of pipe insulation, then staple top slit together through reinforcing adhesive tape.

Apply adhesive tape at the ends of the Glove-bag to the pipe insulation where previously covered with adhesive tape.

Test seal using smoke tube and aspiration bulb. Place tube into water sleeve (two-inch opening to Glove-bag) squeezing bulb and filling bag with visible smoke. Remove smoke tube and twist water sleeve closed. While holding the water sleeve tightly, gently squeeze Glove-bag and inspect for smoke leaks. If leak occur, tape close using adhesive tape and re-test.

Insert wand from garden sprayer through water sleeve. Adhesive tape water sleeve tightly around the wand to prevent leakage.

Thoroughly wet insulation with wetting agent and allow it to soak in. Wet adequately to penetrate and soak material through to substrate. Keep insulation continuously wet throughout remainder of removal process.

Cut insulation at each end of the section to be removed. Make cut neat and square if remaining insulation is not scheduled for subsequent removal.

Remove tools with wetting agent inside the bag and place back into pouch.

Remove insulation using tools as necessary Place pieces in bottom of bag without dropping.

Using scrub brush, rags and wetting agent, scrub and wipe down the exposed pipe.

Remove water wand from water sleeve and attach nozzle from HEPA vacuum. Operate vacuum only as necessary to collapse the bag.

From outside the bag, pull the tool pouch away from the bag. Place adhesive tape over twisted portion and then cut the tool bag from the Glove-bag, cutting through the twisted tape section. Contaminated tools may then be placed directly into next Glove-bag without cleaning.

Alternatively, tools may be decontaminated and removed from Work Area. Dispose of rags and scrub brush as ACM.

With removed insulation in the bottom of the bag, twist the bag repeatedly and apply adhesive tape to keep material in the bottom during the removal of the Glove-bag from the pipe.

Slip a disposal bag over the Glove-bag (still attached to the pipe). Remove tape or cut Glove-bag, open top of the Glove-bag and fold Glove-bag down into disposal bag.

Collapse disposal bag using HEPA vacuum, twist neck of bag, seal with minimum three (3) wraps of adhesive tape, bend over and seal again with minimum three (3) wraps of adhesive tape.

Seal exposed ends of remaining pipe insulation at completion of removal work.

REMOVAL OF EXTERIOR ROOFING AND SIDING PANELS SECTION 01565

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

DESCRIPTION OF THE WORK:

Removal of asbestos-containing cement fiber roofing and siding panels, not requiring use of temporary containment.

PART 2 - PRODUCTS

PLASTIC SHEETING, ADHESIVE TAPE, etc: Refer section 01500

WETTING AGENTS: Refer to section 01540

PART 3 - EXECUTION

VISUAL BARRIER:

Provide temporary visual barriers (minimum: opaque plastic sheeting) to prevent observation of Work activities from other than designated Work Areas. Visual barriers shall remain intact throughout the work, and shall be removed and disposed as ACM after completion of Final Clearance air sampling.

WORK AREA PROTECTION:

Unless otherwise directed, protect building components and contents from damage due to exposure resulting from removal of roofing and/or siding panels.

REMOVAL PROCEDURES:

Apply wetting agents per section 01540

Remove panels intact by carefully removing fasteners and/or anchoring devices.

Place panels in disposal bags, containers or wrap with two (2) layers of plastic sheeting, 6 mil (min.) in thickness, and label as required.

CLEANING

Decontaminate substrate surfaces of Work Area with a HEPA vacuum and by wet wiping per section 01510.

Proceed to applicable portions of section 01580.

REMOVAL OF CONTAINMENT

SECTION 01580

PART 1 -GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Works of this section

SUMMARY:

This section describes procedures following the removal of indicated ACM to the completion of abatement activities, including removal of temporary containment, equipment, supplies, and temporary facilities from the Project site.

SUBMITTALS:

Indicate clearly on submittals finishes or coatings (if any), which may be incompatible with proposed encapsulant.

PRODUCT DELIVERY:

Deliver products per section 01370, and include the following information: name or title of material, manufacturer's stock number and date of manufacture, thinning instructions, and application instructions.

Deliver products together with a copy of the OSHA Material Safety Data Sheet for the material.

PART 2 - PRODUCTS

ENCAPSULANT (LOCKDOWN)

Provide penetrating or bridging type encapsulant specifically designed for use with asbestos containing materials and for application to intended substrates.

Provide encapsulant suitable to receive painted or acoustical finishes.

Fire Safety: Use only materials that have a flame-spread index of less than twenty-five (25), when dry, when tested in accordance with ASTM E-84.

PART 3 - EXECUTION

PRE-ENCAPSULATION PROCEDURES:

Remove all but the bottom most layer of the Contaminated Barriers.

Decontaminate surfaces of remaining Containment Barriers with a HEPA vacuum and by wet wiping per section 01510

LOCKDOWN ENCAPSULATION:

Apply encapsulant in strict accordance with the manufacturer's instructions, including requirements for environmental conditions in the Work Area.

Utilize airless spray equipment with air pressure and nozzle orifices as recommended by the encapsulant manufacturer.

Do not apply excessive coating to cause drips, runs, or thickened build up of material.

Do not apply encapsulant to the mechanical and electrical equipment, moving parts, gauges, glass and similar surfaces.

Allow encapsulant to dry thoroughly, minimum of four (4) hours, before proceeding.

PRE-FINAL CLEARANCE PROCEDURES:

Remove Contaminated Barriers.

Decontaminate exposed surfaces of Work Area, which visually exhibit debris or water contamination with a HEPA vacuum and by wet wiping per section 01510

POST-FINAL CLEARANCE PROCEDURES:

Remove Critical Barriers.

Decontaminate exposed surfaces of Work Area, which visually exhibit debris or water contamination with a HEPA vacuum and by wet wiping per section 01510

Remove Ventilation System.

Remove Decontamination Units.

Decontaminate exposed surfaces at removed Decontamination Units, which visually exhibit debris or water contamination with a HEPA vacuum and by wet wiping per section 01510.

DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL **SECTION 01590**

PART I - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

SUMMARY:

Asbestos-containing waste material shall be disposed as indicated and in accordance with Federal, State, and Local disposal regulations.

The **CONTRACTOR** shall provide for waste material storage, loading, vehicles and equipment, transport, off-loading, and other necessary items of Work associated with disposal of asbestos-containing waste.

Austin Energy maintains a disposal contract for disposal but does not provide transportation of ACM waste.

DISPOSAL FEES:

The **OWNER** shall pay disposal fees associated with the Work unless noted at project walk through.

SUBMITTALS:

Submit proposed transporter and landfill prior to start of Work. Transporter and landfill must be acceptable to the **OWNER**. If either is unacceptable the **CONTRACTOR** shall provide an acceptable substitution.

Submit the evidence of fee payment no later than initial payment request.

Submit waste manifests to the **OWNER** for review (excluding total volume and /or bag count) a minimum of twenty-four (24) hours in advance of the proposed transport. Submit via hand delivery or courier. The **OWNER** will review manifest and forward to jobsite for final signature by onsite City Representative (City Inspector).

Submit copies of waste manifests and landfill receipts to the **CONSULTANT/AIR MONITORING TECHNICIAN** on a weekly basis.

Submit final copies of waste manifests to **OWNER** prior to pay application request.

PART 2 - PRODUCTS

STORAGE CONTAINER:

Provide fully enclosed, metal, lockable storage container (dumpster) for temporary storage of ACM waste material on the Project site, if at **CONTRACTOR'S** option, temporary storage is to be employed.

Line entire storage container with a single layer of plastic sheeting, 6 mil (min) in thickness. Install in a like manner to Containment Barriers per section 01500

Locate storage container in area designated by the **OWNER**.

A vehicle meeting requirements of storage container may be use for temporary storage of ACM waste material.

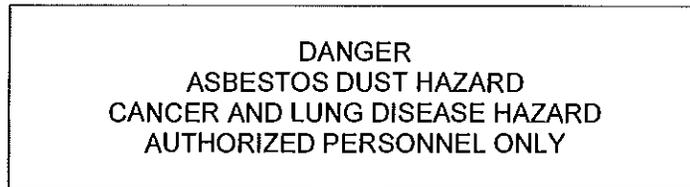
TRANSPORT VEHICLE:

Provide fully enclosed, lockable storage section on transport vehicle used for transport of ACM waste material.

Line entire storage area of transport vehicle with a single layer of plastic sheeting, 6 mil (min) in thickness. Install in a like manner to Containment Barriers per section 01500 .

VEHICLE WARNING SIGN:

Provide a warning sign for each vehicle used to transport asbestos-containing waste materials in accordance with regulatory requirements and include the following legend:



PART 3 -EXECUTION

BAG-OUT PROCEDURES:

Remove disposal bags or containers from the Decontamination Unit and carefully load directly into Storage Container or transport Vehicle.

Provide visual barriers (minimum: opaque plastic sheeting) to obstruct the view of bag-out operations from areas outside the **CONTRACTOR'S** designated area.

Do not store ACM waste material outside of the Work Area except in Storage Container as indicted.

TRANSPORT:

Attach warning sign to vehicles during the loading and unloading of ACM waste material. Sign shall remain visible during loading and unloading activities.

Exercise care before and during transport, to insure that no unauthorized persons have access to the waste material.

Advise the **OWNER** and **CONSULTANT/AIR MONITORING TECHNICIAN**, a minimum of seventy-two (72) hours in advance or as determined by **OWNER'S REPRESENTATIVE**, of intended transport and estimated quantity of material involved.

Carefully off-load bags of containers by hand at the landfill site. Landfill requires use of proper PPE during off-loading of waste materials. Austin Energy will not be liable for remobilization cost due to **CONTRACTOR'S** lack of the proper or no PPE at the landfill.

If bags or containers are broken or damaged, decontaminate intact bags or containers per section 01510, place each damaged bag or container, including debris in two (2) new, clean undamaged bags or a container in the same manner as originally placed, and decontaminate vehicle storage area per section 01510. Dispose of vehicle lining and cleaning materials and supplies as ACM.

All Transportation vehicles will weigh in when entering landfill and weigh-out when leaving landfill, retain receipts from landfill for disposed materials and submit to **OWNERS REPRESENTATIVE**.

WORKER PROTECTION/WORKER TRAINING

SECTION 01700

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

SUMMARY:

This Section describes clothing, equipment and procedures for protection of workers during asbestos abatement activities.

Refer to Section 01710 for Respiratory Protection.

WORKER TRAINING:

Provide worker training for workers on the Project in accordance with applicable regulations. Minimum worker training shall be as follows:

1. A certificate of training from a training provider approved by or acceptable to the department indicating successful completion within the past twelve (12) months of the approved training course for abatement workers or the annual refresher training course, as described in §295.64 of this title (relating to Training: Required Asbestos Training Courses). Evidence of successful completion of the contractor/supervisor course may be substituted for the initial worker course.
2. An acceptable written opinion of a physical examination of the applicant within the past twelve (12) months that was performed by a physician in accordance with Occupational Safety and Health Administration of the United States Department of Labor (OSHA) regulations in 29 Code of Federal Regulations (CFR), §1926.1101(m), or Environmental Protection Agency (EPA) regulations in 40 CFR, §763.121(m), relating to medical surveillance. This opinion must be submitted on the Texas Department of Health (department) "Physicians Written Statement" form only, must be signed by the doctor and include certification of the following elements:
 - A) Completion and review of the applicant's standardized medical questionnaire and work history with special emphasis directed to the pulmonary, cardiovascular, and gastrointestinal systems per 40 CFR §1926.1101 Appendix D;
 - B) If applicant is employed, the employer must have provided, and a review made of, the description of the employee's duties as they relate to asbestos exposure, the anticipated exposure level, the personal protective and respiratory equipment to be utilized by the employee, and information from previous medical examinations of the affected employee that is not otherwise available to the physician;
 - C) A physical examination with emphasis upon the pulmonary, cardiovascular, and gastrointestinal systems;
 - D) The pulmonary function tests of forced vital capacity (FVC) and forced expiratory volume at one second (FEV 1) in accordance with NIOSH and ATS standards;
 - E) A chest roentgenogram, posterior-anterior, 14 x 17 inches, or current film on file with interpretation in accordance with 29 CFR §1926.1101 Appendix E. (Note: According to 29 CFR §1926.1101(m)(2)(ii)©, it is up to the discretion of the physician whether or not a chest x-ray is required); and

The following specific prohibitions apply to registered asbestos abatement workers.

1. Asbestos abatement workers are prohibited from performing asbestos abatement or O&M activities affecting asbestos except under the direct supervision of a qualified licensed supervisor.
2. Asbestos abatement workers are prohibited from engaging in any asbestos-related activity as a supervisor or contractor.

Worker training shall be maintained current for the Project Duration.

MEDICAL EXAMINATIONS:

Provide medical examinations for workers on the Project in accordance with applicable regulations, including OSHA requirements as set forth in 29 CFR 1926. Worker medical examinations shall be maintained current for the Project Duration.

LICENSING\REGISTRATION:

Provide appropriate licensing\registration, including photo identification, for workers on the Project in accordance with applicable regulations. Worker licensing\registration shall be maintained current for the Project Duration.

SUBMITTALS:

General: Submit the following documentation to the CONSULTANT/AIR MONITORING TECHNICIAN for review. Submit in a timely fashion to allow completed review of documentation prior to start of Work. Workers whose documentation is un-reviewed, incomplete, expired or otherwise unsatisfactory as determined by the CONSULTANT/AIR MONITORING TECHNICIAN will not be permitted to engage in asbestos abatement activities on the Project. If a document expires during the course of the Project, the affected worker(s) will not be permitted to engage in asbestos abatement activities on the Project until a satisfactory current document has been submitted and reviewed by the CONSULTANT/AIR MONITORING TECHNICIAN.

List of Workers: Submit a list of **CONTRACTOR'S** personnel (typewritten or neatly printed) for the Project. Only **CONTRACTOR'S** personnel on the list will be permitted on the Project site. Post a copy of the list at the entry to the Work Area. Update the list on a daily basis.

Certificate of Worker's Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment, found at the end of this section, for each person on the List of Workers.

Worker Training Certificate: Submit evidence of required Worker Training.

Medical Examination Results: Submit copy of required Medical Examination results.

Worker Registration Certificate: Submit evidence of required Worker Licensing and Registration.

Respiratory Fit Test Certificate: Submit evidence of Respiratory Fit Test for the type of respirator proposed for Work, and in accordance with applicable regulations.

PART 2 - PRODUCTS

PROTECTIVE CLOTHING AND EQUIPMENT:

General: Provide protective clothing and equipment as required by applicable regulations for anticipated type of Work.

Coveralls: Provide disposable full-body coveralls, foot covers, and disposable head covers of polyolefin or polypropylene. Require that the above be worn continuously by personnel in the Work Area. Provide a sufficient number for required changes for workers, the CONSULTANT/AIR MONITORING TECHNICIAN and visitors in the Work Area. Non-disposable or cloth protectives will not be permitted.

Gloves: Provide durable waterproof work gloves to workers and require that gloves be worn continuously by personnel in the Work Area. Do not remove gloves from work area; dispose as contaminated waste.

Boots and Shoes: Provide waterproof boots or shoes to be used in the Work Area. Provide boots or shoes with non-skid soles and hard toes.

Hard Hats: Provide head protectives (hard hats) for workers as applicable for anticipated type of Work. Provide four (4) spare hard hats for use by the CONSULTANT/AIR MONITORING TECHNICIAN and visitors. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn when Work is in progress. Provide hard hats with plastic strap style of suspension. Require hats to remain in the Work Area throughout the Work. Decontaminate Prior to removing from Work Area or dispose of hard hats as contaminated waste.

Goggles: Provide eye protectives (goggles) for workers involved in chipping, scraping, spraying, or other activity, which may potentially cause eye injury.

PART 3 – EXECUTION

WORKER PROTECTION:

General: Provide for protection of workers and other authorized personnel on the Project site as required by applicable regulations for anticipated type of Work.

The following procedures are to be considered minimum regardless of air monitoring results within the Work Area.

Require that protective clothing and equipment be worn continuously in Work Area. Replace damaged or torn items immediately.

ENTERING WORK AREA:

Each time Work Area is entered, remove street clothes in the Changing Room of the Personnel Decontamination Unit and don new disposable coverall, head and foot covers and gloves. Tape gloves to the sleeves of coveralls.

Fit proper respiratory protection (respirator).

Proceed through Shower Room to Equipment Room. Don work boots or shoes, hardhat, goggles, etc in Equipment Room.

Proceed to Containment area.

WITHIN WORK AREA:

Workers shall not eat, drink, smoke, chew gum or tobacco in the Work Area.

Workers shall not remove protective clothing or equipment within the Work Area.

EXITING WORK AREA:

Decontamination Procedures: Require personnel to adhere to the following decontamination procedures when exiting the Work Area.

Remove disposable clothing and equipment (except respirator) in the Equipment Room.

Proceed to Shower Room still wearing respirator. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos contamination while showering.

Thoroughly wet body including hair and face.

If using PAPR, exercise care to prevent water from entering canisters, blower unit and battery pack.

If using half or full-face cartridge type respirator (non-powered), exercise care to prevent water from entering cartridges at this point.

With respirator remaining in place, thoroughly wash body, hair, and parts of the respirator with soap/shampoo.

Carefully wash seal between face and respirator and under straps.

Take a deep breath, hold and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator away from face before breathing.

Carefully wash respirator inside and out. Dispose of wet filters as contaminated waste.

If using PAPR: Shut down in the following sequence; first, cap inlets to filter cartridges; then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Use caution to prevent water entering the battery pack.

Rinse body and respirator thoroughly.

Rinse Shower Room walls and floor prior to exit.

Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ DATE _____
PROJECT ADDRESS _____
CONTRACTOR _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS, THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THE NON-SMOKING PUBLIC.

Your employer's Contract with the OWNER for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification you are assuring the OWNER that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project have a copy of the written respiratory protection manual issued by my employer have been equipped at no cost with the respirator to be used on the project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos ad breathing asbestos dust and in proper work procedures and personal protective measures. The topics covered in the course included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Ventilation systems
- Work practices including hands-on job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within the last 12 months, which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest X-Ray.

I further agree to hold the OWNER and OWNER'S Consultants harmless from any and all claims for asbestos or other claims I may have.

(Signature)

(Printed Name)

(Social Security Number)

(Witness)

CERTIFICADO DE CONOCIMIENTO DEL TRABAJADOR:
(CERTIFICATE OF WORKER'S ACKNOWLEDGMENT: Spanish Ver)

NOMBRE DEL PROYECTO _____ FECHA _____
DOMICILIO DEL PROYECTO _____
NOMBRE DEL CONTRATISTA _____

TRABAJAR CON ASBESTOS PUEDE SER PELIGROSO. EL RESPIRAR FIBRAS DE ASBESTOS A SIDO ASOCIADO CON VARIOS TIPOS DE CANCER. SI TU FUMAS Y RESPIRAS FIBRAS DE ASBESTOS, LAS POSIBILIDADES DE DESARROLLAR CANCER EN LOS PULMONES SON MAYORES QUE EN LAS PERSONAS QUE NO FUMAN.

El contrato de trabajo de tu patron con el dueño de este proyecto requiere que: se te debe proporcionar un respirador apropiado y se te enseñe como usarlo. Tu debes ser entrenado para trabajar con medidas de seguridad y se te enseñe a usar el equipo y herramienta que se requiere para trabajar. Que seas examinado por un medico. Estas cosas deben ser hechas sin costo alguno para ti. Al firmar este certificado tu estas asegurando al dueño del proyecto que tus patrones ya cumplieron con estas obligaciones (de proporcionarte equipo adecuado, entrenarte en practicas de seguridad y pasar por un chequeo medico). Por lo que se esta de acuerdo en mantener al dueño del proyecto, sus consejeros, laboratorio de analisis y sus representantes fuera de responsabilidad en todas y cada una de las quejas que puedan resultar de, o relacionadas con este proyecto.

PROTECCION RESPIRATORIA: Yo he sido entrenado en el use apropiado de respiradores, y he sido informado del tipo de respirador que debe ser usado en este proyecto. Yo tengo una copia escrita del manual de proteccion respiratoria proporcionado por mis patrones. Yo he sido equipado sin costo alguno para me con el respirador que debe ser usado en este proyecto.

CURSO DE ENTRENAMIENTO: Yo he sido entrenado en los peligros relacionados con el manejo de asbestos y con el respirar polvo de asbestos y he sido entrenado en los procedimientos de trabajo adecuados y medidas de proteccion personales en el area de trabajo. Los temas vistos en el curso incluyen los siguientes:

- Caracteristicas fisicas de asbestos
- Peligros de salud asociado con asbestos
- Proteccion respiratoria
- Uso de equipo de proteccion
- Sistemas de aire negativos
- Practicas de trabajo mientras se trabaja o se entrena
- Procedimientos de descontaminacion personal
- Muestreo del aire, personal y del area

EXAMEN MEDICO: Yo he sido examinado dentro de los ultimos 12 meses el cual fue pagado por mis patrones. Esta examinacion incluye: historia de salud, pruebas de funcion pulmonares y podria tener incluida una evaluacion de rayos x del torax.

(Firma)

(Nombre Escrito)

(Numero Del Seguro Social)

(Testigo)

CITY OF AUSTIN INSPECTION FORM

Page 1 of 2

In connection with performance of this contract, work, Purchase Order, Confirmation Purchase Order, and/or Purchase Release, I (_____)
(Name)

_____, of _____,
(Title) (Company Name)

have visually and physically inspected the work areas and access routes to the work areas located at _____, and find it (them) to be adequate,

(Facility Name)

of safe design or construction, and acceptable for use by the employees of the Contractor, Subcontractor, and Sub-subcontractor to work upon and in the vicinity thereof. I further understand that any accidents, where people or property are involved, are to be reported immediately to the City representative or Superintendent of the facility.

Signatures:

Company Representative Title Date

Company Name

Employee Name Social Security Number

CITY OF AUSTIN INSPECTION FORM

Page 2 of 2

_____ Employee Name	_____ Social Security Number	
_____ Employee Name	_____ Social Security Number	
_____ Employee Name	_____ Social Security Number	
_____ Employee Name	_____ Social Security Number	
_____ Employee Name	_____ Social Security Number	
_____ Employee Name	_____ Social Security Number	
_____ Witness Name	_____ Street Address	
_____ City	_____ State	_____ Zip Code

Submitted by:

COA Representative, agent, or employee

Date

MAKE COPIES AS NECESSARY

RESPIRATORY PROTECTION

SECTION 01710

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to the Work of this section.

SUMMARY:

This Section describes respiratory protection during asbestos abatement activities.

