THE SCHOOL DISTRICT OF PALM BEACH COUNTY
PURCHASING DEPARTMENT
3326 FOREST HILL BOULEVARD, SUITE A-323
WEST PALM BEACH, FL 33406-5813
MAIN: (561) 434-8216/FAX: (561) 963-3823

NOTICE OF BID/RFP SOLICITATION

Addendum 1:

See new revised 06C-005N - RFP Document changes are highlighted.

06C-005N

Asbestos Abatement Services

Solicitation for the above bid is now available. If your company would like to receive this solicitation package, return a print out of this e-mail to the address above along with a cashier's check, company check (no personal checks accepted) or money order (no cash please) in the amount of $5.00 payable to The School District of Palm Beach County.

This solicitation will also be available upon release, at no charge, on the Purchasing Department's Internet Hotline. Simply go to http://www.palmbeach.k12.fl.us/bids then click on the solicitation name to register, view and print.

For further information about this bid, please contact:

Purchasing Agent: Genell McMann
Telephone (561) 434-8210
Fax: (561) 963-3823
E-Mail: mcmann@palmbeach.k12.fl.us

Please note: All Bid Documents are PDF files. You will need Adobe's Acrobat Reader to view and print these files. You can download the Acrobat Reader for free by clicking on Adobe button provided at the Purchasing web site.

6/12/2006 11:46:00 AM

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WEST PALM BEACH, FL 33406-5813
MAIN: (561) 434-8216/FAX: (561) 963-3823

NOTICE OF BID/RFP SOLICITATION

Addendum - 2:

See new revised 06C-005N - RFP Document

Added changes to: 35.0 THE JESSICA LUNDSFORD ACT and **Attachment E**. highlighted changes.

Added: Attachment I

06C-005N

Asbestos Abatement Services

Solicitation for the above bid is now available. If your company would like to receive this solicitation package, return a print out of this e-mail to the address above along with a cashier's check, company check (no personal checks accepted) or money order (no cash please) in the amount of $5.00 payable to The School District of Palm Beach County.

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6/12/2006 11:46:00 AM

SCHOOL DISTRICT OF PALM BEACH COUNTY

PURCHASING DEPARTMENT

REQUEST FOR PROPOSAL (RFP)

REQUIRED RESPONSE FORM

06C-005N

DATE: June 6, 2006

TITLE: RFP FOR ASBESTOS ABATEMENT SERVICES

This proposal must be submitted to the School District of Palm Beach County, Purchasing Department, 3300 Forest Hill Boulevard, Suite A-323, West Palm Beach, Florida 33406-5813, no later than 2:00 PM on June 28, 2006, and plainly marked RFP-06C-005N. Proposals are due and will be opened at this time.

Anti-Collusion Statement / Public Domain

I, the undersigned proposer have not divulged, discussed, or compared this proposal with any other proposer and have not colluded with any other proposer in the preparation of this proposal in order to gain an unfair advantage in the award of this proposal.

I acknowledge that all information contained herein is part of the public domain as defined in the Public Records Act, Chapter 119, F.S.

Proposal Certification

I hereby certify that I am submitting the following information as my company's proposal and understand that by virtue of executing and returning with this proposal this REQUIRED RESPONSE FORM, I further certify full, complete and unconditional acceptance of the contents of Pages 1 through 32 inclusive of this Request for Proposal, and all appendices and the contents of any Addendum released hereto. Proposal must be signed by an officer or employee having authority to legally bind the proposer.

PROPOSER (firm name): _____

STREET ADDRESS: _____

CITY & STATE: _____

PRINT NAME OF AUTHORIZED REPRESENTATIVE: _____

SIGNATURE OF AUTHORIZED REPRESENTATIVE: _____

TITLE: _____ **DATE:** _____

CONTACT PERSON: _____

CONTACT PERSON'S ADDRESS: _____

TELEPHONE: _____ **FAX:** _____ **TOLL FREE:** _____

E-MAIL ADDRESS: _____ **INTERNET URL:** _____

PROPOSER TAXPAYER IDENTIFICATION NUMBER: _____

NOTE: Entries must be completed in ink or typewritten. An original manual signature is required.