STANDARDS:

Comply with the following as applicable:

- OSHA U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910, Section 1001 and Section 1910.134, 29 CFR 1926.
- CGA Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.1 "Commodity Specification for Air".
- CSA Canadian Standard Association, Rexdale, Ontario, Standard Z180.1-1978, "Compressed Breathing Air".
- ANSI American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992.
- NIOSH National Institute for Occupational Safety and Health
- MSHA Mine Safety and Health Administration

PART 2 - PRODUCTS

AIR PURIFYING RESPIRATORS:

Respirator Bodies: Provide half-face or full-face type respirators; negative pressure or powered (PAPR). Equip full-face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.

Provide an extra battery pack for each PAPR.

Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radio nuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2 (1980).

In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In such case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

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

SUPPLIED AIR RESPIRATOR SYSTEMS (TYPE "C"):

General: Provide equipment capable of producing air of quality and volume required as applied to the Project conditions and crew size.

Air Quality: Provide air used for breathing in Type "C" supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade D.

Face piece and Hose: Provide full face piece and hose by same manufacturer, certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure face piece.

Auxiliary Backup System: In atmospheres, which contain sufficient oxygen (greater than or equal to 19.5% oxygen), provide a pressure-demand full-face piece supplied air respirator equipped with an emergency backup HEPA filter.

Escape Air Supply: In atmospheres, which are oxygen deficient (less than 19.5% oxygen), provide a pressure-demand full-face piece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.

Backup Air Supply: Provide a reservoir of compressed air located outside the Work Area which will automatically maintain a continuous uninterruptible source of air automatically available to each connected face piece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the backup air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average sized adult male engaged in moderately strenuous activity.

Warning Device: Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible throughout the Work Area and at the compressor with a volume above the noise level produced by equipment and work procedures in use. Connect alarm to warn of:

Compressor shut-down or other fault requiring use of backup air supply,

Carbon Monoxide (CO) levels in excess of 10 PPM/V.

Carbon Monoxide (CO) Monitor: Continuously monitor and record on a strip chart recorder Carbon Monoxide (CO) levels. Place monitors in the airline between compressor and backup air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as indicated under "Warning Devices".

Compressor Shut-Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:

Carbon Monoxide (CO) concentrations exceed 10 PPM/V in the airline between the filter bank and backup air supply.

Compressor temperature exceeds normal operating range.

Compressor Motor: Provide a compressor driven by an electric motor. Insure that electrical supply available is adequate to energize motor.

If building power supply is inadequate or as other factors may necessitate, provide gasoline or diesel compressor motor as follows.

Compressor Location: Locate compressor outside of building in location that will not impede access to the building, and that will not cause a nuisance by virtue of noise or fumes to occupied portions of the building.

Air Intake: Locate air intake remotely from source or automobile exhaust or exhaust from motors, or buildings.

After Cooler: Provide an after cooler at entry to filter system, which is capable of reducing temperatures to outside ambient air temperatures.

SELF-CONTAINED BREATHING APPARATUS (SCBA):

Configure system to permit the recharging of ½ hour 6220-PSI SCBA cylinders.

PART 3 - EXECUTION

GENERAL:

Respiratory Fit Testing: 29 CFR 1910.1001(g)(4)(ii) of the Asbestos Standards states, "for each employee wearing negative pressure respirators, employers shall perform either quantitative or qualitative fit tests. Respirator fit testing for asbestos is required every six (6) months. In addition, fit testing should be repeated immediately if the subject experiences a weight change of twenty (20) pounds or more, has significant dental changes, or has reconstructive surgery or a facial disfigurement (scarring). All of these instances could affect the face piece seal.

Respiratory Protection Program: Comply with ANSI Z88.2 - 1980 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926, and other applicable regulations.

Instruct and train workers in proper care and use of respiratory protection equipment.

Require that respiratory protection be used in the Work Area from the start of Work, which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber concentration encountered and anticipated or as required for other toxic or oxygen-deficient situations encountered.

Require that respiratory protection be used during the possibility of disturbance of asbestos-containing materials whether intentional or accidental.

RESPIRATORY PROTECTION FACTOR:

Use the following respiratory protection factors in determining the degree of protection offered by the indicated respirator type between air inside and outside the respirator.

RESPIRATOR TYPE	PROTECTION FACTOR
Air purifying: Negative pressure respirator High efficiency filter Half face piece	10
Air purifying: Negative pressure respirator High efficiency filter Full face piece	50
Powered-air purifying (PAPR): Positive pressure respirator High efficiency filter Half or Full face piece	1000
Type C supplied air: Positive pressure respirator Continuous-flow Half or Full face piece	100
Type C supplied air: Positive pressure respirator Pressure demand Full face piece	1000
Type C supplied air: Positive pressure respirator Pressure demand Full face piece Equipped with an auxiliary positive pressure Self-contained breathing apparatus (SCBA)	Over 1000
Self-contained breathing apparatus (SCBA): Positive pressure respirator Pressure demand Full face piece	Over 1000

MINIMUM TYPE OF RESPIRATORY PROTECTION REQUIRED:

Provide at a minimum the following respiratory protection unless otherwise indicated:

Preparatory, Non ACM Pre-cleaning, Temporary Containment construction Work: Utilize half-face, negative pressure, air-purifying respirator with high efficiency filters.

Removal Work using Glove-Bag Method: Utilize half-face powered air-purifying respirator (PAPR) with high efficiency filters.

Removal Work involving only Resilient Flooring and Mastic: Utilize half-face powered air-purifying respirator (PAPR) with high efficiency filters.

Removal work not in Temporary Containment (such as roofing materials): Utilize half-face, negative pressure, air-purifying respirator with high efficiency filters.

Other Removal Work: Utilize full-face, powered air-purifying respirator (PAPR) with high efficiency filters.

Repair and Maintenance Work: Utilize full-face, powered air-purifying respirator (PAPR) with high efficiency filters.

SUPPLIED AIR RESPIRATOR SYSTEMS (TYPE "C"):

General: Carefully set up and control supplied air respirator systems to prevent hazards for workers due to difficulty of handling the attached hoses, including on scaffolding and other equipment.

Testing of system: The **CONTRACTOR** will provide certification by an approved laboratory that the compressed air system, including the air compressor to supply breathing air, complies with Grade "D" air specifications. Test shall be conducted not more than two (2) days prior to start of the abatement.

Air Systems Monitor: Monitor the air system operation including compressor operation, filter system operation, backup air capacity and warning and monitoring devices continuously during system operation.

AIR PURIFYING RESPIRATORS:

General: Store respirators and filters in the Changing Room. Store respirators in individual, clean plastic bags. Maintain a sufficient quantity of respirator filters for the Work.

Half or Full Face Negative Pressure Respirators: Require that filters be discarded and that new filters be installed each time a worker exits and re-enters the Work Area.

Powered Air Purifying Respirators (PAPR): Require that filters be discarded and that new filters be installed when flow through the face-piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filters be replaced after forty (40) hours of use. Maintain one spare battery charged or being charged for each PAPR provided.

PIPE AND EQUIPMENT INSULATION

SECTION 15100

RE-INSULATION - All re-insulation / repair will comply with **Austin Energy**

INSULATING MATERIAL REQUIREMENTS

- The Contractor shall certify that all materials installed under this contract are asbestos free. Forms for Contractors signature shall be provided.
- Piping and block insulation shall be calcium silicate type one (1) thermal insulation for use on surfaces up to 1200°F and shall meet ASTM C-533 specifications. Approved materials are PABCO Super Caltemp, Thermal Ceramic Kalo, or Mansville Thermal-12.
- Filler material for use in filling any cracks or seams shall withstand temperatures up to 1800°F. An approved material is A.P. Green Insulating Cement or City of Austin Engineer approved equal.
- Banding and wing seal clips shall be type 304 stainless steel. Banding shall be 3/4 inches x 0.025 inches.
- Jacketing material shall be aluminum smooth mill finish with moisture barrier; for insulation diameters less than 20 inches, 0.020 inches shall be used; for insulation diameters greater than 20 inches and all vessels, 0.32 inches shall be used.
- Wire shall be 16 gauge AWG, type 304 stainless steel. Wire shall be used on pipe insulation only, with an outside diameter (O.D.) not to exceed 6 inches.
- Caulking shall be for high temperature applications and shall be rated to 450°F. An approved material is Dow Corning RTV, 732, Silver, or City of Austin Engineer approved equal.
- Materials to be used for freeze protection shall be, Thermon Econotrace FP-10 10.9/120 cable, 0.005 inch aluminum foil, Thermon AL-30, 3 inch tape, and 1/2 inch 3M Polyester Filament Tape or City of Austin Engineer approved equal.
- Sheet metal screws shall be #8 X 1/2 inch with 1/4 inch hex head zinc plated.

Method of Application - Pipe Insulation and Surface Finish

- Single layer insulation shall be applied to piping with longitudinal joints butted and end joints staggered. Additional layer or layers of insulation shall be applied in the same manner as first layer, with side and end joints staggered over joints of the preceding layer so that no two joints coincide except where they cross at right angles. Offset longitudinal joints on outer layers a minimum of three (3) inches from all end joints underneath.
- All layers of pipe insulation shall be secured in place with stainless steel tie wire or bands spaced on nine (9) inch centers maximum, or a minimum four (4) bands or wire per 36 inch section. Wire or bands shall not be located more than 4 1/2 inches from any end joint. Each layer of insulation shall be secured separately. Bands and double pronged wing seals shall be used on insulation with an O.D. of six (6) inches and greater.
- Surface finish shall be 0.020 inch smooth mill finished aluminum sheet metal with moisture barrier, secured with sheet metal screws on six (6) inch centers.
- Circumferential, vertical and longitudinal sheet metal jacketing joints shall be overlapped three (3) inches.
- Circumferential sheet metal elbow gores shall be overlapped three (3) inches.
- Freeze protection shall be installed as follows: First layer of insulation shall be wrapped completely with 0.005 aluminum; two (2) strands of Thermon Econotrace Cable or City of Austin Engineer approved equal, shall be installed to full length of wrapped line and set at 180o apart; cable shall be secured with Thermon AL-30 or City of Austin Engineer approved equal, three (3) inch tape running full length of line and taped circumferentially with 1/2 inch 3M Polyester Filament Tape on three (3) foot centers; second layer of insulation shall be installed over freeze protection; sheet metal shall be installed over final layer of insulation. Cable shall extend out of insulated line three (3) foot six (6) inches at termination points.
- The Contractor shall provide a one (1) year warranty on all workmanship and labor effective from the date the final product is accepted by the City.

REPAIR OF INSULATION AND LAGGING

SECTION 15200

PART 1- GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and supplementary Conditions, apply to the work of this section.

DESCRIPTION OF WORK:

Repair of insulation on piping upon which asbestos-containing insulation is to remain.

Repair of laggings on boilers, breeching and equipment upon which asbestos-containing lagging and/or insulation is to remain

Labeling of repaired asbestos-containing materials.

PART 2 -PRODUCTS:

Mineral Wool Insulating Cement: Provide job mixed insulating plaster manufactured for use on plumbing equipment.

Waterproof Cement: Provide premixed or job mixed cement manufactured for coating of thermal insulation laggings.

Non-woven Fibrous Glass Mat: Provide felt approximately 3/32" thick fabricated from glass fibers.

Open Weave Glass Fiber Mat: Provide cloth with approximately 1/4" opening in weave, fabricated from glass fibers twisted or braided into strands approximately 1/128" in diameter. Products of different materials, other than specified, may be submitted to the CONSULTANT/AIR MONITORING TECHNICIAN for approval.

PART 3 -EXECUTION:

GENERAL:

Piping: Remove any loose material with HEPA vacuum. No existing jacket material is to be removed.

Fill holes with mineral wool insulating cement and cover damaged areas with non-woven fibrous glass mat completely saturated with bridging type encapsulant.

Wrap open joints with non-woven fibrous glass mat embedded in bridging type encapsulant.

Smooth mat to a wrinkle-free condition. Allow to dry and coat entire surface of mat with an additional coat of bridging type encapsulant and brush to a smooth uniform appearance.

Fittings: Patch damaged fittings as required, using mineral wool insulating cement. Smooth insulation to a uniform appearance, continuous with and not overlapping adjacent straight insulation runs. Cover entire surface of fitting with non-woven fibrous glass mat embedded in bridging type encapsulant. Stretch to conform to shape of the fitting and smooth to a uniform appearance without wrinkles. Overlap jackets of adjacent straight insulation sections by 3". Allow to dry and coat entire surface of mat with bridging type encapsulant and brush to a smooth finished appearance.

Equipment Laggings: (Hot Water Tanks, Converters, Etc.) Fill damaged portion of lagging as required with mineral wool insulating cement and cover with non-woven fibrous glass mat completely embedded in bridging type encapsulant. Coat area of repair and six inches on all sides with bridging type encapsulant, brush out to a uniform appearance. Completely coat laggings, which do not possess a canvas jacket with two (2) coats of bridging type encapsulant.

Boiler and Smoke Hoods Breeching Laggings: Fill damaged portions of laggings, as required, with mineral wool insulating cement. Coat entire surface or lagging with 1/4" minimum thickness of mineral wool insulating cement reinforced with open weave glass fiber mat. Trowel surface smooth finish.

Labeling: Label repaired asbestos-containing piping insulation, fitting insulation laggings, etc.

In unoccupied areas label with a 3"X5" yellow sticker containing the words:

"DANGER - CONTAINS ASBESTOS FIBERS - AVOID BREATHING
DUST - BREATHING ASBESTOS MAY CAUSE SERIOUS BODILY HARM".

In unoccupied areas, provide labels shaped like stop signs approximately 3" across with text reading:
"STOP - Before Doing Work in This Area, See Custodian".

Apply labels minimum two (2) per side of maximum of five feet (5') apart on boilers, breeching and equipment and minimum of one per section and maximum of eight feet (8') apart on pipe runs.

Apply labels to both sides of pipe runs, which are accessible from both sides.

ATTACHMENT 3

MASTER SPECIFICATION

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS



**MASTER SPECIFICATION
FOR
ASBESTOS ABATEMENT**

**THE CITY OF AUSTIN
Project Management Division
Department of Public Works**

DIVISION 1 - GENERAL REQUIREMENTS

- 01901 Scope of Work - Asbestos Abatement
- 01902 Project Coordination - Asbestos Abatement
- 01903 Definitions and Standards - Asbestos Abatement
- 01904 Codes and Regulations - Asbestos Abatement
- 01905 Submittals
- 01906 Test Laboratory Services
- 01907 Temporary Facilities - Asbestos Abatement
- 01908 Temporary Pressure Differential and Air Circulation System
- 01909 Temporary Containments
- 01910 Worker Protection - Asbestos Abatement
- 01911 Respiratory Protection
- 01912 Decontamination Units
- 01913 Project Closeout - Asbestos Abatement
- 01914 Project Decontamination
- 01915 Work Area Clearance (TEM)
- 01915 Work Area Clearance (PCM)
- 01916 Removal of Asbestos Containing Materials
- 01917 Disposal of Asbestos Containing Waste Material

C. Wade Mullin
Licensed Asbestos Consultant
License Number 10-5093
Expiration Date 2/7/2013

SECTION 01901

SUMMARY OF THE WORK

PART 1 - GENERAL: THIS PROJECT IS TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF TAC 25, SECTION 15, ARTICLE 4477-3A, 40 CFR Part 61, Subpart M, 40 CFR Part 763, Subpart E, and Appendices A, B, C, and D AND 29 CFR 1926.1101.

The location and approximate quantities of asbestos materials provided in these specifications are estimates only and do not include any hidden materials not identified. The Contractor is responsible to field verify for actual quantities which these plans and specifications represent. No additional compensation will be made to the Contractor(s) for differences between the estimated quantities and the actual quantities unless prior written approval is obtained from the Owner or his representative.

1.01 RELATED DOCUMENTS:

Drawings, general provisions of Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 PROJECT/WORK IDENTIFICATION:

General: The Project may consist of asbestos abatement and operations and maintenance activities in support of renovation, demolition, operations and maintenance work, small scale short duration work and emergency response.

1. **Project Location:** City of Austin, owned and leased facilities
2. **Owner :** City of Austin

Summary of Work: Briefly and without force and effect upon the contract documents, the work of the contract can be summarized as follows:

The work under this contract may involve the removal and disposal of asbestos containing materials (ACM) associated with floor tile and mastic, sheet vinyl flooring, thermal system insulation (e.g., piping, boiler insulation, and duct insulation), vibration dampers, gaskets, gypsum wallboard and texture, window glazing compound, paint, coatings, ceiling tiles, transite board, roofing materials, ceiling acoustics, CMU block wall fill materials, AC pipe or any other identified ACM and/or clean-up of asbestos contamination in support of operations and maintenance activities as indicated on the attached drawing(s) and specified in this section. All work will be conducted in and around city-owned facilities. These facilities could be public access and/or restricted access buildings and facilities.

All asbestos containing materials shall be wetted with amended water or a removal encapsulant prior to and during the removal. The contractor can start the removal process after the Owner's Representative is satisfied that the ACM has been adequately wetted. The Owner's Representative has been given the authority to present the contractor with either a written or verbal Stop Work Order if they notice that any ACM is being removed without it being adequately wetted or if they become aware of any

deviation from the project specifications or Department of State Health Services Regulations.

Chemical solvents are permitted for removing the flooring mastic as long as the manufacturer's recommendations are strictly adhered to and the flash point of the solvent is greater than 140 degrees Fahrenheit.

Upon successful completion of required work activities the Owner's Representative shall visually inspect the work area and conduct final air clearance sampling as required per sections 1914 and 1915. If any work area samples fail additional clearance samples shall be collected and analyzed by appropriate analytical method. The Owner's Representative shall determine the number and location of any additional clearance samples.

The Owner will check with the Texas Department of Health Asbestos Programs Branch to see if the abatement contractor/subcontractor has been issued a critical or serious violation in accordance with Section 295.70 of the Texas Asbestos Health Protection Rules. If the Texas Department of Health determines through their hearing process that a critical or serious violation did occur, the Owner may elect not to use the services of this abatement contractor/subcontractor for this project.

The contractor shall follow removal and decontamination procedures specified in this section as well as Section 01916 as a minimum.

The contractor shall refer to the attached drawings for locations and quantities of items that are specified in this section to be removed for any salvage or recycling purposes.

The contractor shall submit the names and resumes (including pertinent project experience) of at least two supervisors that they plan on using to conduct this asbestos abatement project. If the supervisors they submitted are approved by the Owner, the contractor shall ensure that these project supervisors are on site throughout the asbestos abatement project including the time when items specified to be removed for recycling are being removed from all buildings. The contractor shall not substitute any other project supervisor without the approval of the Owner.

ASBESTOS ABATEMENT

All removal work inside city facilities shall be conducted using full enclosures as specified per Master Specifications sections 1908 and 1909, unless specifically directed otherwise by the project specifications. Requirements spelled-out in Division 1 shall apply.

Asbestos Containing Materials that are a part of these abatement activities will be identified by the Owner. If any other materials are found during the course of abatement activities which are suspected of containing asbestos, immediately notify the Owner's Representative. The amounts of ACM listed in this section are approximate. The Contractor shall field verify the quantities.

All equipment used on this project (i.e. HEPA-vacuums, negative air machines) shall be free of any visible debris and operational. The Owner's Representative shall visually inspect all decontaminated items once they have been decontaminated and passed out of the work areas. The site supervisor or his designated representative shall inspect these items before they are taken out of the enclosure. If the Owner's Representative determines that the items are not sufficiently clean, the contractor shall return the items inside the enclosure for additional cleaning. If any debris found on the equipment is suspected to be ACM, the equipment shall be wet wiped and decontaminated. **The decontamination of the equipment shall not take place on the project site.**

The Contractor shall use properly secured spiral-reinforced duct for the HEPA-exhaust. The duct shall be attached to the exhaust ports of the HEPA Filtration units using clamps or fasteners to assure that the duct work stays secured to the exhaust ports.

The Contractor will be required to repair any damage to the facility or equipment of the Owner as the result of the abatement project. Any replacement items (paint, wall coverings, panels, etc.) will be of equal quality and color of the damaged items. This work shall be accomplished at the completion of the abatement project and prior to the Owner re-occupying the space. The project will not be considered complete until the repair work has been done and found acceptable by the Owner.

The contractor shall provide all workers working in the vicinity of active electrical sources with appropriate protective equipment including insulating gloves, boots, and non-conductive tools (while HEPA-Vacuuming).

The abatement must comply with these Specifications, the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), State of Texas and local regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions are applicable.

The Contractor will inform the Owner and Owner's Representative of any hidden or unidentified conditions that may result in a change order or additional cost to the bid price of the contract. This notice will require written approval by the Owner's Representative prior to accomplishing the additional work.

POTENTIAL LEAD HAZARD

If the Owner's Representative has determined that painted surfaces affected by the asbestos related activities of this contract are coated with lead-containing materials all applicable requirements as identified in the Lead Master Specifications shall apply. Additionally, the Owner's Representative shall collect samples in order to properly characterize the waste stream, prior to the debris leaving the site for disposal, using the Toxicity Characteristic Leaching Procedure (TCLP) test in accordance with 40 CFR Part 261 and Section 01938 of the Lead Master Specifications . All painted materials shall be stockpiled in a secure area on site until the testing is complete. TCLP testing which results in a lead content in the leachate of greater than or equal to 5 ppm is to be considered hazardous and shall be handled and disposed of according to local, city, state, and federal regulations.

All painted metal items, including any structural steel, shall be taken to a reclamation/salvaging facility approved to accept this type of material for recycling purposes. The contractor shall provide the name and location of the proposed recycling facility planned to receive the painted metals for recycling. The contractor shall also provide adequate documentation (Chain of Custody) detailing the delivery of the materials to the reclamation facility and the acceptance of the material by the reclamation facility. The transporter and reclamation/salvaging facility shall have all applicable licenses, insurance, and permits necessary to perform the work required under this contract.

The contractor is not allowed to salvage any painted building materials without written prior approval from the Owner.

POTENTIAL MOLD HAZARD

If the Owner's Representative has determined that building materials affected by the asbestos related activities of this contract are impacted by visible mold all applicable requirements as identified in the Mold Master Specifications shall apply. Building materials impacted by visible mold shall be handled and disposed of according to local, city, state, and federal regulations.

SCHEDULED MEETINGS:

A weekly meeting will be held between the Owner, Owner's Representative, the Architect and Contractor to establish the status of the project and address any problem areas.