REQUEST FOR PROPOSAL NO**. 06C-005N**

SCHOOL DISTRICT OF PALM BEACH COUNTY, FLORIDA
REQUEST FOR PROPOSAL FOR

ASBESTOS ABATEMENT SERVICES

INDEX

SCHOOL DISTRICT OF PALM BEACH COUNTY

REQUEST FOR PROPOSAL FOR

ASBESTOS ABATEMENT SERVICES

1.0 INTRODUCTION

1.1 This is a Request for Proposal (RFP) for ASBESTOS ABATEMENT SERVICES to the School District of Palm Beach County, Florida (the District).

1.2 All terms and conditions of this RFP, any addenda, proposer's submissions and negotiated terms, are incorporated into the contract by reference as set forth herein.

1.3 Document files may be examined, during normal working hours, ten days after proposals have been opened.

2.0 INSTRUCTIONS TO PROPOSER

2.1 All proposals must be received no later than 2:00 PM, on June 28, 2006. If a proposal is transmitted by US Mail or other delivery medium, the proposer(s) will be responsible for its timely delivery to the Department of Purchasing, Suite A-323, 3300 Forest Hill Boulevard, West Palm Beach, Florida 33406-5813.

2.2 Any proposal received after the stated time and date, will not be considered and will be returned unopened to the proposer(s) after the RFP posting period has expired.

2.3 One manually signed original and **Seven (7)** photocopies of the proposal must be sealed in one package and clearly labeled "REQUEST FOR PROPOSAL FOR ASBESTOS ABATEMENT SERVICES" on the outside of the package. The legal name, address, proposer's contact person, and telephone number must also be clearly annotated on the outside of the package.

2.4 All proposals must be signed by an officer or employee having authority to legally bind the proposer(s).

2.5 Any corrections of unit prices must be initialed. This includes corrections made using correction fluid (white out) or any other method of correction.

2.6 Proposer should become familiar with any local conditions which may, in any manner, affect the services required. The proposer(s) is/are required to carefully examine the RFP terms and to become thoroughly familiar with any and all conditions and requirements that may in any manner affect the work to be performed under the contract. No additional allowance will be made due to lack of knowledge of these conditions.

2.7 Proposals not conforming to the instructions provided herein will be subject to disqualification at the sole option of the District.

2.8 Any proposal may be withdrawn prior to the date and time the proposals are due. Any proposal not withdrawn will constitute an irrevocable offer, for a period of 90 days, to provide the District with the services specified in the proposal.

2.9 DELIVERY OF RFPS: When hand delivering your RFP, proposers must follow the District's security access procedures. The procedures are as follows:

A. Park in visitors' parking area.
B. Enter building through the front door.
C. Proceed to the Purchasing Department located in Third Floor, A-Wing, Room A-323.
D. Present ITN to Purchasing Department receptionist for official date/time stamping.
E. Present bid to the Purchasing receptionist for official date/time stamping.

PROPOSERS SHOULD ALLOW AT LEAST 30 MINUTES TO FOLLOW THE ABOVE PROCEDURES AND SUBMIT THEIR RFP TO THE PURCHASING DEPARTMENT RECEPTIONIST, NO LATER THAN THE DATE AND TIME DESIGNATED IN THE RFP.

3.0 TIME SCHEDULE

3.1 The District will attempt to use the following time schedule which will result in selection of a proposer(s).

June 14, 2006	*Pre-Proposal Conference
June 14, 2006	All written questions and inquires are due by 5:00 PM (EST)
June 28, 2006	Proposals due no later than 2:00 PM (EST)
August 22, 2006	*Evaluation Committee Meeting
August 23, 2006	Posting of Recommendation
September 20, 2006	Recommend proposer(s) to the School Board for approval.

* This is an open, public meeting.

3.2 Notification of any changes to the time schedule will be made to proposers by US certified mail, e-mail or fax.

3.3 Response to inquiries regarding the status of a proposal must not be made prior to the posting of award recommendation.

4.0 AWARD

4.1 The District reserves the right to accept or reject any or all proposals.

4.2 The District reserves the right to waive any irregularities and technicalities and may, at its sole discretion, request a clarification or other information to evaluate any or all proposals.

4.3 The District reserves the right, before awarding the contract, to require proposer(s) to submit evidence of qualifications or any other information the District may deem necessary.