General and Administrative Requirements: Are set forth in the following specification sections:

- 01901 Summary of Work
- 01902 Project Coordination
- 01903 Definitions and Standards
- 01905 Submittals

Abatement Work: Requirements are set forth in the following specification sections, listed here according to the sequence of the work:

01904 - Applicable Codes: Sets forth governmental regulations and industry standards that are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits, which are known to the Owner and either, must be applied for and received, which must be given to governmental agencies before start of work.

01907 - Temporary Facilities: Sets forth the support facilities needed such as electrical and plumbing connections.

01909 - Temporary Enclosures: Details the requirements for the sheet plastic barriers isolating the work area from the balance of the building.

01906 - Test Laboratory Services: Describes air monitoring by Owner's Representative so that the building beyond the work area will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of the Contractor.

01912 - Decontamination Units: Explains the setup and operation of the personnel and material decontamination units.

01908 - Temporary Pressure Differential and Air Circulation System: Sets forth the procedures to set up negative air machines and ventilation of the work area.

01910 - Worker Protection: Describes the equipment and procedures for protecting workers against asbestos contamination and other work place hazards except for respiratory protection.

01911 - Respiratory Protection: Sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.

Asbestos Removal Work Procedures: Are described in the following specification sections:

- 01916 Removal of Asbestos Containing Materials
- 01917 Disposal of Asbestos Containing Waste Material

Decontamination of the Work Area: After completion of abatement work is described in the following sections:

01914 - Project Decontamination: Describes the sequence of cleaning and decontamination procedures to be followed during removal of the sheet plastic barriers isolating a work area.

01915 - Work Area Clearance: Describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.

1.03 INSPECTION:

Prior to commencement of work, inspect all areas in which work will be performed. Prepare a listing of damage to structure, surfaces, and equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or video tape existing conditions as necessary to document conditions. Submit to Owner's Representative prior to starting work.

1.04 PLAN OF ACTION:

Submit a detailed plan of the procedures proposed for use in complying with the requirements of this Specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the area HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. The plan must be approved by the Owner's Representative prior to commencement of work.

1.05 POTENTIAL ASBESTOS HAZARD:

The disturbance or dislocation of asbestos containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workmen and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the jobsite of the seriousness of the hazard and of proper work procedures which must be followed.

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

1.06 CONTRACTOR USE OF PREMISES:

General: The Contractor shall limit his use of the premises to the work indicated.

Use of the Site: Confine operations at the site to the areas permitted under the contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project abatement.

Keep existing driveways, parking spaces and entrances serving the premises clear and available to the Owner and his employees at all times.

Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage to areas indicated at the pre-abatement meeting.

Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.

Use of existing toilets within the building by the Contractor and his personnel will not be permitted. Water and wastewater services to all the facilities will not be in service.

Owner Occupancy: The buildings will not be occupied by the Owner during the asbestos abatement project.

SPECIAL SPECIFICATIONS

In addition to the work procedures outlined in the Master Specification which apply to the project described herein, the following Special Specifications may apply:

01906 - Test Laboratory Services: Describes air monitoring by Owner's Representative so that the building beyond the work area will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of the Contractor.

01912 - Decontamination Units: Explains the setup and operation of the personnel and material decontamination units.

01908 - Temporary Pressure Differential and Air Circulation System: Sets forth the procedures to set up negative air machines and ventilation of the work area.

01910 - Worker Protection: Describes the equipment and procedures for protecting workers against asbestos contamination and other work place hazards except for respiratory protection.

01911 - Respiratory Protection: Sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.

Asbestos Removal Work Procedures: Are described in the following specification sections:

- 01916 Removal of Asbestos Containing Materials
- 01917 Disposal of Asbestos Containing Waste Material

Decontamination of the Work Area: After completion of abatement work is described in the following sections:

01914 - Project Decontamination: Describes the sequence of cleaning and decontamination procedures to be followed during removal of the sheet plastic barriers isolating a work area.

01915 - Work Area Clearance: Describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.

1.03 INSPECTION:

Prior to commencement of work, inspect all areas in which work will be performed. Prepare a listing of damage to structure, surfaces, and equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or video tape existing conditions as necessary to document conditions. Submit to Owner's Representative prior to starting work.

1.04 PLAN OF ACTION:

Submit a detailed plan of the procedures proposed for use in complying with the requirements of this Specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the area HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. The plan must be approved by the Owner's Representative prior to commencement of work.

1.05 POTENTIAL ASBESTOS HAZARD:

The disturbance or dislocation of asbestos containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workmen and building occupants. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the jobsite of the seriousness of the hazard and of proper work procedures which must be followed.

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

1.06 CONTRACTOR USE OF PREMISES:

General: The Contractor shall limit his use of the premises to the work indicated.

Use of the Site: Confine operations at the site to the areas permitted under the contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project abatement.

Keep existing driveways, parking spaces and entrances serving the premises clear and available to the Owner and his employees at all times.

Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage to areas indicated at the pre-abatement meeting.

Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.

Use of existing toilets within the building by the Contractor and his personnel will not be permitted. Water and wastewater services to all the facilities will not be in service.

Owner Occupancy: The buildings will not be occupied by the Owner during the asbestos abatement project.

SPECIAL SPECIFICATIONS

In addition to the work procedures outlined in the Master Specification which apply to the project described herein, the following Special Specifications may apply:

In addition to Section 01912 of the Master Specification, any decontamination units located outside the facility shall be constructed using plywood with a hinged lockable door. Louvers shall be located on the door to allow for make-up air once the door is locked at the end of each work day. The contractor is responsible for testing the effectiveness of the louver system prior to utilization. The decontamination units shall be constructed in a manner that is secure enough to prevent access into the facility once the door is locked.

The contractor shall conduct all abatement work in accordance with the current revisions to the Department of State Health Services Rules, T.A.H.P.R. dated March 2003.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01902

PROJECT COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 ABATEMENT TIME:

The use of insufficient labor or equipment for abatement purposes or inadequate scheduling of materials or equipment will not be allowed as cause for delay. Extension of time or extra cost will not be allowed for failure to complete the project on time due to insufficient labor or equipment.

1.03 ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

General Superintendent: Provide a full-time General Superintendent on site who is licensed in accordance with Texas Civil Statutes, Article 4477-3a, paragraph 289.144, and all adoptions to Article 4477-3A, and experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 CFR 1926 for the Contractor and is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to asbestos containing materials.

Asbestos Workers: All workers actively involved in the removal and replacement of asbestos material will be Licensed Asbestos Workers with the State of Texas.

1.04 PROGRESS MEETING

In addition to specific coordination and pre-construction meetings, and other regular project meetings held for other purposes, the Owner's Representative will hold general progress meetings as required. The meetings will be attended by a representative of the contractor authorized to make decisions for the contractor.

1.05 PRE-CONSTRUCTION CONFERENCE:

An initial progress meeting, recognized as the "Pre-Construction Conference" will be convened by the Owner and the Owner's Representative prior to the start of any work. The meeting will be attended by the general superintendent of the contractor, Owner's Representative(s), project administrator, and other entities concerned with the asbestos abatement work.

1.06 DAILY LOG

General: Maintain within the decontamination unit a daily log documenting the dates and time of, but not limited to, the following items:

Personnel, by name, entering and leaving the work area, air monitoring results, and any equipment/supplies decontaminated and brought out through the decontamination unit.

1.07 SPECIAL REPORTS:

General: Except as otherwise indicated, submit special reports directly to the Owner's Representative or the Owner within one day of occurrence requiring special report, with copy to others affected by occurrence.

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

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

1.08 CONTINGENCY PLAN:

Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, or any other event that may required modification or abridgment of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.

Post: In clean room of the personnel decontamination unit telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

1.09 NOTIFICATIONS

Notify other entities at the job site of the nature of the asbestos abatement activities, location of asbestos containing materials, requirements relative to asbestos set forth in these specifications and applicable regulations.

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

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01903

DEFINITIONS AND STANDARDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.02 DEFINITIONS:

General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon). Certain terms used in contract documents are defined in this article. Definitions and explanations of this section are not necessarily either complete nor exclusive, but are general for the work to the extent they are not stated more explicitly in another element of contract documents.

General Requirements: The provisions or requirements of Division-1 sections apply to entire work of Contract and where so indicated to other elements that are included in project.

Indicated: The term "Indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar requirements in the contract documents. Where terms such as "shown", "noted", and "scheduled" are used, it is to help locate the reference, no limitation on location is intended except as specifically noted.

Directed, Requested, etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by Owner's Representative," "requested by Owner's Representative," and similar phrases. However, no such implied meaning will be interpreted to extend Owner's Representative's responsibility into Contractor's responsibility for construction supervision.

Project Site: The term "project site" is defined as the space available to Contractor for performance of the work, either exclusively or in conjunction with others performing other work as part of the project. The extent of the project site is shown on the drawings, and may or may not be identical with the description of land upon which the project is built.

Approve: The term "approved", where used in conjunction with the Owner's Representative's actions on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Architect stated in supplementary conditions. Such approval shall not release the Contractor from responsibility to fulfill contract document requirements, unless otherwise provided in the contract documents.

Regulation: The term "Regulations" includes laws, statutes, ordinances and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the work, whether they are lawfully imposed by authorities having jurisdiction or not.

Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing protecting, cleaning and similar operations, as applicable in each instance.

Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

Installer: The term "installer" is defined as the entity (person or firm) engaged by the contractor, or its sub-contractor or sub-subcontractor for performance of a particular unit of work at project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (Installers) be expert in operations they are engaged to perform.

Testing Laboratory: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

Owner's Representative: Is the entity described as the C.I.H. and/or Architect. All references to C.I.H. or Architect in the contract documents shall in all cases refer to the Owner's Representative. This representative will represent the Owner during abatement until final payment is due.

Project Administrator: Is the entity described as the "Project Representative" or "Engineer". The Project Administrator is a full-time representative of the Owner at the jobsite with the authority to stop the work upon verbal order if requirements of the contract documents are not met, or if in the sole judgment of the Project Administrator, Owner's Representative, the interest of the Owner, safety of any person or the Owner's property are jeopardized by the work.

General Superintendent: Is the Contractor's Representative at the work site. This person will generally be the competent person required by OSHA in 29 CFR 1926.

1.03 DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT:

Accredited or Accreditation (when referring to a person or laboratory): A person or laboratory accredited in accordance with Section 206 of Title II of the Toxic Substances Control Act (TSCA).

Aerosol: A system consisting of particles, solid or liquid, suspended in air.

Air Cell: Insulation normally used on pipes and duct work that is comprised of corrugated cardboard which is frequently comprised of asbestos combined with cellulose or refractor binders.

Air Monitoring: The process of measuring the fiber content of a specific volume of air.

Amended Water: Water to which a surfactant has been added.

Asbestos: The asbestiform varieties of serpentine (chrysotile), reibeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.

Asbestos-Containing Material (ACM): Any material containing more than 1% of asbestos of any type or mixture of types.

Asbestos-Containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on the interior structural members or other parts of a building.

Asbestos-Containing Waste Material: Any material which is or is suspected of being or any material contaminated with an asbestos-containing material which is to be removed from a work area for disposal.

Asbestos Debris: Pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

Authorized Visitor: The Owner's Representative, testing lab personnel, the Architect/Engineer or a representative of any federal, State and local regulatory or other agency having authority over the project.

Barrier: Any surface that seals off the work area to inhibit the movement of fibers.

Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

Ceiling Concentration: The concentration of an airborne asbestos substance that shall not be exceeded.

Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.

Disposal Bag: 6 mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site. Each is labeled as follows:

DANGER
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

AND

CAUTION
Contains Asbestos Fibers
Avoid Opening or Breaking Container
Breathing Asbestos Is Hazardous To Your Health

Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.

Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

Penetrating encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

Removal encapsulant: A penetrating encapsulant specifically designed for removal of asbestos-containing materials rather than for in situ encapsulation.

Encapsulation: Treatment of asbestos-containing materials, with an encapsulant.

Containment: The construction of an air-tight, impermeable, permanent barrier around asbestos-containing material to control the release of asbestos fibers into the air.

Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

Friable Asbestos Material: Material that contains more than 1.0% asbestos and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

Glovebag: A sack (typically constructed of 6 mil transparent polyethylene or polyvinylchloride plastic) with two inward projecting longsleeve gloves, which are designed to enclose an object from which an asbestos-containing material is to be removed.

HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.

HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air (absolute) filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

High-Efficiency Filter: A filter which removes from air 99.97% or more of monodisperse dioctyl-phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.

Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

Negative Pressure Ventilation System: A pressure differential and ventilation system.

Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

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

Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

Repair: Returning damaged ACBM to an undamaged condition or to an intact state so as to prevent fiber release.

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

Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.

Work Area: The area where asbestos related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a regulated area as defined by 29 CFR 1926.

1.04 DRAWING SYMBOLS:

General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated.

Mechanical/Electrical Drawings: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by ASHRAE.

1.05 INDUSTRY STANDARDS:

General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, applicable standards of the construction industry have the same force and effect (and are made a part of contract documents by reference) as if copied directly into the contract documents, or as if published copies were bound herewith. Refer to the other contract documents for resolution of overlapping and conflicting requirements which result from the application of several different industry standards to the same unit of work. Refer to individual unit of work sections for indications of which specialized codes and standard the Contractor must keep at the project site, available for reference.

Referenced standards (referenced directly in contract documents or by governing regulations) have precedence over non-referenced standards which are recognized in industry for applicability to work.

Non-referenced standards are hereby defined to have no particular applicability to the work, except as general requirements of whether the work complies with standards recognized in the construction industry.

Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.

Updated Standards: At the request of the Owner's Representative, submit a change order proposal where an applicable industry code or standard has been revised and reissued after the date of the contract documents and before the performance of the work affected. The Owner's Representative will decide whether to issue the change order to proceed with the updated standard.

Copies of Standards: Each entity engaged in work on the project is required to be familiar with industry standards applicable to that entities' construction activity. Copies of applicable standards are not bound with the contract documents.

Where copies of standards are needed for proper performance of the work, the Contractor is required to obtain such copies directly from the publication source.

Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Owner's Representative reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.

Abbreviations and Names: Where acronyms or abbreviations are used but not identified in specifications or other contract documents they are defined to mean the industry recognized name of trade association, standards generating organization, governing authority or other entity applicable to context of text provision. Refer to "Encyclopedia of Associations," published by Gale Research Co., available in large libraries.

Abbreviations and Names: The following acronyms or abbreviations as referenced in contract documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of date of contract documents:

AIHA	American Industrial Hygiene Association 475 Wolf Ledges Parkway Akron, OH 44311 216/762-7294
AIA	American Institute of Architects 1735 New York Ave. NW; Washington, DC 20006 202/626-7474
ANSI	American National Standards Institute 1430 Broadway; New York, NY 10018 212/354-3300
ASHRAE	American Society for Heating, Refrigerating, and Air Conditioning Engineers 1791 Tullie Circle NE; Atlanta, GA 30329 404/636-8400
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017 212/705-7722

ASPE American Society of Plumbing Engineers
3716 Thousand Oaks Blvd., Suite 210
Westlake, CA 91362
805/495-7120

ASTM American Society for Testing and Materials
1916 Race St.; Philadelphia, PA 19103
215/299-5400

CFR Code of Federal Regulations
Available from Government Printing Office;
Washington, DC
20402 (usually first published in Federal Register)

CGA Compressed Gas Association
1235 Jefferson Davis Highway; Arlington, VA 22202
703/979-0900

CS Commercial Standard of NBS (U.S. Dept. of Commerce)
Government Printing Office; Washington, DC 20402
202/377-2000

DOT Department of Transportation
400 M Street, SW
Washington, DC 20590
202/426-4000

EPA Environmental Protection Agency
401 M St., SW; Washington, DC 20460
202/382-3949

FS Federal Specification (General Services Admin.)
Obtain from your Regional GSA Office, or purchase
from GSA Specifications Unit (WFSIS); 7th and D
Streets, SW; Washington, DC 20406
202/472-2205 or 2140

GA Gypsum Association
1603 Orrington Ave.; Evanston, IL 60201
312/491-1744

GSA General Services Administration
F St. and 18th St., NW; Washington, DC 20405
202/655-4000

IEEE Institute of Electrical and Electronic Engineers
345 E. 47th Street
New York, NY 10017
202/705-7900

MIL	Military Standardization Documents (U.S. Dept. of Defense) Naval Publications and Forms Center 5801 Tabor Ave.; Philadelphia, PA 19120
NIST	National Institute of Standards & Technology (U.S. Dept. of Commerce) Gaithersburg, MD 20234 301/975-2000
NEC	National Electrical Code (by NFPA)
NFPA	National Fire Protection Association Batterymarch Park; Quincy, MA 02269 617/770-3000
OSHA	Occupational Safety & Health Administration (U.S. Dept. of Labor) Government Printing Office; Washington, DC 20402
PS	Product Standard of NIST (U.S. Dept. of Commerce) Government Printing Office; Washington, DC 20402 202/783-3238
RFCI	Resilient Floor Coverings Institute 966 Hungerford Drive, Suite 12-B Rockville, MD 60062 312/272-8000
UL	Underwriters Laboratories 333 Pfingsten Rd.; Northbrook, IL 60062 312/272-8800

Trade Union Jurisdictions: It is a procedural requirement that the contractor maintain, and require prime subcontractors to maintain, complete current information on jurisdictional matters, regulations actions and pending actions, as applicable to the work. Discuss new developments at appropriate project meetings at the earliest feasible dates, and record information of relevance along with the action agreed upon. The manner in which contract documents have been organized and subdivided is not intended to be an indication of jurisdictional or trade union agreements. Assign and subcontract the work, and employ tradesmen and laborers, in a manner which will not unduly risk jurisdictional disputes of a kind which could result in conflicts, delays, claims and losses in the performance of the work.

1.06 SUBMITTALS:

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

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01904

CODES AND REGULATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF THE WORK:

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

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

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

1.03 CODES AND REGULATIONS:

General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

Contractor Responsibility: The contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State and local regulations. The contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

Federal Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

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

Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final rules, Title 29, Part 1910, section 1001 and part 1926, Section 1101 of the Code of Federal Regulations

Respiratory Protection; Title 29, Part 1910, Section 134 of the Code of Federal Regulations
Construction Industry; Title 29, Part 1926, of the Code of Federal Regulations

Construction Industry
Title 29, Part 1926 of the Code of Federal Regulations

Access to Employee Exposure and Medical Records, Title 29, Part 1910, Section 2 of the Code of Federal Regulations

Hazard Communication; Title 29, Part 1910, Section 1200 of the Code of Federal Regulations

Specifications for Accident Prevention Sign and Tags; Title 29, Part 1910, Section 145 of the Code of Federal Regulations

U.S. Department of Transportation:

Hazardous Substances
Title 49, Part 171 and 172 of the Code of Federal Regulations

U.S. Environmental Protection Agency (EPA) including but not limited to:

Asbestos Abatement Projects Rule 40

40 CFR Part 763

CPTS 62044, FRL 2843-9

Title 34, Part 231, Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos

Title 40, Part 61, Sub-part A of the Code of Federal Regulations National Emission Standard for Asbestos

Title 40, Part 61, Sub-part M (Revised Sub-part B) of the Code of Federal Regulations

American National Standards Institute (ANSI) Publication:

Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems

American Society for Testing and Materials (ASTM) Publication:

E 849-82 Safety and Health Requirements relating to Occupational Exposure to Asbestos

State Requirements: Texas Civil Statutes, Article 4477-3a, and all adoptions, (TAHPR) Asbestos Exposure in Public Buildings, requires licensure of persons engaged in the removal or encapsulation of asbestos, or other asbestos related activities in all buildings of public occupancy or access.

Local Requirements: Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

1.04 STANDARDS:

General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying area adjacent to the site. The Contractor shall hold the Owner and the Owner's Representative harmless for failure to comply with any applicable standard on the part of himself, his employees, or his sub-contractors.

Standards: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018
(212) 354-3300

Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79

Practices for Respiratory Protection
Publication Z288.2-80

American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103
215/299-5400

Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849-82

Specification for Encapsulants for Friable Asbestos Containing Building Materials Proposal P-189

"Guide" Specification - 02080 Asbestos Removal AIA Service Corporation
1735 New York Avenue NW
Washington, DC

AWCI Guide Specifications for the abatement of asbestos release from spray-or trowel applied materials in buildings and other structural designs

U.S. Department of Commerce

National Institute of Standards & Technology

National Engineering Lab

Center for Building Technology

1.05 EPA GUIDANCE DOCUMENTS:

EPA Guidance Documents: Which discuss asbestos abatement work or hauling and disposal of asbestos waste materials are listed below for the Contractor's information only. These documents do not describe the work and are not a part of the work of this contract. EPA maintains an information number (800-334-8571), publications can be ordered from (800-424-9065) and (554-1404 in Washington, DC):

Asbestos-Containing Materials in School Buildings - A Guidance Document
Part 1 & 2 (Orange Books)
EPA C00090 (out of print)

Guidance for Controlling Asbestos-Containing Materials in Buildings
EPA 560/5-85-024 (Purple Book)

Friable Asbestos-Containing Materials in Schools: Identification and Notification Rule (40 CFR Part 763)

Evaluation of the EPA Asbestos-In-Schools Identification and Notification Rule
EPA 560/5-84-005

Asbestos in Buildings: National Survey of Asbestos-Containing Friable Materials
EPA 560/5-84-006

Asbestos in Buildings: Guidance for Service and Maintenance Personnel
EPA 560/5-85-018

Asbestos Waste Management Guidance
EPA 530-SW-85-007

Asbestos Fact Book
EPA Office of Public Affairs

Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials

Commercial Laboratories with Polarized Light Microscopy Capabilities for Bulk Asbestos Identification.

A Guide to Respiratory Protection for the Asbestos Abatement Industry
EPA-560-OPTS-86-001

Managing Asbestos In Place: A Building Owners Guide to Operations and Maintenance Programs for Asbestos Containing Materials
EPA 20T-2003 July 1990

1.06 NOTICES:

U.S. Environmental Protection Agency notification to the USEPA is mandated by the National Emission Standards for Hazardous Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M) for any project which involves the removal of asbestos containing materials. The Texas Department of State Health Services requires written notification no less than ten working days prior to any asbestos abatement activity, renovation or O&M activity affecting ACM, or any demolition in facilities or public buildings.

Written notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) and the Texas Department of State Health Services shall be submitted by the Contractor to the following address:

Asbestos Notification Section
Department of State Health Services
PO Box 143538
Austin, Texas 78714-3538

Notification: The following information will be included in the notification sent to the NESHAP contact:

Name and address of owner or operator.

Description of the facility being demolished or renovated, including the size, age, and prior use of the facility.

Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area of other facility components.

Location of the facility being renovated.

Scheduled starting and completion dates of renovation.

Nature of planned renovation and method(s) to be used.

Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).

Name and location of the waste disposal site where the friable asbestos waste material will be deposited.

Supplement information may be required on the Contractor's part to obtain approval. The Contractor will provide whatever information requested by the regulatory agencies.

1.07 NOTICES:

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

Permits: All asbestos waste is to be transported by an entity maintaining a current "Industrial Waste Hauler Permit" specifically for asbestos containing materials, as required for transporting of asbestos containing materials to a disposal site.

Licenses: Maintain current State Asbestos Abatement Contractor License or local jurisdiction for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01905

SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

SUMMARY: This section specifies administrative and procedural requirements for submittals required for performance of the work, including:

- Contractor's construction schedule.
- Product data.
- Miscellaneous submittals.

1.02 ADMINISTRATIVE SUBMITTALS:

Refer to other Division-1 sections and other contract documents for requirements for administrative submittals. Such submittals include, but are not limited to:

- Permits.
- Applications for Payment.
- Insurance Certificates.
- Performance and Payments Bonds.
- List of Subcontractors.

1.03 COORDINATION:

Coordinate both the listing and timing of reports and activities required by provisions of this section and other sections, so as to provide consistency and logical coordination between reports. Maintain coordination and correlation between separate reports by updating at weekly intervals. Make appropriate distribution of each report and updated report to all parties involved in the work, including the Owner's Representative and the Owner. In particular provide close coordination of the progress schedule, listing of subcontractors, progress reports, and payment.

Coordinate transmittal of different types of submittals for the related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.

The Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

1.04 SUBMITTAL:

Prepare a schedule, including work dates, work shift time, number of employees, dates of start and estimated completion including dates of preparation work, pre-abatement demolition, asbestos removal, clearance dates, and final inspection dates to the Owner's Representative prior to start of abatement.

Allow sufficient review time so that the project will not be delayed as a result of the time required to process submittals, including time for re-submittals.

Allow one week (5 working days) for review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner's Representative will promptly advise the Contractor when a submittal must be delayed for coordination.

No extension of the contract time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the work to permit processing.

1.05 PROGRESS MEETINGS:

Representatives of the Contractor, the Consultant, the Owner, and the Architect will meet at the building site or at some other designated meeting place at intervals as necessary to maintain an optimum degree of communication for the progress of the work.

Submit a revised schedule after each meeting or activity where revisions have been made. Issue the updated schedule within 3 days of the meeting.

1.06 PRE-ABATEMENT CONFERENCE:

Before any abatement work is started, the Contractor shall meet with the Owner's Representative to discuss methods and procedures to be followed during the abatement period.

1.07 REPORTING:

Daily Log: The Contractor will maintain a daily log documenting the dates and time of but not limited to, the following items:

- A. Meetings; purpose, attendees, discussion (brief),
- B. Visitations; authorized and unauthorized,
- C. Personnel, by name, entering and leaving the work area,
- D. Special or unusual events, i.e. barrier breaching, equipment failures,
- E. Air monitoring tests and test results,
- F. Documentation with the confirmation signature of the Owner's Representative of the following:
 - 1. Inspection of the work areas' preparation prior to start of removal and daily thereafter.
 - 2. Removal of any polyethylene barriers.
 - 3. Contractors' inspection prior to encapsulation.
 - 4. Removal of waste material from the work area.
 - 5. Decontamination of equipment (list items).

Provide two copies of this log at final closeout of the project to the Owner's Representative.

1.08 PAYMENT:

Progress and final payment instructions are set forth in the General and Supplemental Conditions.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01906

AIR MONITORING TESTING LABORATORY SERVICES

PART 1 - GENERAL - The area and final clearance air monitoring will be accomplished under the direction of a Certified Industrial Hygienist retained by the Owner.

1.01 DESCRIPTION OF THE WORK:

This section describes air monitoring carried out by the Owner to verify that the building beyond the work area and the outside environment remain uncontaminated. This section also sets forth airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.

Not in contract sum: This section describes work being performed by the Owner's Representative. This work is not in the Contract Sum.

Air monitoring required by OSHA is responsibility of the Contractor and is not covered in this section.

1.02 RELATED DOCUMENTS:

Drawings and general provisions of the contract, and other Division-1 Specification sections, apply to work of this section.

Air Monitoring: During work area clearance is described in Section 01915 Work Area Clearance.

1.03 AIR MONITORING:

Work Area Isolation: The purpose of the Owner's Representative air monitoring will be to detect faults in the work area isolation such as:

- Contamination of the inside of the building outside the work area with airborne asbestos fibers,
- Failure of filtration or rupture in the negative pressure system,
- Contamination of the exterior of the building with airborne asbestos fibers.

Should any of the above occur, the contractor shall immediately cease asbestos abatement activities until the fault is corrected. Work shall not recommence until authorized by the Owner's Representative.

Work Area Airborne Fiber Count: The Owner's Representative will monitor airborne fiber counts in the work area. The purpose of this air monitoring will be to detect airborne fiber counts which may significantly challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

Work Area Clearance: Will be collected to determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to a level defined by final clearance criteria. The Owner's Representative will ensure samples are collected and analyzed in

accordance with this requirement. The Owner's Representative will be conducting air monitoring throughout the course of the project.

1.04 AIRBORNE FIBER COUNTS:

Inside Work Area: Where a containment is used, maintain an average airborne fiber concentration in the work area of less than 0.1 fibers per cubic centimeter. If the fiber count rises above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8 hour period exceeds 0.2 fibers per cubic centimeter, stop all work, leave negative air system in operation and notify Owner's Representative. Do not recommence work until authorized in writing by Owner's Representative.

If airborne fiber counts exceed 0.1 fibers per cubic centimeter for any period of time cease all work until fiber counts fall below 0.1 fibers per cubic centimeter and notify Owner's Representative. Do not recommence work until authorized in writing by the Owner's Representative.

Outside Work Area: If any air sample taken outside of the work area exceeds the base line established below, immediately and automatically stop all work. If this air sample was taken inside the building and outside of critical barriers around the work area immediately erect new critical barriers as set forth in Section 01909 Temporary Containments to isolate the affected area from the balance of the building. Erect critical barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor).

Decontaminate the affected area in accordance with Section 01914 Cleaning & Decontamination Procedures.

Respiratory protection as set forth in Section 01911 Respiratory Protection shall be worn in affected area until area is cleared for reoccupancy in accordance with Section 01915 Work Area Clearance.

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

If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a temporary decontamination facility consisting of a shower room and changing room as set forth in Section 01912 Decontamination Units. After cleaning and decontamination of the affected area remove the shower room and leave the changing room in place as an air lock.

After certification of visual inspection in the work area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in the section on work area clearance.

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

1.05 ANALYTICAL METHODS:

The following methods will be used by the Owner's Representative in analyzing filters used to collect air samples during the abatement process.

Cellulose ester filters will be analyzed using NIOSH 7400 method, Issue 2. This analysis will be carried out at an AIHA accredited laboratory located off the job site or on site by a representative of

the C.I.H. who has successfully completed a NIOSH 582 course or equivalent and is a successful participant in the Asbestos Analysis Registry (AAR).

For clearance samples collected using full containments, and for work areas that will be reoccupied, analysis will be performed using TEM method.

1.06 SAMPLE VOLUMES:

General: The number and volume of air samples taken by the Owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used.

1.07 SCHEDULE OF AIR SAMPLES:

Before Start of Work: The Owner's Representative will secure the following air samples to establish a base line before start of work.

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Outside Abatement Area	1	Cellulose Ester 0.80 micron	0.005	1500	10
Abatement Area	2	Cellulose Ester 0.80 micron	0.005	1500	10

Base Line: Is an action level expressed in fibers per cubic centimeter which is the highest actual result from the background sampling process minus the blank counts.

During Abatement: The Owner has retained the services of an independent consultant to provide inspections and air sampling at the areas being abated throughout the course of the project.

Periodic sampling shall be conducted as follows:

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Inside Each Work Area	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10
Outside Work Area	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10
Output Negative Pressure System	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10

Clean Room	2/day	Cellulose Ester 0.80 micron	0.01	960	2-10
------------	-------	-----------------------------------	------	-----	------

If airborne fiber counts exceed allowed limits additional samples will be taken as necessary to monitor fiber levels.

Clearance Samples: Upon successful completion of a visual inspection of an abatement area, as scheduled by the contractor, the Owner's Representative will obtain samples as described in Section 01915 - Work Area Clearance.

NOTE: Retesting of clearance samples will be at the Contractor's expense.

Inspection: The C.I.H. or his Representative (Owner's Representative), in addition to providing air monitoring services will provide periodic, on-site inspection of all work activities. Twenty-four (24) hour advance notice of work is required. The following project points shall be key, critical inspections:

1. Inspection of Work Area(s) and Containments Prior to Start of Removal: Removal operations shall not proceed until the Owner's Representative has completed inspection of the work area preparations and provided written approval to proceed.
2. Inspection During Removal: The Owner's Representative will conduct periodic inspections throughout the duration of the project.
3. Inspection of the Work Area(s) or Containment After Completion of Removal Work, but Prior to Encapsulation of Surfaces: A visual inspection of the work site and/or containment area and removal surface will be conducted at this point by the Owner's Representative and encapsulation will not proceed until written approval to do so has been received by the Contractor. The Owner shall be contacted by their on-site representative so that they have the opportunity to accompany their on-site representative during the visual inspection.
4. Work Area(s) or Containment Clearance, After Encapsulation and Prior to Work Area or Containment Disassembly: Air clearance tests shall be conducted after a visual inspection of the containment area has been accomplished and the work area has been encapsulated. Clearance air samples shall be collected once the encapsulant has completely dried. A level of ≤ 0.01 fibers per cubic centimeter of air sampled on ALL filters, as evaluated by PCM will be required for clearance.

For TEM clearance sampling, clearance air samples shall be collected prior to encapsulation of the substrate and the work area. A level of ≤ 70 st/mm² on all samples collected, as evaluated by TEM will be required for clearance. Once clearance has been achieved, the substrate and work area shall be encapsulated while the negative pressure containment remains operational. After the encapsulant has dried, the containment shall be disassembled.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 ADDITIONAL TESTING:

The Contractor may conduct his own air monitoring and laboratory testing. If the contractor elects to do this, the cost of such air monitoring and laboratory testing shall be included in the contract sum.

3.02 PERSONAL MONITORING:

Perform air monitoring as required to meet OSHA requirements for maintenance of Time Weighted Averaged (TWA) fiber counts for types of respiratory protection provided. Owner Representatives will not be performing air monitoring to meet these OSHA requirements as part of this contract. A copy of the personnel monitoring results shall be submitted to the Owner's Representative at least every three (3) days.

Retests and Reinspections:

Additional sample collection and inspections by the Owner's Representative, if required due to failure of the Contractor to achieve clearances, containment failure, retests, etc. will be backcharged by the Owner to the Contractor at the Owner's cost for time and testing.

Testing Outside of Project Schedule:

If the Contractor fails to achieve completion within the contract time schedule, the costs of inspections and air monitoring services will be backcharged to the Contractor by the Owner at the Owner's cost for time and testing.

- END OF SECTION -

SECTION 01907

TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS:

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

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT:

General: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.02 SCAFFOLDING:

Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.

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

Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

2.03 WATER SERVICE:

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

Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each decontamination unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

Hot Water: Will not be available from the building hot water system.

2.04 ELECTRICAL SERVICE:

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

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

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

Ground Fault Protection: Provide receptacle outlets equipped with groundfault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.

Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

Lamps and Light Fixtures: Provide general service incandescent lamps of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

2.05 FIRST AID:

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

2.06 FIRE EXTINGUISHERS:

Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires.

In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of recommended types for the exposures in each case.

PART 3 - EXECUTION

3.01 SCAFFOLDING:

During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged. Clean, as necessary, debris from non slip surfaces.

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

3.02 INSTALLATION, GENERAL:

General: Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the work.

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

3.03 WATER SERVICE:

General: The Contractor will bear the cost of all temporary connections if the service is not available from normal on-site services. Water connection to the Owner's existing potable water system is limited to one 3/4" pipe size connection and a maximum flow of 10 gallons per minute each to hot and cold water supply. Supply hot and cold water to the Decontamination Unit in accordance with Section 01912. Hot water may be secured from the buildings hot water system. Maintain hose connections and outlet valves in leakproof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

3.04 ELECTRICAL SERVICE:

General: The Contractor will bear the cost of all temporary connections if the service is not available from normal on-site services. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the abatement period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

Lockout: Lockout all existing power to or through the work area. Unless specifically noted otherwise, existing power and lighting circuits to the work area are not to be used. All power and lighting to the work area and decontamination units are to be provided from a temporary electrical panel.

Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be at least exposed to damage from abatement operations.

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

3.05 SANITARY FACILITIES:

Toilets: The contractor shall provide their own facilities.

3.06 FIRE EXTINGUISHERS:

Fire Extinguishers: Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each work area, in equipment room and one outside work area in clean room. The Texas Department of State Health Services requires that at least one fire extinguisher with a minimum National Fire Protection Association rating of 10BC (dry chemical) be placed within each abatement project containment for every 1,000 square feet, or fraction, of containment.

- END OF SECTION -

SECTION 01908

TEMPORARY PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of the contract, and other Division-1 Specification sections, apply to work of this section.

For the areas requiring full containment, the contractor shall hold a valid and current license to use any patented pressure differential and air circulation system which is patented, such as Patent No. 4,604,111 held by Anthony Natale, or use an alternate method for establishing negative pressure. Proof of such licensure or alternate method shall be demonstrated at the Pre-Construction Conference.

Monitoring: Continuously monitor and record the pressure differential between the work area and the building outside of the work area with a monitoring device incorporating a continuous recorder (e.g. strip chart). If more than one containment is operated concurrently, a separate continuous record will be required for each containment.

1.02 SUBMITTALS

Before start of work submit design of pressure differential system to the Owner's Representative for review. Do not begin work until submittal is returned with the Owner's Representative written approval indicating that the submittal is returned for unrestricted use. Include in the submittal at a minimum:

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

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

Pressure differential across work area containments anticipated.

Description of methods of testing for correct airflow and pressure differentials.

Manufacturer's product data on the machines to be used.

Location of the machines in the work space.

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

Description of work practices to insure that airborne fibers travel downstream from workers.

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

On a daily basis: Submit printout from the pressure differential monitoring equipment. Mark the printout with the date and start time of each day. Use printout paper that indicates elapsed time in

intervals no greater than hours. Cut printout into segments by day, attach to 8 1/2 by 11" paper. Label with project name, contractor's name and date.

1.03 QUALITY ASSURANCE:

Monitor pressure differential across decontamination unit with a differential pressure meter equipped with a strip chart recorder. Take corrective action if pressure differential falls below 0.02 inches of water. Ensure that the strip chart is annotated to readily identify the date, project, time of start of the recorder, and scale of the chart paper.

The manometer must be calibrated in the presence of the Owner's Representative using the owner's manual for the instrument.

PART 2 - PRODUCTS

2.01 HEPA FILTERED FAN UNITS:

General: Supply the required number of asbestos air filtration units to the site in accordance with these specifications. Each unit shall include the following:

Cabinet: Constructed of steel or other durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard-size doorways. Cabinet shall be factory sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance. Access to and replacement of all air filters shall be from intake end. Unit shall be mounted on casters or wheels.

Fans: Rate capacity of fan according to useable air-moving capacity under actual operating conditions. Use centrifugal-type fan.

HEPA Filters: The final filter shall be the HEPA type. The filter media (folded into closely pleated panels) must be completely sealed on all edges with a structurally rigid frame.

A continuous rubber gasket shall be located between the filter and the filter housing to form a tight seal.

Each filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles. Testing shall be in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A.

Each filter shall bear a UL586 label to indicate ability to perform under specified conditions.

Each filter shall be marked with: The name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.

Prefilters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of prefiltration are required.

The first-stage prefilter shall be a low-efficiency type (e.g., for particles 10 um and larger.)

The second-stage (or intermediate) filter shall have a medium efficiency (e.g., effective for particles down to 5 um.)

Prefilters and intermediate filters shall be installed either on or in the intake grid of the unit and held in place with special housings or clamps.

Instrumentation: Each unit shall be equipped with a Magnahelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed. A table indicating the useable air-handling capacity for various static pressure readings on the Magnahelic gauge shall be affixed near the gauge for reference, or the Magnahelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point. Provide units equipped with an elapsed time meter to show the total accumulated hours of operation.

Safety and Warning Devices: The unit shall have an electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter. Units shall be equipped with automatic shutdown system to stop fan in the event of a major rupture in the HEPA filter or blocked air discharge. Warning lights are required to indicate normal operation, too high a pressure drop across the filters (i.e., filter overloading), and too low of a pressure drop (i.e., major rupture in HEPA filter or obstructed discharge).

Electrical components shall be approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit shall be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet shall be grounded.

Manufacturers: Subject to compliance with requirements.

PART 3 - EXECUTION

3.01 PRESSURE DIFFERENTIAL:

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

3.02 MONITORING

Continuously maintain the work area at an air pressure that is lower than that in the surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal a static pressure of 0.02 inches of water. Record the pressure differential using a continuous recording device, i.e., strip chart recorder.

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

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

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

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

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

Vent HEPA filtered fan units to outside of the building unless authorized in writing by Owner's Representative.

Mount units to exhaust directly or through disposable ductwork.

Use only disposable ductwork except for sheet metal connections and elbows.

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

Use inflatable, disposable plastic ductwork in lengths not greater than 100 feet.

Use spiral wire-reinforced flex ductwork in lengths not greater than 50 feet.

If the direction of the discharge from a fan unit is not aligned with the duct, use sheet metal elbow to change direction. Use six (6) feet of spiral reinforced duct after direction change.

Isolation of elevators, stair towers, and return intakes: Erect seals with an air space at the doors to elevators and stair towers.

3.03 PREPARATION OF THE WORK AREA:

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

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

Determining the Ventilation Requirements: Provide fully operational negative pressure system supplying a minimum of one air change every 15 minutes. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total ventilation requirement in cubic feet per minute (cfm) for the work area by dividing this volume by the air change rate.

$$\text{Ventilation Required (CFM)} = \text{Volume of work area (cu. ft.)} / 15 \text{ min.}$$

Determine number of units needed to achieve 15 minute change rate by dividing the ventilation requirement (CFM) above by capacity of exhaust unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machines labeled operating characteristics.

$$\begin{aligned} \text{Number of Units Needed} = \\ \frac{\text{Ventilation Requirement (CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}} \end{aligned}$$

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

Vent to the outside of the building unless authorized by the Owner's Representative. Any negative air duct penetrating a containment shall consist of two layers of 6 mil inflatable poly ductwork or spiral wire-reinforced duct work.

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

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

Equipment Decontamination: Across the holding room with the wash room at a lower pressure than the clean room.

3.04 USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM:

Testing the System: Test negative pressure system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility setup, and the fan unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of pressure differential system to Owner's Representative.

Demonstrate operation of each HEPA filtered unit and differential pressure monitoring equipment to the Owner's Representative. The system should result in the following actions:

Plastic barriers and sheeting move lightly in toward work area.

Curtain of decontamination units move lightly in toward work area.

There is a noticeable movement of air through the decontamination unit.

Use smoke tube to demonstrate air movement from clean room to shower room, from shower room to equipment room, and from equipment room to work area.

Use smoke tubes to demonstrate a positive motion of air across entire area in which work is to be performed.

Modify the Pressure Differential System as necessary to demonstrate successfully the above.

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

Do not shut down air pressure differential system during encapsulating procedures, unless authorized by the Owner's Representative in writing.

Start abatement work at a location farthest from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and exhaust units are operating again.

At completion of abatement work, allow exhaust units to run as specified under Section 01914 to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination if dry or only partially wetted asbestos material was encountered during any abatement work.

Dismantling the System: When a final inspection and the results of final air tests indicate that the area has been decontaminated, exhausts units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter and seal intake to the machine with 6 mil polyethylene to prevent environmental contamination from the filters.

- END OF SECTION -

SECTION 01909

TEMPORARY CONTAINMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 SUBMITTALS:

Submit contingency plans for safe evacuation of the work area in case of fire or injury.

1.03 SAFETY:

Contact fire control agencies to review procedures prior to start of work.

PART 2 - PRODUCTS

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick.

Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to aggressively stick to sheet polyethylene.

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

PART 3 - EXECUTION

3.01 SEQUENCE OF WORK:

Carry out work of this section sequentially. Complete each activity before proceeding to the next.

3.02 GENERAL:

Work Area: Is the location where asbestos-abatement work occurs. It is a variable of the extent of work of the contract. It may be a portion of a room, a single room, or a complex of rooms. A "work area" is considered contaminated during the work and must be isolated from the balance of the building and decontaminated at the completion of the asbestos-control work.

Completely isolate the work area from other parts of the building so as to prevent asbestos containing dust or debris from passing beyond the isolated area. Should the area beyond the work area(s) become contaminated with asbestos containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in Section 01914. Perform all such required cleaning or decontamination at no additional cost to the Owner.

Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to erection of Work Area Isolation.

Remove all uncontaminated removable furniture, equipment, and/or supplies from the work area before commencing work, or completely cover with two (2) layers of polyethylene sheeting, at least 6 mil in thickness, securely taped in place with duct tape. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached.

Disable Ventilating Systems or any other system bringing air into or out of the work area. Disable system by disconnecting wires, removing circuit breakers, by lockable switch or other positive means that will prevent accidental premature restarting of equipment.

Lockout power to the work area by switching off all breakers serving power or lighting circuits to the work area.

Emergency Exits: Provide emergency exits and emergency lighting at each exit, where full containment will be utilized.

3.03 CONTROL ACCESS:

Permit access to the work area only through the decontamination unit. All other means of access shall be closed off and sealed and warning signs displayed on the clean side of the sealed access.

Provide warning signs at each visual or physical barrier reading as followings in both English and Spanish:

LEGEND	NOTATION
KEEP OUT	3" Sans Serif Gothic or Block
BEYOND THIS POINT	1" Sans Serif Gothic or Block
ASBESTOS ABATEMENT WORK	1" Sans Serif Gothic or Block
IN PROGRESS	1" Sans Serif Gothic or Block
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH	14 Point Gothic

3.04 ALTERNATE METHODS OF CONTAINMENT:

Alternate methods of containing the work area may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without prior written approval of the Owner's Representative.

3.05 RESPIRATORY AND WORKER PROTECTION:

Before proceeding beyond this point in providing temporary containments:

Provide respiratory protection per Section 01911.

Provide worker protection per Section 01910.

3.06 CRITICAL BARRIERS:

Completely Separate the work area from other portions of the building, and the outside by sheet plastic barriers at least true 6 mil in thickness, and/or by sealing cracks leading out of the work area with duct tape.