4.4 The District reserves the right, prior to The School Board of Palm Beach County, Florida approval, to cancel the RFP or portions thereof, without penalty.

4.5 The District reserves the right to: (1) accept the proposals of any or all of the items it deems, at its sole discretion, to be in the best interest of the District; and (2) the District reserves the right to reject any and/or all items proposed or award to multiple proposers.

4.6 The proposal with the highest number of points will be ranked first; however, nothing herein will prevent the School Board of Palm Beach County, Florida, from making multiple awards and to deem all proposals responsive, and to assign work to any firm deemed responsive.

4.7 The District reserves the right to further negotiate any proposal, including price, with the highest rated proposer. If an agreement cannot be reached with the highest rated proposer, the District reserves the right to negotiate and recommend award to the next highest proposer or subsequent proposers until an agreement is reached.

5.0 TERM OF CONTRACT / RENEWAL

5.1 The term of this contract shall be for five (5) years from December 13, 2006. If needed, the contract will be extended 90 days beyond the contract expiration date. The awardee will be notified when the Board has acted upon the recommendation. All prices shall be firm for the term of this contract. The awardee agrees to this condition by signing its proposal.

6.0 RFP INQUIRIES

6.1 Any questions concerning conditions and specifications must be submitted in writing and received no later than 5:00 p.m. EST, June 14, 2006. Questions received in writing by the time and date specified will be answered in writing. Genell McMann is authorized only to direct the attention of prospective proposers to various portions of the RFP so that they may read and interpret such for themselves. Neither Genell McMann nor any employee of the District is authorized to interpret any portion of this RFP or give information as to the requirements of the RFP in addition to that contained in the written documents.

Send all inquiries to attention:

Genell McMann, Purchasing Agent
Purchasing Department
School District of Palm Beach County
3300 Forest Hill Boulevard
West Palm Beach, FL 33406
(561) 434-8210 FAX (561) 434-8185
mcmann@palmbeach.k12.fl.us

6.2 If necessary, an addendum will be mailed or delivered to all who are known by the Purchasing Department to have received a complete set of proposal documents.

6.3 Copies of addendum will be made available for inspection at the District's Purchasing Department where proposal documents will be kept on file.

6.4 No addendum will be issued later than three calendar days prior to the date for receipt of proposals except an addendum withdrawing the request for proposals or one which includes postponement of the date for receipt of proposals.

6.5 No verbal or written information which is obtained other than by information in this document or by addendum to this RFP will be binding on the District.

7.0 BENEFICIAL INTEREST AND DISCLOSURE OF OWNERSHIP AFFIDAVIT

7.1 The District is requesting this affidavit to include a list of every “person” (as defined in Section 1.01(3), Florida Statues to include individuals, children, firms, associates, joint adventures, partnerships, estates, trusts, business trusts, syndicates, fiduciaries, corporations and all other groups and combinations) holding 5% or more of the beneficial interest in the disclosing entity. The affidavit must be returned to the Purchasing Department with the RFP or within three days of request. See ATTACHMENT F.

8.0 LOBBYING

8.1 PROPOSERS ARE HEREBY ADVISED THAT LOBBYING IS NOT PERMITTED WITH ANY DISTRICT PERSONNEL OR BOARD MEMBERS RELATED TO OR INVOLVED WITH THIS RFP UNTIL THE ADMINISTRATION'S RECOMMENDATION FOR AWARD HAS BEEN POSTED AT THE PURCHASING DEPARTMENT RECEPTION CENTER. ALL ORAL OR WRITTEN INQUIRIES MUST BE DIRECTED THROUGH THE PURCHASING DEPARTMENT.

8.2 LOBBYING IS DEFINED AS ANY ACTION TAKEN BY AN INDIVIDUAL, FIRM, ASSOCIATION, JOINT VENTURE, PARTNERSHIP, SYNDICATE, CORPORATION, AND ALL OTHER GROUPS WHO SEEK TO INFLUENCE THE GOVERNMENTAL DECISION OF A BOARD MEMBER OR DISTRICT PERSONNEL AFTER ADVERTISEMENT AND PRIOR TO THE POSTED RECOMMENDATION ON THE AWARD OF THIS CONTRACT.