Clean all surfaces in work area before enclosing by wet wiping and with a HEPA filtered vacuum prior to the installation of any sheet plastic.

Individually seal: All ventilation openings (supply and exhaust), lighting fixtures, locks, doorways, windows, convectors and speakers, and other openings into the work area with duct tape alone or with polyethylene sheeting at least 6 mil in thickness, taped securely in place with duct tape. Maintain seal until all work including project decontamination is completed. Take care in sealing off lighting fixtures to avoid melting or burning of sheeting.

Provide sheet plastic barriers, two layers minimum at least true 6 mil in thickness as required to completely seal openings from the work area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.

Provide Decontamination Units per Section 01912.

Provide Negative Pressure System per Section 01908.

Clean housings and ducts of all overspray materials prior to erection of the critical barrier polyethylene sheeting.

3.07 PRIMARY BARRIER:

Clean all contaminated furniture, equipment, and/or supplies with a HEPA filtered vacuum cleaner or by wet cleaning prior to being moved or covered. All equipment, furniture, etc., is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by the Owner's Representative.

Clean all surfaces in work area before enclosing by wet wiping and with a HEPA filtered vacuum prior to the installation of any sheet plastic.

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

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

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

Floors & Wall preparation: floor sheeting shall completely cover all floor surfaces not to be removed and consist of a minimum of two layers of sheet plastic of at least 6 mil true thickness. Floor sheeting's shall extend up sidewalls at least 12 inches & be sized to minimize the number of seams. Wall sheeting shall completely cover all wall surfaces not to

be removed & consist of a minimum of two layers of 4 mil thick sheet plastic. It shall be installed as to extend beyond wall/floor joints at least 12 inches.

Cover any carpeting and hard wood floors in the work area with 3 layers of true 6 mil thick sheet plastic. Place corrugated cardboard sheets between the top and middle layers of the sheet plastic.

All sheet plastic in areas where scaffolding is to be used shall be covered with a single layer of 1/2" CDX plywood or 1/4" tempered hardboard. Wrap edges & corners of each sheet with duct tape. Dispose of all plywood and/or hardboard as ACM after abatement is complete.

Stairs and Ramps: Do not cover stairs or ramps with unsecured sheet plastic. Where stairs or ramps are covered with plastic, provide 3/4" exterior grade plywood treads securely held in place, over plastic. Do not cover rungs or rails with any type of protective materials.

Visual Barrier: Where the work area is immediately adjacent to or within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil. in thickness so that the work procedures are not visible to building occupants.

Viewing Window: Where feasible, install a viewing window, 18" x 18" plexiglass, for each 260 linear feet of containment walls constructed. This window shall be located at a reasonable viewing height and should permit viewing of at least 51% of the abatement work area.

Before beginning work within the containment and at the beginning of each shift, the containment shall be inspected for breaches and smoke tested for leaks, and any leaks sealed in accordance with 29 CFR 1926.1101 (g)(5)(i)(B)(1).

3.08 EXTENSION OF WORK AREA

Extension of work area: If the containment barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the work area, enclose it as required by this section of the specification and decontaminate it as described in Section 01914.

3.09 SECONDARY BARRIER:

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

3.10 STOP WORK:

If the critical or primary barrier is breached in any manner, stop work immediately. Do not start work until authorized in writing by the Owner's Representative.

- END OF SECTION -

SECTION 01910

WORKER PROTECTION

PART 1 - GENERAL

THE MINIMUM RESPIRATORY PROTECTION DURING REMOVAL INSIDE CONTAINMENTS WILL BE POWERED AIR-PURIFYING RESPIRATORS. HALF FACE DUAL CARTRIDGE RESPIRATORS EQUIPPED WITH HEPA/ORGANIC CARTRIDGES CAN BE USED DURING THE REMOVAL OF FLOOR TILE MASTIC IF USING CHEMICAL SOLVENTS. THE CONTRACTOR SHALL PROVIDE INFORMATION TO ASSURE THAT THE ABOVE RESPIRATORY PROTECTION IS SUFFICIENT IN ACCORDANCE WITH 29 CFR 1926.1101 NEGATIVE EXPOSURE ASSESSMENT REQUIREMENTS.

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK:

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

1.03 RELATED WORK SPECIFIED ELSEWHERE:

Respiratory protection is specified in Section 01911.

1.04 WORKER TRAINING:

Train, in accordance with 29 CFR 1926 and 40 CFR part 763, all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in part 763 to the following:

Methods of recognizing asbestos.

Health effects associated with asbestos.

Relationship between smoking and asbestos in producing lung cancer.

Nature of operations that could result in exposure to asbestos.

Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:

Engineering controls

Work practices

Respirators

Housekeeping procedures

Hygiene facilities

Protective clothing

Decontamination procedures

Emergency procedures

Waste disposal procedures

Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134.

Appropriate work practices for the work.

Requirements of medical surveillance program.

Review of 29 CFR 1926.

Negative air systems.

Work practices including hands on or on-job training.

Personal decontamination procedures.

Air monitoring, personal and area.

1.05 MEDICAL EXAMINATIONS:

Provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8 hour time weighted average. In the absence of specific airborne fiber data, provide medical examination for all workers who will enter the work area for any reason. Examination shall, as a minimum, meet OSHA requirements as set forth in 29 CFR 1926. In addition, provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

1.06 SUBMITTALS:

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

State and local License: Submit evidence that all workers have been trained, certified and accredited as required by state or local code or regulation.

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

Report from medical examination: Conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the work area. Submit, at a minimum, for each worker the following:

Name and Social Security Number

Physicians written opinion from examining physician including at a minimum the following:

Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.

Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.

Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

Copy of information that was provided to physician in compliance with 29 CFR 1926.

Statement that the worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

PART 2 - EQUIPMENT

2.01 PROTECTIVE CLOTHING:

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

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

Goggles: Provide eye protectives (goggles) as required by OSHA for all workers involved in scraping, spraying, or any other activity which may potentially cause eye injury.

Gloves: Provide work gloves to all workers and require that they be worn at all times in the work area. Do not remove gloves from work area, dispose of an asbestos contaminated waste at the end of the work.

2.02 ADDITIONAL PROTECTIVE EQUIPMENT:

New/unused respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner and other authorized representatives. Provide two (2) respirators and six (6) complete coveralls and, where applicable, six (6) respirator filter changes per day.

PART 3 - EXECUTION

3.01 GENERAL:

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

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

3.02 DECONTAMINATION PROCEDURES:

Require all workers to adhere to the following personal decontamination procedures whenever they leave the work area:

Type C Supplied Air or Powered Air-Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area:

When exiting area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.

Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:

Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR), hold blower unit above head to keep canisters dry.

With respirator still in place, thoroughly wet body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.

Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breath.

Carefully wash facepiece of respirator inside and out.

If using PAPR, shut down in the following sequence, first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.

Shower completely with soap and water.

Rinse thoroughly.

Rinse shower room walls and floor prior to exit.

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

Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area with a half or full face cartridge type respirator:

When exiting area, remove disposable coveralls, disposable headcovers, and disposable footwear covers or boots in the equipment room.

Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos fibers while showering. The following procedure is required as a minimum:

Thoroughly wet body from neck down.

Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.

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

Dispose of wet filters from air purifying respirator.

Carefully wash facepiece of respirator inside and out.

Shower completely with soap and water.

Rinse thoroughly.

Rinse shower room walls and floor prior to exit.

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

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

3.03 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

Following this section is a Certificate of Worker Training. After each worker has been included in the contractor's Respiratory Protection Program, completed the training program, and medical examination, secure a fully executed copy of this form.

END OF SECTION -

SECTION 01911

RESPIRATORY PROTECTION

PART 1 - GENERAL - THE MINIMUM RESPIRATORY PROTECTION DURING REMOVAL WILL BE HALF FACE DUAL CARTRIDGE RESPIRATORS EQUIPPED WITH HEPA CARTRIDGES. THE CONTRACTOR SHALL PROVIDE INFORMATION TO ASSURE THAT THE ABOVE RESPIRATORY PROTECTION IS SUFFICIENT IN ACCORDANCE WITH 29 CFR 1926.1101 NEGATIVE EXPOSURE ASSESSMENT REQUIREMENTS.

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK:

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

1.03 STANDARDS:

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

1.04 SUBMITTALS:

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

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

System Diagram: When a Type "C" supplied air respiratory system is required by the work, submit drawing showing assembly of components into a complete supplied air respiratory system. Include diagram showing location of compressor, filter banks, backup air supply tanks, hose line connections in work area(s), routing of air lines to work area(s) from compressor.

Operating Instruction: Submit complete operating and maintenance instructions for all components and systems as a whole. Submittal is to be in bound manual form suitable for field use.

Respiratory Protection Program: Submit level of respiratory protection intended for each operation required by the project. Submit this information on a "Respiratory Protection Program" form.

Historic Airborne Fiber Data/Negative Initial Exposure Assessment: Submit airborne asbestos fiber count data calculated by an independent air monitoring firm within the last 12 months to substantiate selection of proposed respiratory protection. Data should include Negative Initial Exposure Assessment which means a demonstration by the employer/contractor, which complies with the criteria in the paragraph of this section; 29 CFR 1926.110 (f)(2)(iii), that employee exposure during an operation is expected to be consistently below the PELs. Data submitted shall include at least the following for each procedure required by the work:

Date of Measurements

Employees Monitored

Operations Monitored and Control Methods Used

Sampling and Analytical Methods Used and Evidence of their Accuracy

Number, Duration, and Results of Samples Taken

1.05 AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS:

If at any time, Type "C" supplied air respirator are used or required, provide air used for breathing in Type "C" supplied air respiratory systems that meets or exceeds standards set for C.G.A. Type 1 (Gaseous Air) Grade D.

1.06 ALLOWABLE CONTAMINANTS:

The following table sets for the quantity of any given contaminant allowed according to the referenced standards:

CONTAMINANT	CGA TYPE 1 (Gaseous Air)			CSA Z180.1
	Grade D	Grade E	Grade H	
Carbon Monoxide, PPM/V	10	10	5	5
Carbon Dioxide, PPM/V	1000	500	.5	500
Condensed Hydrocarbons, (mg/cu meter)	5	5	---	1
Gaseous Hydrocarbons - As Methane, PPM/V	---	---	10	25
Water Vapor - PPM/V Dewpoint	(1) -50F	(1) -50F	(1) -50F	27 -63F
Objectionable Odors	None	None	None	None
Nitrogen Dioxide, PPM/V	---	---	0.5	0.2

Nitrous Oxide, PPM/V	---	---	---	5
Sulfur Dioxide	---	---	0.5	---
Halogenated solvents, PPM/V	---	---	1	---
Other gaseous contaminants	---	---	---	(2)
Inorganic particles, (mg/cu meter)	---	---	---	1
Oxygen content (v/v)	19.5 – 23.5%			

NOTE:

Indicates that the standard shows no limiting characteristics:

- (1) The CGA standards do not call out a specific moisture limit when the ambient temperature is above freezing. However, since a moisture content no greater than a -50 Degrees Fahrenheit dewpoint (66 PPM/V) is necessary for carbon monoxide elimination, the CO limits could not be met unless the air were dried to a -50 Degrees Fahrenheit dewpoint or better.
- (2) Maximum allowable content of trichlorotrifluoroethane, dichlorodifluoromethane, and chlorodifluoromethane is 2 PPM/V for each. Unlisted contaminants shall not exceed one-tenth of the threshold limit values (TLV's) for chemical substances in workroom air adopted by the American Conference of Governmental Industrial Hygienists (ACGIH).

1.07 DELIVERY:

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

PART 2 - EQUIPMENT

2.01 AIR PURIFYING RESPIRATORS:

Respirator Bodies: Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.

Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2 (1980). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH certification (P100).

Non-permitted respirators: Do not use single use, disposable or quarter face respirators.

2.02 SUPPLIED AIR RESPIRATOR SYSTEMS:

Provide equipment capable of producing air of the quality and volume required by the above reference standards applied to the job site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.

Face Piece and Hose: Provide full face piece and hose by same manufacturer that has been certified by NIOSH as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure face-piece.

Auxiliary backup system: In atmospheres which contain sufficient oxygen (greater than or equal to 10.5% oxygen) provide a pressure-demand full face piece supplied air respirator equipped with an emergency back up HEPA filter.

Escape air supply: In atmospheres which are oxygen deficient (less than 19.5% oxygen) provide a pressure-demand full face piece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.

Backup air supply: Provide a reservoir of compressed air located outside the work area which will automatically maintain a continuous uninterruptable source of air automatically available to each connected face piece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the work area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average sized adult male engaged in moderately strenuous activity.

Warning-device: Provide a warning device that will operate independently of the building's power supply. Locate so that the alarm is clearly audible above the noise level produced by equipment and work procedures in use, in all parts of the work area and at the compressor. Connect alarm to warn of:

Compressor shut down or other fault requiring use of backup air supply, carbon monoxide (CO) levels in excess of 5 PPM/V.

Carbon Monoxide (CO) Monitor: Continuously monitor and record on a strip chart recorder carbon monoxide (CO) levels. Place monitors in the air line between compressor and back-up air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices".

Compressor Shut Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:

Carbon Monoxide (CO) concentrations exceed 5 PPM/V in the air line between the filter bank and backup air supply.

Compressor temperature exceeds normal operating range.

Compressor Motor: Provide a compressor driven by an electric motor. Do not use a gas or diesel engines to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.

Compressor Location: Locate compressor outside of building in location that will not impede access to the building, and that will not cause a nuisance by virtue of noise or fumes to occupied portions of the building.

Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from motors or buildings.

After Cooler: Provide an after cooler at entry to filter system which is capable of reducing temperatures to outside ambient air temperatures.

Self Contained Breathing Apparatus (SCBA): Configure system to permit the recharging of 1/2 hour 2260 PSI SCBA cylinders.

PART 3 - EXECUTION

3.01 GENERAL:

Respiratory Protection Program: Comply with ANSI Z88.2 - 1980 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.

Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.

Require that a respirator be worn by anyone in a work area at all times, regardless of activity, during a period that starts with any operation which could cause airborne dust until the area has been cleared for re-occupancy in accordance with Section 01915.

Regardless of airborne fiber levels: Require that the minimum level of respiratory protection used be powered air-purifying respirators with high efficiency filters for removal work inside containments and half face dual cartridge respirators equipped with organic/high efficiency filters for the removal of floor tile mastic using chemical solvents.

Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

3.02 FIT TESTING:

Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a Certified Industrial Hygienist. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which he has been trained and fit.

On a weekly basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube in accordance with the fit test procedures outlined in 29 CFR 1910.134 Appendix A.

Upon each wearing: Require that each time an air-purifying respirator is put on that it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980) and 29 CFR 1910.134.

3.03 TYPE OF RESPIRATORY PROTECTION REQUIRED:

Provide respiratory protection as indicated in paragraph below. Where paragraph below does not apply, determine the proper level of protection by dividing the expected or actual airborne fiber count in the work area by the "protection factors" given below. The level of respiratory protection which supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the permissible exposure limit (PEL) is the minimum level of protection allowed.

3.04 PERMISSIBLE EXPOSURE LIMIT (PEL):

8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed the following.

Fibers: For purposes of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), NIOSH 7400 procedure, or asbestos fibers of any size as counted using either a scanning or transmission electron microscope.

Time Weighted Average (TWA) - 0.1 fibers/cubic centimeter

Excursion Limit - 1.0 fiber/cubic centimeter over any thirty (30) minute sampling period.

3.05 RESPIRATORY PROTECTION FACTOR:

<u>RESPIRATOR TYPE</u>	<u>PROTECTION FACTOR</u>
Air purifying: Negative pressure respirator High efficiency filter Half facepiece	10
Air purifying: Negative pressure respirator High efficiency filter Full facepiece	50
Powered-air purifying (PAPR): Positive pressure respirator High efficiency filter Full facepiece	1000
Powered-air purifying (PAPR): Positive pressure respirator High efficiency filter Half facepiece	50
Type C supplied air: Positive pressure respirator Continuous-flow Half facepiece	50

Type C supplied air: Positive pressure respirator Continuous-flow Full facepiece	1000
Type C supplied air: Positive pressure respirator Pressure demand Half facepiece	50
Type C supplied air: Positive pressure respirator Pressure demand Full facepiece	1000
Type C supplied air: Positive pressure respirator Demand mode Half facepiece	10
Type C supplied air: Positive pressure respirator Demand mode Full facepiece	50
Self-contained breathing apparatus (SCBA): Demand mode Half facepiece	10
Self-contained breathing apparatus (SCBA): Demand mode Full facepiece	50
Self-contained breathing apparatus (SCBA): Pressure demand Full facepiece	10,000

3.06 AIR PURIFYING RESPIRATORS:

Negative pressure - half or full face mask: Supply a sufficient quantity of respirator filters approved for asbestos so that workers can change filters during the work day. Require that respirators be wet-rinsed and filters discarded each time a worker leaves the work area. Require that new filters be installed each time a worker re-enters the work area. Store respirators and filters at the job site in the changing room and protect totally from exposure to asbestos prior to their use.

Powered air purifying - half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos dust so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords to be washed each time a worker leaves the work area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

3.07 TYPE "C" RESPIRATOR:

Air Systems Monitor: Continuously monitor the air system operation including compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual trained, by manufacturer of the equipment in use or by a Certified Industrial Hygienist, in the operation and maintenance of the system to provide this monitoring. Assign no other duties to this individual which will take him away from monitoring the air system.

3.08 RESPIRATORY PROTECTION PROGRAM:

Submit a completed "Respiratory Protection Program" form indicating type of respiratory protection proposed for each portion of the work.

- END OF SECTION -

SECTION 01912

DECONTAMINATION UNITS

PART 1 - GENERAL: A DECONTAMINATION UNIT, AS DESCRIBED IN THIS SECTION, SHALL BE REQUIRED DURING THE REMOVAL OF ALL ASBESTOS CONTAINING MATERIALS FROM INSIDE THE BUILDINGS.

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK:

Provide separate personnel and equipment decontamination facilities. Require that the personnel decontamination unit be the only means of ingress and egress for the work area. Require that all materials exit the work area through the equipment decontamination unit.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

Refer to Section 01907 Temporary Facilities for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

PART 2 - PRODUCTS

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick as indicated, clear, frosted, or black as indicated.

Duct Tape: Provide duct tape in 2" or 3" widths, as indicated, with an adhesive which is formulated to aggressively stick to sheet polyethylene.

Spray Cement: Provide adhesive which is specifically formulated to stick tenaciously to sheet polyethylene.

Shower: Provide a shower which meets approval of the Owner's Representative.

Shower Head and Controls: Provide a factory made shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that the control of water temperature, flow rate, and shut off is from inside shower without outside aid.

Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying contaminated water from the work area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.

Primary Filter - Pass particles 20 microns and smaller

Secondary Filter - Pass particles 5 microns and smaller

Sump Pump: Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the

sump through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.

PART 3 - EXECUTION

1.01 GENERAL:

Personnel Decontamination Unit: Provide a personnel decontamination unit consisting of a serial arrangement of connected rooms or spaces, changing room, shower room, equipment room. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through personnel decontamination unit. Provide temporary lighting within decontamination units as necessary to reach a lighting level of 100 foot candles.

Changing Room (clean room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing. Construct using polyethylene sheeting, at least 6 mil in thickness, to provide an airtight seal between the changing room and the rest of the building. Locate so that access to work area from changing room is through shower room. Separate changing room from the building by a sheet polyethylene flapped doorway.

Require workers to dress in clean disposable coveralls, and don respiratory protection equipment. Do not allow asbestos contaminated items to enter this room. Require workers to enter this room either from outside the structure dressed in street clothes or from the showers.

An existing room may be utilized as the changing room if it is suitably located and of a configuration whereby workmen may enter the changing room directly from the shower room. Protect all surfaces of room with sheet plastic as set forth in Section 01909 Temporary Containments. Authorization for this must be obtained from the Owner's Representative in writing prior to start of construction.

Maintain floor of changing room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.

Damp wipe all surfaces twice after each shift change with a disinfectant solution.

Provide a continuously adequate supply of disposable bath towels.

Provide posted information for all emergency phone numbers and procedures.

Shower Room: Provide a completely water tight operational shower to be used for transit by cleanly dressed workers heading for the work area from the changing room, or for showering by workers headed out of the work area after undressing in the equipment room.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the changing and equipment rooms with air tight walls fabricated of 6 mil polyethylene.

Provide splash proof entrances to changing and equipment rooms with 2 doors.

Provide shower head and controls.

Provide temporary extensions of existing hot and cold water and drainage, as necessary, for a complete and operable shower.

Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.

Arrange so that water from showering does not splash into the changing or equipment rooms.

Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.

Provide flexible hose shower head.

Pump waste water to drain or to storage for subsequent disposal. If pumped to drain, provide 20 micron and 5 micron waste water filters in line to sanitary sewer drain or waste water storage. Change filters daily or more often if necessary. Locate filters inside shower unit so that water lost during filter changes is caught by shower pan.

Provide hose bib.

Airlock: Provide an airlock between the shower room and the equipment room. This is a transit area for workers. Separate this room from the equipment room by a sheet plastic doorway.

Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers. Separate this room from the work area by a 6 mil polyethylene flap doorway.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the shower room and work area with air tight walls fabricated of 6 mil polyethylene.

Work Area: Separate work area from the equipment room by polyethylene barriers. If the airborne asbestos level in the work area is expected to be high, as in dry removal, add an intermediate cleaning space between the equipment room and the work area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6 mil polyethylene per shift change and remove contaminated layer after each shift.

CONSTRUCTION:

Walls and Ceiling: Construct air tight walls and ceiling using polyethylene sheeting, at least 6 mil in thickness. Attach to existing building components or a temporary framework.

Floors: Use 2 layers (minimum) of 6 mil polyethylene sheeting to cover floors in the equipment, shower (underneath shower pan), and changing rooms. Provide an additional layer in the equipment room for every shift change expected. Roll one layer of plastic from equipment room into work area after each shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

Doors: Fabricated from overlapping sheets with openings a minimum of three feet (3') wide. configure so that sheeting overlaps adjacent surfaces. Weight sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6') between entrance and exit of any room.

If the decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 1/4 inch headboard or 1/2 inch plywood "ceiling" with polyethylene sheeting, at least 4 mil in thickness covering the top of the "ceiling".

Alternate methods of providing decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.

Electrical: Provide subpanel at changing room to accommodate all removal equipment. Power subpanel directly from a building electrical panel. Connect all electrical branch circuits in decontamination unit and particularly any pumps in shower room to a ground-fault circuit protection device.