8.3 ANY BIDDER WHO IS ADVERSELY AFFECTED BY THE RECOMMENDED AWARD MAY FILE A PROTEST WITHIN THE TIME PRESCRIBED IN SECTION **120.57**(3), FLORIDA STATUTES. FAILURE TO POST BOND WITH THE SCHOOL BOARD OR TO ADHERE STRICTLY TO THE REQUIREMENTS OF STATUTES AND STATE BOARD RULES PERTAINING TO PROTESTS WILL RESULT IN SUMMARY DISMISSAL BY THE PURCHASING DEPARTMENT. ADDITIONALLY, ANY BIDDER WHO IS ADVERSELY AFFECTED BY THE RECOMMENDED AWARD MAY ADDRESS THE SCHOOL BOARD AT A REGULARLY SCHEDULED BOARD MEETING.

8.4 ANY PROPOSER OR ANY INDIVIDUALS THAT LOBBY ON BEHALF OF PROPOSER DURING THE TIME SPECIFIED WILL RESULT IN REJECTION / DISQUALIFICATION OF SAID PROPOSAL.

9.0 SCOPE OF SERVICES

9.1 The scope of services may include any and all services needed to provide asbestos abatement for the School District of Palm Beach County. This includes all plant, labor, materials, supplies, equipment, etc. necessary or incidental for the proper completion of work in accordance with the District's "**Technical Specification and Unit Price Schedule**" dated 2006 (Attachment **I**). Any work not specified in the Unit Price Schedule will be addressed on your RFP Summary Sheet (Attachment **G**) under "Time and Material Work: Costs To Be Reimbursed."

10.0 PRE-PROPOSAL CONFERENCE

10.1 A pre-proposal conference will be held at the School District of Palm Beach County, 3300 Forest Hill Boulevard, West Palm Beach, Florida, Thurber Conference Room, Wing C, First Floor, on June 14, 2006 at 9:00 a.m. (EST). All prospective proposers should attend said pre-proposal conference.

10.2 Bring all questions in writing. Compose your questions on paper, ask your questions at the pre-proposal conference and give the facilitator the written copy of your questions. Please write each question that you will ask on a separate piece of paper showing the RFP page number to which the question refers. After you ask your questions, the District facilitator will collect your written copy of the questions asked. Submitting your questions in writing will assist in the preparation of an addendum and will eliminate any confusion in understanding your questions.

11.0 EVALUATION COMMITTEE MEETINGS

11.1 As stated in Section 3.1 and Section 13.2 a committee will be convened to review and evaluate responsive proposals, for the purposes of making a decision as to an intended award. Per F.S. 286.011, this is an open public meeting. Notification will also be posted for review by interested parties at the School District Purchasing Department, 3300 Forest Hill Boulevard, Suite A-323, West Palm Beach, FL 33406.

12.0 PREPARATION AND SUBMISSION

12.1 In order to maintain comparability and enhance the review process, it is requested that proposals be organized in the manner specified below. Include all information in your proposal. **It is required that Seven (7) copies of the proposal be submitted in addition to the original proposal.**

12.2 Title Page: Show the RFP number, subject, name of the proposer, address, telephone number, email address and the date.

12.3 Table of Contents: Include a clear identification of the material by section and by page number.

12.4 Letter of Transmittal: Provide the names of the persons who will be authorized to make representations for the proposer, their titles, addresses and telephone numbers.

12.5 Request for Proposal: Required Response Form (page 1 of RFP) with all required information completed and all signatures as specified.

12.6 Experience and Qualifications of the Firm: State the experience your firm has had in the last 2 years with implementing an ASBESTOS ABATEMENT SERVICES of similar size to the District. (i.e. number of customers, extent of provided applications, duration of contracts, etc.)

12.7 Qualifications of Staff: Provide the names of individuals who will be assigned to this contract, including their resumes and expand on their experience in the area they will be serving.

12.8 Approach / Methodology: Describe the methods that you will use to meet the objectives outlined in the Scope of Services, Section 9.0. Include a proposed timeline for each step.

12.9 Time of Completion: State your ability to meet the time requirements.

12.10 Cost of Services: Complete “RFP Summary Sheet,” (Attachment G). Costs must remain the same for the duration of the contract. Please review Unit Price Schedule in Attachment I, Technical Specifications, dated 2006.