If the decontamination unit is to be constructed outside a facility, the decontamination unit shall be constructed using plywood with a hinged lockable door. Louvers shall be located on the door to allow for make-up air once the door is locked at the end of each work day.

3.02 DECONTAMINATION SEQUENCE:

Entering Work Area:

Worker enters changing room and removes street clothing, puts on clean disposable overalls and respirator, and passes through the shower room into the equipment room.

Any additional clothing and equipment left in equipment room needed by the worker are put on in the equipment room.

Worker proceeds to work area.

Exiting Work Area:

Before leaving the work area, require the worker to remove all gross contamination and debris from overalls and feet. The worker then proceeds to the equipment room and removes all clothing except respiratory protection equipment. Extra work clothing may be stored in contaminated end of the equipment room. Disposable coveralls are placed in a bag for disposal with other material. decontamination procedures found in Section 01910 shall be followed by all individuals leaving the work area.

After showering, the worker moves to the changing room and dresses in either new coveralls for another entry or street clothes if leaving.

3.03 EQUIPMENT DECONTAMINATION UNITS:

Provide an equipment decontamination unit consisting of a serial arrangement of rooms, clean room, holding room, wash room for removal of equipment and material from work area. Do not allow personnel to enter or exit work area through equipment decontamination unit.

Wash Down Station: Provide an enclosed shower unit located in work area just outside wash room as an equipment, bag and container cleaning station.

Wash Room: Provide wash room for cleaning of bagged or containered asbestos-containing waste materials passed from the work area. Separate this room from the work area by a single flap of 6 mil polyethylene sheeting.

Holding Room: Provide holding room as a drop location for bagged asbestos-containing materials passed from the wash room. Separate this room from the adjacent rooms by double flaps fabricated from 1/16" +/- thick single ply rubber roofing material either EPDM or Neoprene.

Clean Room: Provide clean room to isolate the holding room from the building exterior. Separate this room from the exterior by a single flap of 6 mil polyethylene sheeting.

Equipment or Material: Take all equipment or material from the work area through the equipment decontamination unit according to the following procedure:

At washdown station, thoroughly wet-clean contaminated equipment or sealed polyethylene bags and pass into wash room.

When passing equipment or containers into the wash room, close all doorways of the equipment decontamination unit, other than the doorway between the washdown station and the wash room. Keep all outside personnel clear of the equipment decontamination unit.

Once inside the washroom, wet-clean the bags and/or equipment.

When cleaning is complete pass items into holding room. Close all doorways except the doorway between the holding room and the clean room.

Workers from the building exterior enter holding area and remove decontaminated equipment and/or containers for disposal.

Require these workers to wear full protective clothing and appropriate respiratory protection.

At no time is a worker from an uncontaminated area to enter the containment when a removal worker is inside.

3.04 CLEANING OF DECONTAMINATION UNITS:

Clean debris and residue from inside of decontamination units on a daily basis or as otherwise indicated on contract drawings. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.

If the changing room of the personnel decontamination unit becomes contaminated with asbestos-containing debris, abandon the entire decontamination unit and erect a new decontamination unit. Use the former changing room as an inner section of the new equipment room.

3.05 SIGNS:

Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the work area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

LEGEND

Danger

Asbestos

Cancer and Lung Disease Hazard

Authorized Personnel Only

Respirators and Protective Clothing are Required in this Area

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

Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each work area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

<u>LEGEND</u>	<u>NOTATION</u>
No Food, Beverages or Tobacco Permitted	3/4" Block
All Persons Shall Don Protective Clothing (Coverings) Before Entering the Work Area	3/4" Block
All Persons Shall Shower Immediately After Leaving Work Area and Before Entering the Changing Area	3/4" Block

- END OF SECTION -

SECTION 01913

PROJECT CLOSEOUT

PART 1- GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS:

Definitions: Project closeout is the term used to describe certain collective project requirements indicating completion of the work that are to be fulfilled near the end of the contract time in preparation for final acceptance and occupancy of the work by the Owner, as well as final payment to the contractor and the normal termination of the contract.

Specific requirements for individual units of work are included in the appropriate sections in Division 1.

Time of closeout is directly related to "Substantial Completion", therefore, the time of closeout may be either single time period for the entire work or a series of time periods for individual elements of the work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this section.

1.03 SUBSTANTIAL COMPLETION:

Inspection Procedures: Upon receipt of Contractor's request for inspection, the Owner's Representative will either proceed with inspection or advise Contractor of unfulfilled prerequisites.

Following initial inspection, Owner's Representative will either prepare the certificate of substantial completion, or will advise Contractor of work which must be performed before the certificate will be issued. The Owner's Representative will repeat the inspection when requested and when assured that the work has been substantially completed.

Results of the completed inspection will form the initial "punch-list" for final acceptance.

1.04 PREREQUISITES TO FINAL ACCEPTANCE:

General: Complete the following before requesting the Owner's Representative's final inspection for clearance of final acceptance, and final payment as required by the general conditions. List known exceptions, if any, in request:

Submit the payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

Submit an updated final statement accounting for final additional changes to the contract sum.

Submit a certified copy of the Owner's Representatives final punch-list of itemized work to be completed or corrected stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Owner's Representative and Owner.

Submit evidence of final continuing insurance coverage complying with insurance requirements.

Reinspection Procedure: The Owner's Representative will reinspect the work upon receipt of the Contractor's notice that the work, including punch-list items resulting from earlier inspections, has been completed except for these items whose completion has been delayed because of circumstances that are acceptable to the Owner's Representative.

Upon completion of reinspection, the Owner's Representative will either prepare a certificate of final acceptance or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

If necessary, the reinspection procedure will be repeated.

1.05 RECORD DOCUMENT SUBMITTALS:

General: Specific requirements for record documents are indicated in the individual sections of these specifications. Other requirements are indicated in the general conditions. General submittal requirements are indicated in "submittals" sections.

Do not use record documents for construction purposes. Protect from deterioration and loss in a secure fire-resistive location. Provide access to record documents for the Architect/Engineer's reference during normal working hours.

Note related change-order number where applicable.

Record Specifications: Maintain one complete copy of the project manual, including specifications and addenda, and one copy of other written construction documents such as change orders and similar modifications issued in printed form during construction. Mark these documents to show substantial variations in the actual work performed in comparison with the text of the specifications and modifications as issued. Give particular attention to substitutions, selection of options and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data where applicable.

Upon completion of the work, submit record specifications to the Owner's Representative for the Owner's records.

Record Sample Submittal: Immediately prior to date or dates of substantial completion, the Contractor will meet at the site with the Owner's Representative and the Owner's Personnel, if desired, to determine which, if any, of the submitted samples that have been maintained by the Contractor during progress of the work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's sample storage space.

Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with the actual performance of the work. Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 FINAL CLEANING:

General: Special cleaning requirements for specific units of work are included in the appropriate sections of Division 1. General cleaning during the regular progress of the work is required by the General Conditions and is included under section "Temporary Facilities".

Removal of Protection: Except as otherwise indicated or requested by the Owner's Representative remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

Compliance's: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these to the Owner's best advantage as directed.

- END OF SECTION -

SECTION 01914

PROJECT DECONTAMINATION

PART 1-GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS:

General: This section applies to areas where all ACM is to be abated using full containments. Since the asbestos to be removed is friable and the other materials may become friable, the work is a four step procedure with two cleanings of the primary plastic barrier prior to its removal and two cleanings of the room surfaces to remove any new or existing contamination. In both cases operation of the negative pressure system is used to remove airborne fibers generated by the abatement work.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

Removal of gross debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:

Section 01916 - Removal of Asbestos Containing Materials

Work area clearance: Air testing and other requirements which must be met before release of Contractor and reoccupancy of the work area are specified in Section 01915.

PART 2-PRODUCTS (Not Applicable)

PART 3-EXECUTION

3.01 GENERAL:

Work of this section: Includes the decontamination of air in the work area which has been, or may have been contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos containing materials in the space.

Work of this section: Includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:

Primary and Critical barriers erected by work of Section 01909.
Decontamination unit erected by work of Section 01912.
Negative pressure system installed by work of Section 01908.

Work of this section: Includes the cleaning, and decontamination of all surfaces (ceiling, walls, floor) of the work area and all furniture or equipment in the work area.

3.02 Start of Work:

Previous Work: During completion of the asbestos abatement work specified in other sections, the secondary barrier of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.

Start of work: Work of this section begins with the cleaning of the primary barrier. At start of work the following will be in place:

Primary barrier, two layers of polyethylene sheeting on walls.

Decontamination units for personnel and equipment in operating condition.

Negative pressure system in operation.

3.03 FIRST CLEANING:

First Cleaning: Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Absolute (HEPA) filtered vacuum. (Note: A HEPA vacuum will fail if used with wet material). Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

Remove all filters in the pressure handling system and dispose of them as asbestos containing waste in accordance with the requirements of Section 01917.

3.04 SECOND CLEANING:

Carry out a second cleaning of all surfaces in the work area in the same manner as the first cleaning.

Immediately following the second cleaning of the primary plastic, remove the primary barrier sheets and material decontamination unit, if there is one, leaving only:

Critical barrier: Which forms the sole barrier between the work area and other portions of the building.

Critical barrier sheeting: Over lights, ventilation openings, doorways, and other openings.

Decontamination unit: For personnel in operating condition.

Negative pressure system: Maintain in operating condition.

3.05 THIRD CLEANING:

Carry out a third cleaning of all surfaces in the work area in the same manner as the previous. At the completion of this cleaning, sweep the entire work area with exhaust from forced-air equipment (leaf blower). Do not direct forced-air equipment at any seal in any critical barrier. If any debris or dust is found, repeat the cleaning. Continue this process until no debris or dust is found while sweeping of all surfaces with the forced-air equipment.

3.06 FINAL CLEANING:

Final Cleaning: If dust is apparent, carry out a final cleaning of all surfaces in the work area in the same manner as the previous cleaning.

3.07 VISUAL INSPECTION:

After Final Cleaning, the Owner's Representative, a Texas State licensed Asbestos Consultant or his designated representative, along with the Owner, shall perform a complete visual inspection of the entire work area including: decontamination unit, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. If any such debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the verification, by the Owner's Representative.

The visual inspection shall be conducted in accordance with ASTM E1368 as a minimum.

Wait 24 Hours to allow negative pressure machines to clean air of airborne asbestos fibers prior to final air sampling. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain negative pressure system in operation for the entire 24 hour period. The 24 hour time period may be waived as long as the contractor can verify to the Owner's Representative that a minimum of 96 air changes has been achieved after the visual inspection has been conducted and approved but prior to the collection of the final clearance samples.

3.08 FINAL AIR SAMPLING:

After the work area is found to be visually clean, air samples will be taken and analyzed in accordance with the procedure for Transmission Electron Microscopy as specified in Section 01901 and 01915.

If release criteria is not met, repeat final cleaning and continue decontamination procedure from that point.

If more than one final clearance inspections and samplings are required, the Contractor will bear the cost of analysis and time involved.

If release criteria is met, encapsulate the work area and wait until the encapsulant is fully dry prior to removing the critical barriers separating the work area from the rest of the building and shut down and remove the negative pressure system. ***The Owner's Representative, a Texas State licensed Asbestos Consultant or his designated representative, along with the Owner, shall perform a final visual inspection of the work area once the above has been completed.***

3.09 COMPLETION OF ABATEMENT WORK:

Seal negative air machines with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area.

Asbestos abatement work is complete upon meeting the work area clearance criteria and fulfilling the following:

Remove all equipment, materials, debris from the work site.

Dispose of all asbestos containing waste material which includes all poly used for the containment as specified in Section 01917.

Asbestos abatement work is substantially complete upon meeting the requirements of this section and section 01915, including submission of:

Certificate of Visual Inspection.

Receipts documenting proper disposal as required by Section 01917.

3.10 VERIFICATION OF VISUAL INSPECTION:

Following this section is a "Verification of Visual Inspection". This document is to be completed by the Contractor and verified by the Owner's Representative. Submit completed document with application for final payment. Final payment will not be made until this verification is executed.

- END OF SECTION -

VERIFICATION OF VISUAL INSPECTION

In accordance with Section 01914 "Project Decontamination" the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Name of Abatement Contractor) _____

OWNER REPRESENTATIVE VERIFICATION

The Owner Representative, a Texas State licensed Asbestos Consultant or his designated representative, hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Company Affiliation) _____

VERIFICATION OF FINAL VISUAL INSPECTION

In accordance with Section 01914 "Project Decontamination" and the Texas Asbestos Health Protection Rules, Section 295.58 (3)(C), the Contractor hereby certifies that he has visually inspected the work area after the containment and all other materials have been removed from the site (all surfaces including pipes, beams, ledges, walls, ceiling and floor, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Name of Abatement Contractor) _____

OWNER REPRESENTATIVE VERIFICATION

In accordance with Section 01914 "Project Decontamination" and the Texas Asbestos Health Protection Rules, Section 295.58 (3)(C), the Owner Representative, a Texas State licensed Asbestos Consultant or his designated representative, hereby certifies that he has visually inspected the work area after the containment and all other materials have been removed from the site (all surfaces including pipes, beams, ledges, walls, ceiling and floor, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Company Affiliation) _____

SECTION 01915

WORK AREA CLEARANCE (PCM)

PART 1 - GENERAL: CLEARANCE AIR SAMPLES WILL BE COLLECTED AND THE SAMPLES FROM THE WORK AREAS WILL BE ANALYZED USING PCM METHOD.

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division - 1 Specification sections, apply to work of this section.

1.02 CONTRACTOR RELEASE CRITERIA:

The work is complete when the work area is visually clean and airborne fiber levels have been reduced to the level specified below.

1.03 AIR MONITORING:

To determine if the elevated airborne fiber counts encountered during demolition operations have been reduced to the specified level, the Owner's Representative will secure samples and analyze them according to the following procedures.

Fibers Counted: "Fibers" referred to in this section shall be as defined in NIOSH Method 7400, Issue 2.

1.04 SAMPLING:

The type of sample to be collected will be determined by the CIH retained by the Owner. In the case of aggressive air sampling, the sampling techniques are as follows:

There are not standards available for flow rate of leaf blowers or large fans. However this information is not critical to the success of the procedure.

Before sampling pumps are started the exhaust from forced air equipment (leaf blower with at least 1 horsepower electric motor) will be swept against the abated area and all surfaces. This procedure will be continued for five (5) minutes per 10,000 cubic feet of room volume.

1.05 SCHEDULE OF AIR SAMPLES:

GENERAL: The number and volume of air samples taken and analytical methods used by the Owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used.

Visual Inspection: Required as a prerequisite of air testing, is set forth in section 01914.

Air Monitoring: Performed by the Owner during abatement work, is described in section 01906.

If results of the first set of air samples show that the Contractor has not achieved clearance level, it is the Contractor's responsibility to perform the additional work required for clearance. In addition, the Contractor will be responsible for all costs involved with any additional air sampling to be performed (cost of analysis and collection).

PHASE CONTRAST MICROSCOPY (PCM):

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME (LITERS)	FLOW RATE LPM
Inside Affected Functional Space	5 (minimum)	Mixed Cellulose Ester 0.80 Micron	0.01	1500	2-10

Analysis: Fibers on each filter will be measured using PCM procedures in accordance with NIOSH 7400, Issue 2.

Release Criteria: Decontamination of the work site is complete when every work area sample is below or equal to 0.01 f/cc of air sampled or the baseline whichever is higher.

Phase Contrast Microscopy: The services of a testing laboratory will be employed by the Owner to perform laboratory analysis of the air samples. A microscope and technician will be set up on site so that verbal results can be obtained immediately. If site conditions dictate that the testing laboratory cannot set up on site, verbal results shall be relayed to the Owner as well as the contractor within four hours of the collection of the clearance samples. A complete record certified by the testing laboratory of all air monitoring tests and results will be furnished to the Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01915

WORK AREA CLEARANCE (TEM)

PART 1 - GENERAL: CLEARANCE AIR SAMPLES WILL BE COLLECTED AND THE SAMPLES FROM THE WORK AREAS WILL BE ANALYZED USING TEM METHOD.

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division - 1 Specification sections, apply to work of this section.

1.02 CONTRACTOR RELEASE CRITERIA:

The work is complete when the work area is visually clean and airborne fiber levels have been reduced to the level specified below.

1.03 AIR MONITORING:

To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the Owner's Representative will secure samples and analyze them according to the following procedures.

Fibers counted: "Fibers" referred to in this section shall be as defined in NIOSH Method 7402 or the AHERA Method.

1.04 SAMPLING:

Aggressive air samples will be collected for final air clearance of this project. Aggressive air sampling techniques are as follows:

Before sampling pumps are started, the exhaust from forced air equipment (leaf blower with at least 1 horsepower electric motor) will be swept against the abated area and all surfaces including walls, floors, ceilings and ledges. This procedure will be continued for five (5) minutes per 10,000 cubic feet of room volume.

One 20 inch diameter fan per 10,000 cubic feet of room volume will be mounted in a central location at approximately 6 feet 6 inches above floor, directed toward the ceiling and operated at low speed for the entire period of sample collection. (Consider ceiling height when determining fan size and placement)

Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors or vents.

After air sampling pumps have been shut off, the fans will be shut off.

1.05 SCHEDULE OF AIR SAMPLES:

GENERAL: The number and volume of air samples taken and analytical methods used by the owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used.

Visual Inspection: Required as a prerequisite of air testing, is set forth in section 01914.

Air monitoring: Performed by the Owner during abatement work, is described in section 01906.

If results of the first set of air samples show that the Contractor has not achieved clearance level, it is the Contractor's responsibility to perform the additional work required for clearance. In addition, the Contractor will be responsible for all costs involved with any additional air sampling to be performed (cost of analysis and collection).

TRANSMISSION ELECTRON MICROSCOPY (TEM):

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER* MEDIA	ANALYTICAL SENSITIVITY (STRUCTURES/CC)	MINIMUM VOLUME (LITERS)	FLOW RATE LPM
Inside Affected Functional Space	5 (minimum)	Mixed Cellulose Ester .45 Micron	< 0.005	1500	2 - 10
At Job Site (Blank)	2 (minimum)	Mixed Cellulose Ester .45 Micron	< 0.005		
At Laboratory (Blank)		Mixed Cellulose Ester .45 Micron	< 0.005		

*All sample cassettes will be 25 mm, 0.45 micrometer MCE with 5.0 micrometer backing filter.

LABORATORY ANALYSIS SEQUENCE FOR TEM SAMPLES

1. Collect samples at abatement site
 - 5 inside samples and job site blanks
2. Send samples to lab.
3. Laboratory prepares all samples, including blanks, for analysis.
4. Laboratory analyzes all 5 inside samples and blanks to < 0.005st/cc analytical sensitivity. *
5. If all inside samples are $\leq 70\text{st/mm}^2$ then pass clearance.
If any inside sample is $> 70\text{st/mm}^2$ then reclean as described in Section 01914 and resample.

*If arithmetic mean (average) asbestos concentration on the blank filters exceed 70 structures per square millimeter of filter area, the analysis will cease and new samples shall be collected.

1.06 LABORATORY TESTING:

The services of an independent laboratory will be employed to perform TEM laboratory analysis of the air samples. The TEM laboratory shall be NVLAP accredited and licensed in the State of Texas. The Owner will select the TEM laboratory. The C.I.H. representative will be at the job site and TEM samples will be sent overnight to the laboratory so that verbal reports on air samples can be obtained within 24 hours, or as required, after receipt by laboratory.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01916

REMOVAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and Division-1 Specification sections, apply to work of this section.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

Installation of critical and primary barriers, and work area isolation procedures if used by the Contractor, are set forth in Sections 01908 and 01909.

Project decontamination procedures after removal of the secondary barrier are specified in Section 01914.

Disposal of asbestos-containing waste is specified in Section 01917.

1.03 SUBMITTALS:

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

Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.

Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.

NESHAPS Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet asbestos containing materials to which it is applied as required by the National Emission Standard for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).

Material Safety Data Sheet: Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant and encapsulating material proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

PART 2 - PRODUCTS:

Wetting Materials: For wetting prior to disturbance of asbestos-containing materials use either amended water or a removal encapsulant:

Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of asbestos containing material. Use a material which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick as indicated, clear, frosted, or black as indicated.

Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to aggressively stick to sheet polyethylene.

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

Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled with three labels with text as follows:

First Label:

CAUTION
CONTAINS ASBESTOS FIBERS
AVOID OPENING OR BREAKING CONTAINER
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

Second Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR
ACTINOLITE FIBERS IS HAZARDOUS TO YOUR HEALTH

Third Label: Provide in accordance with U.S. Department of Transportation Regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances: Final Rule:

RQ HAZARDOUS
SUBSTANCE,
CLASS 9,
NA2212, PG III
(ASBESTOS)

PART 3 - EXECUTION

3.01 SECONDARY BARRIER:

Install as a drop cloth a clear 6 mil thick sheet plastic in all areas where asbestos removal will be carried out. Completely cover the floor with sheet plastic. Install secondary barrier at the beginning of each shift. The secondary barrier shall be removed at the end of each shift or as work in an area is complete. The plastic shall be folded toward the center of sheet and packed in disposal bags. All material on the sheet shall be kept wet until bagged.

3.02 WORKER PROTECTION:

Before beginning work with any material for which a material safety data sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.03 WET REMOVAL:

Provisions for the removal of ACM not mentioned below will be specified in Section 01901 – Summary of work and Special Specifications

Thoroughly wet to satisfaction of Owner's Representative asbestos-containing materials to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions. Perforate outer covering of any insulation which has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the insulation to minimize dispersal of asbestos fibers into the air.

Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.

Remove saturated asbestos-containing materials in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to washdown station adjacent to material decontamination unit.

Remove the textured gypboard as indicated on the drawings with the texturizer adhered to it. All nails or screws used for the installation of the gypboard shall be removed and disposed of as ACM.

Removal of Sheet Flooring, Floor Tile and Mastic

All floor tile and sheet flooring shall be removed using manual methods. Chemical solvents can be used for the removal of the mastic as long as the solvent has a flash point above 141 degrees Fahrenheit and the manufacturer's recommendations are strictly followed. The Owner's representative shall review and approve the contractors proposed work plan for using chemical solvents.

Removal of Window Glazing

All window glazing shall be removed using wet methods. A drop cloth consisting of six mil thick sheet plastic shall be used for a drop cloth below the windows while the glazing is being removed from the exterior of the buildings. All debris collected on the drop cloth shall be kept wet and promptly bagged for disposal. The drop cloth shall be disposed of as ACM at the end of each work shift. Prior to removing the glazing, it shall be encapsulated with a removal encapsulant. The contractor shall erect a visual barrier at each window during the removal of exterior window glazing.