12.11 Minority/Women Business Participation: Proposers are to indicate the extent and nature of the M/WBE's scope of work with specificity as it relates to the services described in the RFP. Proposers shall provide certification with the District, or the State of Florida, Office of Supplier Diversity, or its successors. Proposers that are District, or State of Florida Office of Supplier Diversity, or it successors certified minority, women, or disadvantage business enterprises, at the time of submittal, will be awarded a maximum of ten points. Maximum points will be awarded for 15% or greater minority participation. Points will be pro-rated for less than 15% minority participation. Proposers that do not meet the above requirement may sub-contract minority business participation in accordance with Section 31.0 and receive participation points

Points for utilization of certified M/WBE subcontractors shall be assigned as follows:

15% and over 10 points

9% - 14%	8 points
4% - 8%	6 points
1% - 3%	4 points
0%	0 points

12.12 Insurance: Provide proof of your company's insurance as required in Section 22.0 of this RFP or submit a letter of your intention to have the required insurance within ten days of notification by the District.

13.0 PROPOSAL EVALUATION PROCESS:

13.1 RFPs are received and publicly opened. Only names of respondents are read at this time.

13.2 An Evaluation Committee, consisting of District personnel, will convene, review and discuss all proposals submitted. Purchasing personnel will participate in an advisory capacity only.

13.3 The Evaluation Committee will assign points in the evaluation and recommendation process in accordance with the evaluation criteria listed in Evaluation Criteria, Section 14.0. and rank all proposals accordingly.

13.4 The Evaluation Committee reserves the right to interview any or all proposers and to require a formal presentation with the key people who will administer and be assigned to work on the contract before recommendation of award. This interview is to be based upon the written proposal received.

13.5 The Evaluation Committee or their designees reserves the right to negotiate further terms and conditions, including price with the highest ranked proposer. If a mutually beneficial agreement with the first ranked proposer or all proposers being considered for award cannot be resolved, the negotiation committee reserves the right to enter into negotiations with the next highest ranked proposer and continue this process until agreement is reached with the number of programs required to meet the needs of the District.

13.6 The results of the evaluation committee is reviewed and approved by the Department Director and the Purchasing Director prior to posting the recommendation.

13.7 The Purchasing Department will prepare and submit an agenda item to the Superintendent of Schools, School District of Palm Beach County, Florida.

13.8 The Superintendent will recommend to the Board, the award or rejection of any and/or all proposal(s).

13.9 The Board will award or reject any or all proposal(s).

14.0 EVALUATION CRITERIA

The Evaluation Committee shall rank all proposals received, which meet the submittal requirements, in order to establish a pool of qualified proposers.

Qualified proposers will be issued purchase orders authorizing a maximum cost of services on an as-needed basis.

MAXIMUM POINTS

A. **Experience and Qualifications of the Firm** 25
See Attachment H, Qualifications Checklist

(1) The selected contractor(s) will have a minimum of four consecutive years of asbestos abatement experience under the same firm name. Indicate the length of time your firm has been conducting asbestos abatement activities. List the principal owners and company officers. **SUBMIT A COPY OF THE ARTICLES OF INCORPORATION TO VERIFY THE AGE OF YOUR COMPANY**.

(2) Proposers must be licensed in the State of Florida as Asbestos Contractors in accordance with Florida Statutes. **A COPY OF THE LICENSE MUST BE SUBMITTED WITH YOUR PROPOSAL.**

(3) Proposers must possess sufficient equipment, personnel, and supplies for timely completion of projects. List the equipment (i.e., number of HEPA filtered fan units and vacuums, vehicles, etc.) your firm has in stock that would be available for projects during the contract period. In response to this proposal, **THE BOARD RESERVES THE RIGHT TO INSPECT WAREHOUSES WITH 24-HOUR NOTICE**.

(4) Proposers shall submit certification that neither the firm nor its principals have been involved in litigation or arbitration involving any abatement project in the past four years or provide complete information for each case, including the nature of litigation or arbitration, all parties to such proceedings, names/addresses/telephone numbers of attorneys for each party, and dates commenced and completed. The Board reserves the right to make appropriate inquiries to verify the information provided.

(5) Proposers shall submit certification that the firm has not been cited in connection with an abatement project within the past four years, by either United States Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), state, county, or local regulatory agencies or a complete description of such citations and their disposition. The Board reserves the right to make appropriate inquiries to any local, state, or federal regulatory agency to verify the information provided.

B. **Qualifications of Staff** 20

(1) Supervisory Personnel - List the supervisory personnel to be assigned to this contract and the number of employees they would be directing. Include a resume of one page or less for each supervisor including a description of the abatement projects (type of abatement, quantity of ACM abated, number of days to complete the project) they have supervised within the last two years. Supervisory personnel must have attended an asbestos abatement project supervision course and hold a current certificate in accordance with Florida Statutes. Include copies of all licenses and certifications held by these individuals.

(2) Contact Person - Identify the specific principal of the firm who would serve the Board on a day-to-day basis and be responsible for coordinating asbestos abatement services. List major abatements within the last two years for which the individual serves as primary coordinator. Indicate the length of time the individual has served as an abatement project manager. Include copies of all licenses and certifications held by this individual.

Indicate the availability of the individual listed for the following:

A. Attendance at meetings upon request.
B. Response time to telephone calls.
C. Response time to specific inquiries.

List the name, address, telephone number and email address of the contact person in regard to the proposal and the principal authorized to sign the contract for the proposer.

(3) Other Personnel - List all individuals currently employed with your firm to be dedicated to this contract, their title and experience. Removal workers must hold current certifications as asbestos abatement workers in accordance with Florida Statutes. Include copies of these certificates with your proposal.

(4) Response Time - Proposers will indicate the availability of the contact person listed above as to attendance at meetings upon request, response time to telephone calls, response time to specific inquiries, and accessibility in the event of an emergency. The contractors will provide an emergency phone number(s) for the contact person listed above.

C. **References** 20

The Evaluation Committee reserves the right to contact references provided in the proposal document and others. Responses from these contacts will be considered in the selection process. Provide a list of five (5) clients for which you have provided asbestos abatement services during the past two years. The Evaluation Committee may contact these references and others.

(1) Specifically limit the list to five (5) abatements completed within the past two years that exceeded $10,000. Provide the client's name, address, dollar value, contact person, email address and the telephone numbers where they can be reached.

(2) Group all asbestos abatement services provided to the same client, beginning with any governmental clients. Include school related projects.

(3) Identify the type of abatement services provided (i.e., VAT removal, ceiling tile removal, thermal system insulation removal, O & M activities, etc.).

(4) Provide information of any innovative abatement or O & M activities that saved the client money

E. **Cost of Services** 25

The prices provided on the RFP Summary Sheet (Attachment G), including multipliers and hourly rates of personnel for time and material provisions, will be evaluated and awarded points based on the comparison to prices proposed by all other qualified proposers of the RFP.

F. **Minority/Women Business Participation** 10

Total 100

15.0 CANCELLATION OF AWARD/TERMINATION

15.1 In the event any of the provisions of this proposal are violated by the proposer(s), the Superintendent or designee will give written notice to the proposer(s) stating the deficiencies and unless the deficiencies are corrected within ten (10) days, recommendation will be made to the District for immediate cancellation. Upon cancellation hereunder, the District may pursue any and all legal remedies as provided herein and by law. In the event that it is subsequently determined that a cancellation under this paragraph was incorrect, the termination shall be converted to a termination for convenience pursuant to the next paragraph.

15.2 The District, reserves the right to terminate any contract resulting from this RFP, at any time and for no reason, upon giving 30 days prior written notice to the other party. If said contract should be terminated for convenience as provided herein, the District will be relieved of all obligations under said contract. The District will only be required to pay to the proposer(s) that amount of the contract actually performed to the date of termination.

15.3 The awardee(s) will have the option to terminate the contract upon written notice to the Director of Purchasing. Such notice must be received at least 90 days prior to the effective date of termination.

15.4 Cancellation of contract by awardee may result in removal from bidders/proposer list for a period of three years.

16.0 FUNDING OUT, TERMINATION, CANCELLATION

16.1 Florida School Laws prohibit Board from creating obligations on anticipation of budgeted revenues from one fiscal year to another without year-to-year extension provisions in the agreements.

16.2 It is necessary that fiscal funding out provisions be included in all RFPs in which the terms are for periods of longer than one year.