Removal of Ceiling Acoustics and Ceiling Tiles

The ceiling acoustics and tiles shall be saturated with amended water prior to the removal. All debris shall be promptly bagged for disposal as it is being removed and not allowed to remain on the containment floor where it could dry out. The drop cloth placed on the floor of the containment shall be disposed of as ACM at the end of the day. After the ceiling acoustics have been removed from the ceiling, the contractor shall clean the substrate of all debris by wire brushing the ceiling with a stiff nylon bristled hand brush..

Removal of Vibration Dampers

The vibration dampers shall be removed intact by removing the damper and its mounting frame in one unit. Disassemble the ductwork as needed to remove the frame. Wrap the frame and damper in two layers of true six-mil thick sheet plastic and dispose of the assembly as ACM. If ductwork must be cut in order to remove the vibration damper, cover the damper with two layers of true six mil thick sheet plastic then cut away the ductwork on both sides of the damper and remove the ductwork section with the damper in place. This entire assembly shall be wrapped in two layers of true six-mil thick sheet plastic and disposed of as ACM.

Removal of Roofing Materials

The contractor is required to remove and dispose of as ACM the roofing materials using procedures outlined in 40 CFR, PART 61, Appendix A to Subpart M of NESHAP. The contractor shall install a drop cloth consisting of six mil thick sheet plastic on the ground in order to collect any debris which may fall from the roof. All debris collected on the drop cloth shall be kept wet and promptly bagged for disposal. Work area samples collected during the removal of the roofing materials can be used for clearance purposes as long as all work area samples collected are equal to or less than 0.01 fibers per cubic centimeter (f/cc) of air sampled when analyzed using Phase Contrast Microscopy (PCM). If any work area sample exceeds 0.01 f/cc, additional clearance samples shall be collected and analyzed by PCM. The Owner's Representative shall determine the number and location of the additional clearance samples.

Removal of Asbestos Cement Panels/Siding (Transite)

Prior to removing the nails or screws which are used to support the transite, the materials shall be wet using a removal encapsulant. The transite shall be removed intact if possible with a minimal amount of breakage. A drop cloth consisting of six mil thick sheet plastic shall be placed in the work area directly below the transite that is to be removed. All debris collected on the drop cloth shall be kept wet and promptly bagged for disposal. The drop cloth shall be disposed of as ACM at the end of each work day. The transite shall be misted with a removal encapsulant throughout the removal process.

GLOVEBAG PROCEDURES:

NOTE: Glove bag procedures shall be used during the removal of all pipe insulation inside a negative pressure containment.

1. After determining the area of the pipe the glove bag will enclose, wrap a minimum of 3 inch width section with duct tape for both ends of the glove bag that will attach to the pipe.
2. Cut sides of bag to fit around pipe.
3. A HEPA FILTER, taped inside the bag over an opening cut into the bag, must be used to enable make-up air to enter the bag without allowing it to leave.
4. Put all tools in tool pouch.
5. Attach glove bag to work site. Use double-sided tape to hold flaps together smoothly and without wrinkles or air pockets. Staple entire length ensuring a good seal across the top. Leave enough slack at the top of the bag to work fully around the pipe without stretching the bag or seals.
6. Seal edges of the glove bag around the pipe to make an airtight seal. Use duct tape or a reusable strap. Smoke test the glove bag at this time to check for leaks.
7. Make a small slice in the bag to allow the tip of the sprayer nozzle to be inserted into the bag to spray amended water. Also, this opening may be used to insert the HEPA vacuum attachment. Each time the hole is used, reseal it immediately with duct tape.
8. Thoroughly wet the work site inside the bag with amended water. Do not fill the bag with excess water which could cause the bag to fall or tear.
9. Place arms in armholes and gloves. Carefully remove the asbestos from the pipe wetting the material as required during removal. One worker shall accomplish removal while a second simultaneously wets the material.
10. Use a damp rag, previously placed in the tool pouch, to wipe exposed pipe clean of **ALL** visible foreign material.
11. Thoroughly wet all reusable tools with the water pump and place in the tool pouch for later recovery. Wash down the sides of the bag so all visible debris collects at the bottom of the bag.
12. Using a HEPA filtered vacuum unit, negative pressure shall be created within the negative air bag prior to any abatement work and must be maintained throughout the use of the bag.
13. Place HEPA vacuum attachment at the opening of the bag, suck air out of the bag for several seconds. **DO NOT SUCK WATER INTO THE VACUUM.**
14. Squeeze the bag tightly below the tool pouch if tools are to be recovered and tape or tie off the "neck" with duct tape or a plastic tie.

15. Clean all visible debris off tools, grasp the tools in one gloved hand, pull inside out, twist, and seal with duct tape. Cut and place sealed glove with tools into a bucket of water for recovery and further cleaning. Cut glove bag across the top, pull off the duct tape at the sides, and place in an asbestos disposal bag.
16. Use encapsulant to spray newly exposed pipe.
17. When finished with an area of all glove bag work, thoroughly vacuum the work site surfaces.
18. All disposable items used on the project will then be placed in a separate disposal bag.

3.04 AIRBORNE FIBER COUNTS:

General: Use work procedures that result in an 8 hour Time Weighted Average (TWA) airborne fiber count less than that indicated in Section 01906 of these specifications on "Air Monitoring - Test Laboratory Services". If airborne fiber counts exceed this level immediately mist the area with amended water to lower fiber counts and revise work procedures to maintain airborne fiber levels within the required limit.

- END OF SECTION -

SECTION 01917

DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and Division-1 Specification sections, apply to work of this section.

1.02 DISPOSAL:

Friable asbestos-containing waste material and debris that is packaged in accordance with the provision of this specification may be disposed of at designated sanitary landfills when certain precautions are taken.

Notice to appropriate Environmental Protection Agency regional office.

Notice and permit from appropriate State and/or local Agencies.

See Section 01904 for agency locations and code.

Dispose of non-friable asbestos containing material in accordance with applicable regulations.

1.03 SUBMITTALS:

Submit copies of all manifest, including DOT shipping receipts, and landfill site receipts to Owner's Representative within 15 calendar days of project completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 GENERAL:

Carefully load containerized waste on sealed trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.

Do not store disposal bagged material outside of the work area. Take bags from the work area directly to a sealed truck or dumpster. Label containers or bags with the name of the waste generator and the location at which the waste was generated.

Do not transport disposal bagged material on open trucks. The interior of the vehicle where bags are being transported shall be lined with 6 mil thick polyethylene. Double bagged material may be transported on open trucks if they are first loaded in sealed drums. Label drums with the same warning label as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with the specification.

Advise the sanitary landfill operator at least twenty-four hours in advance of transport of the quantity of material to be delivered.

At the burial site, sealed plastic bags shall be carefully removed from the truck. If bags are broken or damaged in transit, leave in the truck and clean entire truck and contents using procedures set forth in Section 01914 Project Decontamination.

Retain receipts from landfill for material disposed of.

Final payment may be withheld by the Owner until all the properly executed manifests have been submitted to the Owner's Representative.

- END OF SECTION -

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT _____ DATE _____

PROJECT ADDRESS _____

SUBCONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification you are assuring the owner that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Negative pressure systems
- Work practices including hands on or on-job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

Signature _____

Printed Name _____

Social Security Number _____

Witness _____

INDEX OF SUBMITTALS

1. PRIOR TO BEGINNING WORK: Submit these in three (3) copies at least five (5) week days before work is scheduled to start. Each submittal must be approved in writing by Owner's Representative before work may begin.
 - A. Plan of Action.
 - B. Contingency Plan.
 - C. Department of State Health Services Notice to Abate.
 - D. Permits, License, Certificates.
 - E. Asbestos Contractors Texas License.
 - F. Texas License for Project Supervisor.
 - G. Texas License for each asbestos worker.
 - H. Current signed physician's opinion and supporting results of medical examinations.
 - I. Certificate of Worker's Acknowledgement.
 - J. Project Work Schedule.
 - K. Historic Airborne Fiber Data/Negative Initial Exposure Assessment (Specified in Section 01911, 1.04).
 - L. Current training certificate for each worker and supervisor (Training shall remain current throughout the course of the project).
 - M. Notices of violation or agreed orders originated by the Texas Department of Health.
2. DURING THE COURSE OF ABATEMENT: These items will be submitted as available or required during the work period.
 - A. Daily containment sign in sheets - submit at the end of each shift.
 - B. Copies of the recorded negative pressure readings on 8-1/2 x 11 sheets of paper - submit daily to the Owner's Consultant.
 - C. Any request for change orders - submit as needed.
 - D. Report of any accident or injury - within 24 hours of occurrence.
 - E. Any breach of controlled area - within 2 hours of identification of breach.
 - F. Any incident affecting the ability of the Contractor to complete the project on time - within 12 hours of incident.
 - G. Visit of any official or representative of the media or regulatory agency - within 1 day of visit.

H. Addition of any new asbestos worker - prior to the worker reporting for work inside the containment.

3. POST ABATEMENT:

A. Copies of daily containment sign-in sheets not previously provided within three working days of project close-out.

B. Copy of the pressure monitoring strip chart not previously provided within three working days of project close-out.

C. Copy of all Disposal Waste Manifests - within 10 calendar days of project close-out.

CERTIFICADO DE CONOCIMIENTO DEL TRABAJADOR:
(CERTIFICATE OF WORKER'S ACKNOWLEDGMENT: Spanish Version)

NOMBRE DEL PROYECTO _____ FECHA _____

DOMICILIO DEL PROYECTO _____

NOMBRE DEL CONTRACTISTA _____

TRABAJAR CON ASBESTOS PUEDE SER PELIGROSO. EL RESPIRAR FIBRAS DE ASBESTOS A SIDO ASOCIADO CON VARIOS TIPOS DE CANCER. SI TU FUMAS Y RESPIRAS FIBRAS DE ASBESTOS, LAS POSIBILIDADES DE DESARROLLAR CANCER EN LOS PULMONES SON MAYORES QUE EN LAS PERSONAS QUE NO FUMAN.

El contrato de trabajo de tu patron con el dueño de este proyecto requiere que: se te debe proporcionar un respirador apropiado y se te enseñe como usarlo. Tu debes ser entrenado para trabajar con medidas de seguridad y se te enseñe a usar el equipo y herramienta que se requiere para trabajar. Que seas examinado por un medico. Estas cosas deben ser hechas sin costo alguno para ti. Al firmar este certificado tu estas asegurando al dueño del proyecto que tus patrones ya cumplieron con estas obligaciones (de proporcionarte equipo adecuado, entrenarte en practicas de seguridad y pasar por un chequeo medico). Por lo que se esta de acuerdo en mantener al dueño del proyecto, sus consejeros, laboratorio de analisis y sus representantes fuera de responsabilidad en todas y cada una de las quejas que puedan resultar de, o relacionadas con este proyecto.

PROTECCION RESPIRATORIA: Yo he sido entrenado en el use apropiado de respiradores, y he sido informado del tipo de respirador que debe ser usado en este proyecto. Yo tengo una copia escrita del manual de proteccion respiratoria proporcionado por mis patrones. Yo he sido equipado sin costo alguno para me con el respirador que debe ser usado en este proyecto.

CURSO DE ENTRENAMIENTO: Yo he sido entrenado en los peligros relacionados con el manejo de asbestos y con el respirar polvo de asbestos y he sido entrenado en los procedimientos de trabajo adecuados y medidas de proteccion personales en el area de trabajo. Los temas vistos en el curso incluyen los siguientes:

- Caracteristicas fisicas de asbestos
- Peligros de salud asociado con asbestos
- Uso de equipo de proteccion
- Sistemas de aire negativos
- Practicas de trabajo mientras se trabaja o se entrena
- Procedimientos de descontaminacion personal
- Muestreo del aire, personal y del area

EXAMEN MEDICO: Yo he sido examinado dentro de lost ultimos 12 meses el cual fue pagado por mis patrones. Esta examinacion incluye: historia de salud, pruebas de funcion pulmonares y podria tener incluida una evaluacion de rayos x del torax.

Firma: _____

Nombre Escrito: _____

Numero Del Seguro Social: _____

Testigo: _____

VERIFICATION OF VISUAL INSPECTION

In accordance with Section 01914 "Project Decontamination" the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Name of Abatement Contractor) _____

OWNER REPRESENTATIVE VERIFICATION

The Owner Representative, a Texas State licensed Asbestos Consultant or his designated representative, hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Company Affiliation) _____

VERIFICATION OF FINAL VISUAL INSPECTION

In accordance with Section 01914 "Project Decontamination" and the Texas Asbestos Health Protection Rules, Section 295.58 (3)(C), the Contractor hereby certifies that he has visually inspected the work area after the containment and all other materials have been removed from the site (all surfaces including pipes, beams, ledges, walls, ceiling and floor, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Name of Abatement Contractor) _____

OWNER REPRESENTATIVE VERIFICATION

In accordance with Section 01914 "Project Decontamination" and the Texas Asbestos Health Protection Rules, Section 295.58 (3)(C), the Owner Representative, a Texas State licensed Asbestos Consultant or his designated representative, hereby certifies that he has visually inspected the work area after the containment and all other materials have been removed from the site (all surfaces including pipes, beams, ledges, walls, ceiling and floor, etc.) and has found no dust, debris or residue.

BY: (Signature) _____ (Date) _____

(Print Name) _____

(Print Title) _____

(Print Project Name) _____

(Print Company Affiliation) _____

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER:
RFP DKC0040**

1. **PROPOSAL FORMAT**

Prefacing the proposal, the Proposer shall provide an Executive Summary of three (3) pages or less, which gives in brief, concise terms, a summation of the proposal. The proposal itself shall be organized in the following format and informational sequence:

- A. **Part I - Business Organization**: State full name and address of your organization and identify parent company if you are a subsidiary. Specify the branch office or other subordinate element which will perform, or assist in performing, work herein. Indicate whether you operate as a partnership, corporation, or individual. Include the State in which incorporated or licensed to operate.
- B. **Part II - System Concept and Solution**: Define in detail your understanding of the requirement presented in the Scope of Work of this request for proposal and your system solution. Provide all details as required in the Scope of Work and any additional information you deem necessary to evaluate your proposal.
- C. **Part III - Program**: Describe your technical plan for accomplishing required work. Include such time-related displays, graphs, and charts as necessary to show tasks, sub-tasks, milestones, and decision points related to the Scope of Work and your plan for accomplishment. Specifically indicate:
- i. A description of your work program by tasks. Detail the steps you will take in proceeding from Task 1 to the final tasks.
 - ii. The technical factors that will be considered in section above, and the depth to which each will be treated.
 - iii. The degree of definition provided in each technical element of your plan.
 - iv. The points at which written, deliverable reports will be provided.
 - v. The amount of progress payments you are requesting upon successful completion of milestones or tasks, deducting ten percent (10%), which will be paid upon final acceptance by the City.
 - vi. A statement of your compliance with all applicable rules and regulations of Federal, State and Local governing entities. The Proposer must state his compliance with terms of this Request for Proposal (RFP).

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER:
RFP DKC0040**

- D. **Part IV - Project Management Structure:** Provide a general explanation and chart which specifies project leadership and reporting responsibilities; and interface the team with City project management and team personnel. If use of subcontractors is proposed, identify their placement in the primary management structure, and provide internal management description for each subcontractor.
- E. **Part V - Prior Experience:** Describe only relevant corporate experience and individual experience for personnel who will be actively engaged in the project. Do not include corporate experience unless personnel assigned to this project actively participated. Do not include experience prior to 1998. Supply the project title, year, and reference name, title, present address, and phone number of principal person for whom prior projects were accomplished.
- F. **Part VI - Personnel:** Include names and qualifications of all professional personnel who will be assigned to this project. State the primary work assigned to each person and the percentage of time each person will devote to this work. Identify key persons by name and title. Provide all resumes.
- G. **Part VII - Local Business Presence:** The City seeks opportunities for businesses in the Austin Corporate City Limits to participate on City contracts. A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation. Points will be awarded through a combination of the Offeror's Local Business Presence and/or the Local Business Presence of their subcontractors. Evaluation of the Team's Percentage of Local Business Presence will be based on the dollar amount of work as reflected in the Offeror's MBE/WBE Compliance Plan or MBE/WBE Utilization Plan. Specify if and by which definition the Offeror or Subcontractor(s) have a local business presence.
- H. **Part VIII - Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying:**
- i. On November 10, 2011, the Austin City Council adopted Ordinance No. 20111110-052 amending Chapter 2-7, Article 6 of the City Code relating to Anti-Lobbying and Procurement. The policy defined in this Code applies to Solicitations for goods and/or services requiring City Council approval under City Charter Article VII, Section 15 (Purchase Procedures). During the No-Contact Period, Offerors or potential Offerors are prohibited from making a representation to anyone other than the Authorized Contact Person in the Solicitation as the contact for questions and comments regarding the Solicitation.
 - ii. If during the No-Contact Period an Offeror makes a representation to anyone other than the Authorized Contact Person for the Solicitation, the Offeror's Offer is disqualified from further consideration except as permitted in the Ordinance.
 - iii. If a Respondent has been disqualified under this article more than two times in a sixty (60) month period, the Purchasing Officer shall debar the Offeror from doing business with the City for a period not to exceed three (3) years, provided the Respondent is given written notice and a hearing in advance of the debarment.
 - iv. The City requires Offerors submitting Offers on this Solicitation to provide a signed Section 0810, Non-Collusion, Non-Conflict of Interest, and Anti-Lobbying Affidavit certifying that the Offeror has not in any way directly or indirectly made representations to anyone other than the Authorized Contact Person during the No-Contact Period as defined in the Ordinance The text

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER:**

RFP DKC0040

of the City Ordinance is posted on the Internet at:

<http://www.ci.austin.tx.us/edims/document.cfm?id=161145>

- I. **Part IX - Proposal Acceptance Period:** All proposals are valid for a period of one hundred and eighty (180) calendar days subsequent to the RFP closing date unless a longer acceptance period is offered in the proposal
- Jl. **Part X - Proprietary Information:** All material submitted to the City becomes public property and is subject to the Texas Open Records Act upon receipt. If a Proposer does not desire proprietary information in the proposal to be disclosed, each page must be identified and marked proprietary at time of submittal. The City will, to the extent allowed by law, endeavor to protect such information from disclosure. The final decision as to what information must be disclosed, however, lies with the Texas Attorney General. Failure to identify proprietary information will result in all unmarked sections being deemed non-proprietary and available upon public request.
- K. **Part XI - Authorized Negotiator:** Include name, address, and telephone number of person in your organization authorized to negotiate Contract terms and render binding decisions on Contract matters.
- L. **Part XII - Cost Proposal:** Information described in the following subsections is required from each Proposer. Your method of costing may or may not be used but should be described. A firm fixed price or not-to-exceed Contract is contemplated, with progress payments as mutually determined to be appropriate. Ten percent (10%) of the total contractual price will be retained until submission and acceptance of all work products.
- i. Manpower. Itemize to show the following for each category of personnel with separate hourly rates:
- (1) manager, senior consultant, analyst, subcontractor, etc.
 - (2) estimated hours for each category of personnel
 - (3) rate applied for each category of personnel
 - (4) total cost
- ii. Itemize cost of supplies and materials
- iii. Other itemized direct costs
- iv. If applicable, general and administrative burden. Indicate base used, percentage, and total cost relative to this procurement.
- v. Travel expenses. All travel lodging expenses in connection with the Contract for which reimbursement may be claimed by the Contractor under the terms of the Solicitation will be reviewed against the City's Travel Policy as published and maintained by the City's Controller's Office and the Current United States General Services Administration Domestic Per Diem Rates (the "Rates") as published and maintained on the Internet at:

http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentId=17943&contentType=GSA_BASIC

No amounts in excess of the Travel Policy or Rates shall be paid. All invoices must be

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER:**

RFP DKC0040

accompanied by copies of detailed receipts (e.g. hotel bills, airline tickets). No reimbursement will be made for expenses not actually incurred. Airline fares in excess of coach or economy will not be reimbursed. Mileage charges may not exceed the amount permitted as a deduction in any year under the Internal Revenue Code or Regulations.

- vi. Printing. State separately the cost of furnishing copies of the final report (if applicable).
- vii. Total cost schedule.

2. EXCEPTIONS:

Be advised that exceptions to any portion of the Solicitation may jeopardize acceptance of the Proposal.

3. PROPOSAL PREPARATION COSTS:

All costs directly or indirectly related to preparation of a response to the RFP or any oral presentation required to supplement and/or clarify a proposal which may be required by the City shall be the sole responsibility of the Proposer.

4. EVALUATION FACTORS AND AWARD

A. **Competitive Selection:** This procurement will comply with applicable City Policy. The successful Proposer will be selected by the City on a rational basis. Evaluation factors outlined in Paragraph B below shall be applied to all eligible, responsive Proposers in comparing proposals and selecting the Best Offeror. Award of a Contract may be made without discussion with Proposers after proposals are received. Proposals should, therefore, be submitted on the most favorable terms.

B. **Evaluation Factors:**

- i. 100 points.

- (1) System Concept and Solutions Proposed (Grasp of the requirement and its solution(s), responsiveness to terms and conditions, completeness and thoroughness of the technical data and documentation.) **(20 points)**

Each Contractor will be required to provide a work plan to both AE and PW. Outline, in detail, the regulated or contained area, the sequencing of work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site. Include the location and design of the decontamination unit, number of negative air machines, bag-out procedures, disposal plan including location of approved disposal site, etc.

Expand on the use of portable HEPA ventilation system, closing out the area HVAC system. Expand on the method of removal used to prohibit visible emissions in the work area and the packaging and handling of removed asbestos debris.

Describe the type of respiratory protection and other equipment to be used during the project. Provide, if applicable, historic air borne fiber data on similar projects.

All work plans will be reviewed for completeness, detail, and feasibility.

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER:
RFP DKC0040**

- (2) Demonstrated Applicable Asbestos, Lead and Mold -Abatement Project Experience **(20 points)**

Within the past ten years the abatement Contractor must have had work experience in designing, managing and successfully completing abatement projects all areas of asbestos, lead and mold abatement, from small glove bag abatements to large multi-story containment abatements. The Contractor shall demonstrate this experience by providing information on comparable projects in each of the areas listed below.

The experience must be documented and verifiable by providing the name, title, and current phone number of the client's project manager. For AE projects the amount of each abatement project described (with the exception of mold) must exceed \$50,000. For all work experience, please provide a brief synopsis including, description of the facility or building, types and quantities of materials abated, methods of abatement utilized, dollar amount of abatement work, completion dates, any special complications encountered and how they were handled.

Types and Quantity of -Abatement Projects:

AUSTIN ENERGY

- a. Industrial - Submit documentation for two (2) projects for each of the following categories:
- i. Power Plants (LBP and asbestos)
 - ii. Petroleum/Chemical Plants (LBP and asbestos)
 - iii. Mold Remediation work in office spaces

DEPARTMENT OF PUBLIC WORKS (DPW)

- b. Public Access - Submit documentation for four (4) projects for each of the following categories:
- i. O&M and Small Scale Short Duration Projects
 - ii. Asbestos and Lead Abatement Projects in office buildings. (One project must be for an occupied building).
 - iii. Mold Remediation work in office spaces.

- (3) Operational Programs **(15 points)**

(i) A description of your work program by tasks. Detail the steps you

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER:
RFP DKC0040**

will take to respond to a request to attend a pre-bid meeting and your response should you be selected to perform an abatement project. Provide details of pre-submittal documents and post-submittal documents. Provide an example of your project close out package.

- (ii) A detailed description of your employee training program and your Standard Operating Procedures (SOP). Include a copy of the SOP with your proposal clearly labeled with your company name...
- (iii) A detailed description of your Medical Surveillance Program (MSP), including your Respiratory Protection Program (RPP) and fit test methodologies. Include a copy of the MSP and RPP. MSP and RPP shall comply with all applicable state and federal regulations.
- (iv) A detailed description of your safety program. Include a copy of the Safety program.
 - i. A statement of your compliance with all applicable rules and regulations of Federal, State and Local governing entities. The Proposer must state his compliance with terms of this Request for Proposal and a notarized statement of the company history regarding citations, terminations and legal proceedings/claims.

(4) Evidence of Good Organization and Management Practices **(10 points)**

The Contractor shall identify project leadership, reporting responsibilities, how the supervisors will interface with the Consultant's and City's staff and how subcontractors will fit within the work plan and management structure. (A narrative and organizational chart is requested).

(5) Personnel Qualifications **(10 points)**

Include names and qualifications of all professional personnel who will be assigned to this project. State the primary work assigned to each person and the percentage of time each person will devote to this work. Identify key persons by name and title. Provide all resumes, including current licenses and certifications.

Resumes listing individual projects related to asbestos, lead and mold abatement for all supervisors shall be submitted, along with their availability to do the work. A copy of the original training certificate, along with all subsequent refresher certificates, must be furnished for all supervisors.

(6) Total Evaluated Cost **(15 points)**

**CITY OF AUSTIN
PURCHASING OFFICE
PROPOSAL PREPARATION INSTRUCTIONS AND EVALUATION FACTORS
SOLICITATION NUMBER:
RFP DKC0040**

AE & DPW

Contractors will be evaluated on their total costs per the list of bid items related to expected and re-occurring Asbestos, Lead and Mold related work activities.

Each Contractor will submit the cost information required to perform the work on each bid item on Cost Proposal Sheets, Sections 705 for AE and Section 706 for DPW.

(7) Financial viability/stability (PASS/FAIL)

- Audited financial statements for the past two years. In the event that audited financial statements cannot be provided, the Vendor must provide financial information that will enable the City to accurately assess financial stability and viability. Provide the same information for any entity that will participate in this project through a joint venture or subcontract arrangement.

(8) LOCAL BUSINESS (10 points)

Team's Local Business Presence	Points Awarded
Local business presence of 90% to 100%	10
Local business presence of 75% to 89%	8
Local business presence of 50% to 74%	6
Local business presence of 25% to 49%	4
Local presence of between 1 and 24%	2
No local presence	0

- ii. Interviews, Optional. Interviews may be conducted at the discretion of the City. Maximum 25 points

City of Austin
Purchasing Office
Local Business Presence Identification Form

A firm (Offeror or Subcontractor) is considered to have a Local Business Presence if the firm is headquartered in the Austin Corporate City Limits, or has a branch office located in the Austin Corporate City Limits in operation for the last five (5) years. The City defines headquarters as the administrative center where most of the important functions and full responsibility for managing and coordinating the business activities of the firm are located. The City defines branch office as a smaller, remotely located office that is separate from a firm's headquarters that offers the services requested and required under this solicitation.

OFFEROR MUST SUBMIT THE FOLLOWING INFORMATION FOR EACH LOCAL BUSINESS (INCLUDING THE OFFEROR, IF APPLICABLE).

NOTE: ALL FIRMS MUST BE IDENTIFIED ON THE MBE/WBE COMPLIANCE PLAN OR NO GOALS UTILIZATION PLAN, SECTION 0900 OF THE SOLICITATION.

USE ADDITIONAL PAGES AS NECESSARY

OFFEROR:

Name of Local Firm						
Physical Address						
Is Firm located in the Corporate City Limits? (circle one)	Yes			No		
In business at this location for past 5 yrs?	Yes			No		
Location Type:	Headquarters	Yes	No	Branch	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm						
Physical Address						
Is Firm located in the Corporate City Limits? (circle one)	Yes			No		
In business at this location for past 5 yrs?	Yes			No		
Location Type:	Headquarters	Yes	No	Branch	Yes	No

SUBCONTRACTOR(S):

Name of Local Firm						
Physical Address						
Is Firm located in the Corporate City Limits? (circle one)	Yes			No		
In business at this location for past 5 yrs?	Yes			No		
Location Type:	Headquarters	Yes	No	Branch	Yes	No

City of Austin
Purchasing Office
Local Business Presence Identification Form

ACKNOWLEDGEMENT

THE STATE OF TEXAS
COUNTY OF TRAVIS

I certify that my responses and the information provided on **Form 0605** are true and correct to the best of my personal knowledge and belief and that I have made no willful misrepresentations in this Section, nor have I withheld any relevant information in my statements and answers to questions. I am aware that any information given by me in this Section may be investigated and I hereby give my full permission for any such investigation and I fully acknowledge that any misrepresentations or omissions in my responses and information may cause my offer to be rejected.

OFFEROR'S FULL NAME AND ENTITY STATUS:

Signature, Authorized Representative of Offeror

Title

Date

END

COST PROPOSAL SHEET
Austin Energy

Total Bid for abatement of asbestos containing material as identified in Section titled Bid Tabulation Information utilizing abatement procedures as specified in the Master Specification for Abatement of Asbestos and complying with all terms and conditions as stated in the City of Austin Standard Terms and Conditions and Additional Standard Terms and Conditions, is as follows:

Abatement of piping up to 6 in OD (cost per linear foot)	\$ _____
Abatement of piping 6.25 OD to 12 inch OD (cost per linear foot)	\$ _____
Abatement of piping 12.25 OD to 20 inch OD (cost per linear foot)	\$ _____
Abatement of piping 20.25 OD to 28 inch OD (cost per linear foot)	\$ _____
Abatement of Acoustical Plaster (cost per square foot)	\$ _____
Abatement of Lay-in acoustical ceiling tile (cost per square foot)	\$ _____
Abatement of boiler, tank, flue insulation (cost per square foot)	\$ _____
Abatement of duct insulation (cost per square foot)	\$ _____
Abatement of window glazing (cost per linear foot)	\$ _____
Abatement of roofing material (cost per square foot)	\$ _____
Abatement of resilient sheet flooring (cost per square foot)	\$ _____
Abatement of floor tile and mastic (cost per square foot)	\$ _____
Abatement of cement fiber board (cost per square foot)	\$ _____
Abatement of gross debris on floor (cost per square foot)	\$ _____
Additional Mobilization and Demobilization	\$ _____
Additional Scaffolding will be paid at cost plus 8% (original itemized invoice must be submitted to City for review and approval)	

The Contractor shall submit the following information for evaluation of the cost to provide re-insulation services described as follows:

Additional Unit Cost Information: (Insulation shall meet the minimum requirements set forth in the Master Specification)

Insulation of piping up to 6 inch OD (cost per linear foot)	\$ _____
Insulation of piping 6.25 OD to 12 inch OD (cost per linear foot)	\$ _____
Insulation of piping 12.25 OD to 20 inch OD (cost per linear foot)	\$ _____
Insulation of piping 20.25 OD to 28 inch OD (cost per linear foot)	\$ _____
Installation of block insulation, including supports (cost per square foot)	\$ _____
Installation of wire mesh & fiber batt insulation (cost per square foot)	\$ _____
Additional Demobilization and Mobilization costs (re-insulation)	\$ _____

Company Name _____

Authorized Representative _____ Date _____

UNIT PRICES: The **Contractor** herewith submits for additional units of Work that may be identified by the **OWNER** during the course of the Contract, or within sixty (60) days following Final Completion, unit prices complete for removal and disposal of the following items:

Minimum Re-Mobilization charge: \$ _____
(to be applied if Work force is no longer at site)

Chemical Stripping of Lead-based Paint: \$ _____ per sq ft

Mechanical Stripping of Lead-based Paint: \$ _____ per sq ft

Removal of Entire LCM Component: \$ _____ per sq ft

Removal of Entire LCM Component (piping): \$ _____ per ln ft

Removal of Lead Contaminated Soil: \$ _____ per cu yd

Clean up of LCM Gross Debris: \$ _____ per sq ft
(On floor or ground)

Company Name

Authorized Representative _____ Date _____

Unit Prices: Mold Abatement

Removal of Mold Contaminated Building Materials and disposal of wastes, **dry wall construction materials** \$ _____ per sq ft

Company Name

Authorized Representative _____ Date _____

**COST PROPOSAL SHEETS
FOR
DPW**

The undersigned, in compliance with the Invitation for Bids for construction of the following Project:

Asbestos, Lead and Mold Contractor Service Agreement, AE and DPW 2012-2014

The Contractor, having examined the summary of work, the Master Specifications, all Drawings and Addenda, the site of the proposed Work and being familiar with all of the conditions surrounding construction of the proposed Project, having conducted all inquiries, tests and investigations deemed necessary and proper; hereby proposes to furnish all labor, permits, material, machinery, tools, supplies and equipment, and incidentals, and to perform all Work required for construction of the Project in accordance with the Project manual, Master Specifications, all Drawings and Addenda within the time indicated for the following prices of:

Note: The Bidder will enter the line item subtotal in the "Amount" column below, which is the product of the estimated "Quantity" multiplied by the "Unit Price". Any mathematical errors will be corrected for the purpose of determining the correct Amount to be entered in the Bid Form. The Amounts, including any corrected Amounts, will then be totaled to determine the actual amount of the Bid.

Bid Item	Quantity	Unit	Item Description	Unit Price	Amount
01916-FT	25,000	SF	Removal and disposal of asbestos containing floor tile, sheet flooring and mastic (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01901 through 01917	\$_____	\$_____
01916-R	10,000	SF	Removal and disposal of asbestos containing roofing and mastic , (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01901 through 01917	\$_____	\$_____

01916-TB 10,000 SF Removal and disposal of asbestos containing **Transite board**, (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01901 through 01917 \$_____ \$_____

01916-ACP 5,000 LF Removal and disposal of asbestos containing **Cement Pipe**, (minimum quantity to be used per assignment will be 500 linear feet) per Specifications series 01901 through 01917 \$_____ \$_____

01916-GB 40,000 SF Removal and disposal of asbestos containing **textured gypboard walls** (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01901 through 01917 \$_____ \$_____

01916-S 100 each Removal and disposal of **sinks** with asbestos containing coating per Specifications series 01901 through 01917 \$_____ \$_____

01916-WG 350 LF Removal and disposal of asbestos containing **window glazing** (minimum quantity to be used per assignment will be 25 L F) per Specifications series 01901 through 01917 \$_____ \$_____

01916-CT 30,000 SF Removal and disposal of asbestos containing **textured gypboard ceilings** (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01901 through 01917 \$_____ \$_____

01948-CR 10,000 LF Chemical Removal of Lead Containing Paint and disposal of wastes, **on pipes and/or railings** (minimum quantity to be used per assignment will be 1500 LF) per Specifications series 01920 through 01948 \$_____ \$_____

01949-CW 10,000 SF Mechanical Removal of Lead Containing Paint and disposal of wastes, **on CMU walls** (minimum quantity to be used per assignment will be 1500 SF) per Specifications \$_____ \$_____

series 01920 through 01949

01936-CRa 25,000 SF Component Removal and disposal/recycling of wastes, **involving painted wood, gypsum wallboard, metal and transite** (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01920 through 01939 \$_____ \$_____

01936-CRb 50 EA **Large** sized Component Removal and disposal/recycling of wastes, **involving intact mechanical equipment** greater than 4 feet high per Specifications series 01920 through 01939 \$_____ \$_____

01936-CRc 50 EA **Medium** sized Component Removal and disposal/recycling of wastes, **involving intact mechanical equipment** less than 4 feet high but larger than 2 feet high per Specifications series 01920 through 01939 \$_____ \$_____

01936-CRd 50 EA **Small** sized Component Removal and disposal/recycling of wastes, **involving intact mechanical equipment** less than 2 feet high per \$_____ \$_____

Specifications series 01920 through 01939

01950-SP 15,000 SF Surface Preparation and paint stabilization and disposal of wastes, **painted interior/exterior wood or transite components** (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01920 through 01950 \$_____ \$_____

01937-S 500 CY Removal of Lead Contaminated Soils and disposal of wastes, **contaminated soil** (minimum quantity to be used per assignment will be 5 CY) per Specifications series 01920 through 01939 \$_____ \$_____

01974-M 10,000 SF Removal of Mold Contaminated Building Materials and disposal of wastes, **dry wall construction materials** (minimum quantity to be used per assignment will be 1500 SF) per Specifications series 01960 through 01975 \$_____ \$_____

TOTAL BID: \$ _____

Offers shall be firm unless otherwise specified. Pricing shall be entered on the Bid/Quote Sheet (if applicable) in ink. Totals shall be entered in the "Total Price" column of the Bid/Quote Sheet. In the event of a discrepancy between unit price and extended price, the unit price shall govern.

Optional Information on Bid Prices Submitted by Computer Printout

In lieu of handwritten unit prices in figures in ink on the Bid forms above, Bidders, at their option, may submit an original computer printout sheet bearing certification by, and signature for, the Bidding firm. The unit prices shown on acceptable printouts will be the unit prices used to tabulate the Bid and used in the Contract if awarded by the City.

TIME OF COMPLETION: The undersigned Bidder agrees to commence work within twelve (12) Calendar Days after written notice as specified in a written "Notice to Proceed" to be issued by the OWNER for each work assignment and to finally complete all work described in the Notice to Proceed, as required by the Project Manual, Drawings AND Addenda for the Work within the duration established by the OWNER for each assignment. The OWNER will consult with the Contractor on each assignment's duration, but the OWNER will have the ultimate discretion on duration which shall not be unreasonably stipulated. The Bidder further agrees that should the Bidder fail to finally complete the work within the number of days allowed for each assignment or as subsequently adjusted, Bidder shall pay the liquidated damages for each consecutive day thereafter as provided below; unless the OWNER elects to pursue any other action allowed by law. Liquidated damages are \$200 per working assignment per Calendar Day.

CONTRACTOR CERTIFICATIONS

CITATIONS: The undersigned certifies that he

has

has never

received any citations issued by Federal, State or Local regulatory agencies relating to asbestos and/or asbestos abatement activities for the Contracting Company listed below and any and all its affiliates. If any citations have been issued, attach a record of said citations including projects, dates and resolutions.

LEGAL PROCEEDINGS/CLAIMS: The undersigned certifies that he has

has

has never

been involved in any asbestos and/or asbestos-related legal proceedings/claims in which the **Contractor** (or employees scheduled to participate in this project) have participated or are currently involved. If any legal proceedings/claims have been issued, attach a record of said legal proceedings/claims including descriptions of role, issue and resolution to date.

TERMINATIONS: The undersigned certifies that he

has

has never

been involved in situations in which a asbestos and/or asbestos related Contract has been terminated. If any terminations have been issued, attach a record of said terminations including projects, dates and reasons for terminations.

CERTIFICATIONS: The undersigned certifies that he is authorized to execute Contracts on behalf of the **Contractor** as legally named, that this proposal is submitted in good faith without fraud or collusion with any other contractor, that the data indicated below is true and complete, and that the Cost Submittal is made in good faith and in full accord with State Law. Notice of acceptance may be sent to the undersigned at the address set forth below.

Legal name of **Contractor**: _____

Mailing Address: _____

(Legal Signature): _____

Name Typed: _____

Title: _____

Corporation number (if applicable): _____

CITY OF AUSTIN INSPECTION FORM

Page 1 of 2

In connection with performance of this contract, work, Purchase Order, Confirmation Purchase Order, and/or Purchase Release, I (_____ ,

(Name)

_____, of _____ ,

(Title)

(Company Name)

have visually and physically inspected the work areas and access routes to the work areas located at _____ , and find it (them) to be adequate,

(Facility Name)

of safe design or construction, and acceptable for use by the employees of the Contractor, Subcontractor, and Sub-subcontractor to work upon and in the vicinity thereof. I further understand that any accidents, where people or property are involved, are to be reported immediately to the City representative or Superintendent of the facility.

Signatures:

Company Representative Title Date

Company Name

Employee Name Social Security Number

CITY OF AUSTIN INSPECTION FORM

Employee Name

Social Security Number

Witness Name

Street Address

City

State

Zip Code

Submitted by:

COA Representative, agent, or employee

Date

MAKE COPIES AS NECESSARY

**MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISE (MBE/WBE)
PROCUREMENT PROGRAM
NO GOALS FORM**

SOLICITATION NUMBER: DKC0040

PROJECT NAME: ABATEMENT SERVICES FOR ASBESTOS, LEAD & MOLD

The City of Austin has determined that no goals are appropriate for this project. Even though no goals have been established for this solicitation, the Bidder/Proposer is required to comply with the City's MBE/WBE Procurement Program, if areas of subcontracting are identified.

If any service is needed to perform the Contract and the Bidder/Proposer does not perform the service with its own workforce or if supplies or materials are required and the Bidder/Proposer does not have the supplies or materials in its inventory, the Bidder/Proposer shall contact the Small and Minority Business Resources Department (SMBR) at (512) 974-7600 to obtain a list of MBE and WBE firms available to perform the service or provide the supplies or materials. The Bidder/Proposer must also make a Good Faith Effort to use available MBE and WBE firms. Good Faith Efforts include but are not limited to contacting the listed MBE and WBE firms to solicit their interest in performing on the Contract; using MBE and WBE firms that have shown an interest, meet qualifications, and are competitive in the market; and documenting the results of the contacts.

Will subcontractors or sub-consultants or suppliers be used to perform portions of this Contract?

No _____ If no, please sign the No Goals Form and submit it with your Bid/Proposal in a sealed envelope.

Yes _____ If yes, please contact SMBR to obtain further instructions and an availability list and perform Good Faith Efforts. Complete and submit the No Goals Form and the No Goals Utilization Plan with your Bid/Proposal in a sealed envelope.

After Contract award, if your firm subcontracts any portion of the Contract, it is a requirement to complete Good Faith Efforts and the No Goals Utilization Plan, listing any subcontractor, subconsultant, or supplier. Return the completed Plan to the Project Manager or the Contract Manager.

I understand that even though no goals have been established, I must comply with the City's MBE/WBE Procurement Program if subcontracting areas are identified. I agree that this No Goals Form and No Goals Utilization Plan shall become a part of my Contract with the City of Austin.

Company Name

Name and Title of Authorized Representative (Print or Type)

Signature

Date

**MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISE (MBE/WBE)
 PROCUREMENT PROGRAM
 NO GOALS UTILIZATION PLAN**
(Please duplicate as needed)

SOLICITATION NUMBER: DKC0040
PROJECT NAME: ABATEMENT SERVICES FOR ASBESTOS, LEAD & MOLD

PRIME CONTRACTOR/CONSULTANT COMPANY INFORMATION

Name of Contractor/Consultant			
Address			
City, State Zip			
Phone		Fax Number	
Name of Contact Person			
Is company City certified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	MBE <input type="checkbox"/> WBE <input type="checkbox"/> MBE/WBE Joint Venture <input type="checkbox"/>

I certify that the information included in this No Goals Utilization Plan is true and complete to the best of my knowledge and belief. I further understand and agree that the information in this document shall become part of my Contract with the City of Austin.

Name and Title of Authorized Representative (Print or Type)

Signature _____
Date

Provide a list of all proposed subcontractors/subconsultants/suppliers that will be used in the performance of this Contract. **Attach Good Faith Efforts documentation if non MBE/WBE firms will be used.**

Sub-Contractor/Consultant	
City of Austin Certified	MBE <input type="checkbox"/> WBE <input type="checkbox"/> Ethnic/Gender Code: <input type="checkbox"/> NON-CERTIFIED
Vendor ID Code	
Contact Person	Phone Number:
Amount of Subcontract	\$
List commodity codes & description of services	

Sub-Contractor/Consultant	
City of Austin Certified	MBE <input type="checkbox"/> WBE <input type="checkbox"/> Ethnic/Gender Code: <input type="checkbox"/> NON-CERTIFIED
Vendor ID Code	
Contact Person	Phone Number:
Amount of Subcontract	\$
List commodity codes & description of services	

FOR SMALL AND MINORITY BUSINESS RESOURCES DEPARTMENT USE ONLY:			
Having reviewed this plan, I acknowledge that the proposer (HAS) or (HAS NOT) complied with City Code Chapter 2-9A/B/C/D, as amended.			
Reviewing Counselor _____	Date _____	Director/Deputy Director _____	Date _____

**CITY OF AUSTIN
PURCHASING OFFICE
"NO OFFER" REPLY FORM**

SOLICITATION NUMBER: RFP DKC0040

Please Complete and Return This Form to the following address to Indicate a "No Offer" Reply

City of Austin
Purchasing Office
P.O. Box 1088
Austin, Texas 78767-8845

(DO NOT RETURN ALONG WITH OFFER)

Please check the appropriate box to indicate why your firm is submitting a "no offer" response. Failure to respond to three (3) consecutive solicitations may result in your company being removed from the source list for this commodity or service. Completion of this form will assist us in maintaining an accurate, up-to-date source list.

COMMODITY CODE: 9103820

DESCRIPTION: ASBESTOS REMOVAL SERVICES

- Unable to supply item(s) specified. Remove my company from the source list for the Commodity / Service Group
- Unable to supply item(s) specified. Retain my company on the vendor list for this commodity / service.
- Cannot meet the Scope of Work / Specifications.
- Cannot provide required Insurance.
- Cannot provide required Bonding.
- Job too small.
- Job too large.
- Do not wish to do business with the City. Remove my company from the City's Vendor list.
- Other reason (please state why you will not submit a bid):

Contractor's Name:

Street Address

City, State, Zip Code

Signature of Officer or
Authorized

Representative:

Date:

Printed Name:

Title