16.3 Therefore, the following funding out provisions are an integral part of this RFP and must be agreed to by all proposers:

The School Board may, during the contract period, terminate or discontinue the services covered in this RFP for lack of appropriated funds upon the same terms and conditions as set forth in Section 15.0, Cancellation of Award / Termination.

Such prior written notice will state:

a. That the lack of appropriated funds is the reason for termination, and
b. Agreement not to replace the services being terminated with services similar to those covered in this RFP from another vendor in the succeeding funding period.

"This written notification will thereafter release The School Board of Palm Beach County, Florida of all further obligations in any way related to such equipment covered herein".

16.4 This completed statement must be included as part of any contract submitted by the successful proposer. No contract will be considered that does not include this provision for "funding out".

17.0 DEFAULT

17.1 In the event that the awarded proposer(s) should breach this contract the District reserves the right to seek remedies in law and/or in equity.

18.0 DEBARMENT

18.1 The Board shall have the authority to debar a person / corporation for cause for consideration or award of future contracts. The debarment shall be for a period commensurate with the seriousness of the causes, generally not to exceed three (3) years. When the offense is willful or blatant, a longer term of debarment may be imposed, up to an indefinite period.

19.0 LEGAL REQUIREMENTS

19.1 It shall be the responsibility of the contractor to be knowledgeable of all federal, state, county and local laws, ordinances, rules and regulations and School Board Policy that in any manner affect the items covered herein which may apply. Specifically, proposer(s) is to adhere to School Board Policies 3.12 and 3.13, pursuant to the following, with respect to any criminal arrests and convictions, and is on notice thereto that any employees involved in any Chapter 435, Florida Statutes offenses are precluded from continuing to work on the project and must be replaced. Failure to comply may result in the immediate termination of the vendor's contract at the sole discretion of the District. Lack of knowledge by the proposer(s) will in no way be a cause for relief from responsibility.

19.2 Proposer(s) doing business with the District are prohibited from discriminating against any employee, applicant, or client because of race, creed, color, national origin, religion, sex or age with regard to but not limited to the following: employment practices, rates of pay or other compensation methods, and training selection.

20.0 FEDERAL AND STATE TAX

20.1 The District is exempt from federal and state taxes for tangible personal property. The Purchasing Department Coordinator will sign an exemption certificate submitted by the successful proposer(s). Proposer(s) doing business with the District will not be exempted from paying sales tax to their suppliers for materials to fulfill contractual obligations with the District, nor will any proposer be authorized to use the District's Tax Exemption Number in securing such materials.

21.0 CONFLICT OF INTEREST

21.1 All proposers must disclose the name of any officer, director, or agent who is also an employee of the District. All proposers must disclose the name of any District employee who owns, directly or indirectly, any interest in the proposers' business or any of its branches.

22.0 INSURANCE REQUIREMENTS

22.1 Proof of the following insurance will be furnished by the awarded proposers/bidders to the School Board of Palm Beach County by Certificate of Insurance. All insurance must be issued by a company or companies approved by the Board.

22.2 Original Certificates of Insurance meeting the specific required provision specified within this contract/ shall be forwarded to the Palm Beach County School District's Purchasing Department, ATTN: Genell McMann, Purchasing Agent, and approved prior to the start of any work or the possession of any school property. Renewal certificates must be forwarded to the same department prior to the policy renewal date.

22.3 Thirty days written notice must be provided to The School Board of Palm Beach County via certified mail in the event of cancellation. The notice must be sent to the Purchasing Department.

22.4 The awarded proposers shall provide complete copies of any insurance policy for required coverage within seven days of the date of request by the Purchasing Department but in any respect at least 30 days prior to the commencement of any term. For all contracts with a bid amount of $500,000 or more the actual INSURANCE POLICY must be included with the Certificate of Insurance.

A. **WORKERS' COMPENSATION**: Proposer(s) must comply with Chapter 440, Florida Statues Workers' Compensation and Employees' Liability Insurance with minimum statutory limits.

B. **COMMERCIAL GENERAL LIABILITY**: Awarded proposers/bidders shall procure and maintain, for the life of this contract/agreement, Commercial General Liability Insurance. This policy shall provide coverage for death, bodily injury, personal injury, products and completed operations liability and property damage that could arise directly or indirectly from the performance of this agreement. It must be an occurrence form policy. **THE SCHOOL DISTRICT OF PALM BEACH COUNTY SHALL BE NAMED AS AN ADDITIONAL INSURED ON THE CERTIFICATE FOR COMMERCIAL GENERAL LIABILITY INSURANCE.**

The minimum limits of coverage shall be $2,000,000 per occurrence, Combined, Single Limit for Bodily Injury Liability and Property Damage Liability.

C. **BUSINESS AUTOMOBILE LIABILITY:** Awarded proposers/bidders shall procure and maintain, for the life of the contract/agreement, Business Automobile Liability Insurance. **THE SCHOOL DISTRICT OF PALM BEACH COUNTY SHALL BE NAMED AS AN ADDITIONAL INSURED ON THE CERTIFICATE FOR BUSINESS AUTOMOBILE LIABILITY INSURANCE.**

The minimum limits of coverage shall be $2,000,000 per occurrence, Combined Single Limit for Bodily Injury Liability and Property Damage Liability. This coverage shall be an "Any Auto " form policy. The insurance must be an occurrence form policy.

In the event the contractor does not own any vehicles, we will accept hired and non-owned coverage in the amounts listed above. In addition, we will require an affidavit signed by the contractor indicating the following:

_____ (Company Name) does not own any vehicles. In the event we acquire any vehicles throughout the term of this contract/agreement, _____ (Company Name) agrees to purchase "Any Auto" coverage as of the date of acquisition.

D. **PROFESSIONAL LIABILITY:** The awarded proposer/bidder shall procure and maintain Professional Liability Insurance for the life of this contract/agreement, plus two years after completion. This insurance shall provide coverage against such liability resulting from this contract. The minimum limits of coverage shall be $2,000,000 with a deductible not to exceed $5,000. The deductible shall be the responsibility of the insured.

This policy must be continued or tail coverage provided for two years after completion of the project.

23.0 INDEMNIFICATION / HOLD HARMLESS AGREEMENT

23.1 Awarded proposers/bidders shall, in addition to any other obligation to indemnify the Palm Beach County School Board and to the fullest extent permitted by law, protect, defend, indemnify and hold harmless the School Board, its agents, officers, elected officials and employees from and against all claims, actions, liabilities, losses (including economic losses), costs arising out of any actual or alleged;

A. bodily injury, sickness, disease or death, or injury to or destruction of tangible property including the loss of use resulting therefrom, or any other damage or loss arising out of, or claimed to have resulted in whole or in part from any actual or alleged act or omission of the contractor, subcontractor, anyone directly or indirectly employed by any of them, of anyone for whose acts any of them may be liable in the performance of the work; or

B. violation of law, statute, ordinance, governmental administration order, rule or regulation by contractor in the performance of the work; or

C. liens, claims or actions made by the contractor or any subcontractor or other party performing the work.

23.2 The indemnification obligations hereunder shall not be limited to any limitation on the amount, type of damages, compensation or benefits payable by or for the contractor of any subcontractor under workers' compensation acts; disability benefit acts, other employee benefit acts or any statutory bar.

23.3 This article will survive the termination of this contract.

24.0 PERFORMANCE BOND

24.1 A performance bond for $100,000 is required upon notification of contract award and will remain in effect for a period of one year after completion of the contract. A new $100,000 bond must be provided for every $100,000 worth of work assigned. Performance bond shall be submitted within 15 days of receipt of notification. Purchase orders will not be released until bond is received by the Purchasing Department.

24.2 Bond Requirements:

A. The contractor shall furnish bonds pursuant to Section 24.1 above and maintain throughout the duration of the project and until one year after final completion and acceptance of the work as provided in Section 255.05, Florida Statues et seq, covering the faithful performance of the contract and payment of all obligations arising thereunder. Bonds shall be secured by the contractor from a surety company licensed in the State of Florida an "A" or better rating and "Class X" or better financial size according to the most recent edition of the Best's Key Rating Guide published by A.M. Best Company, A.M. Best Road, Oldwick, NJ 08850.

B. The successful contractor shall be required to provide surety bonds in the amount of 100% of the contract amount. The required premiums shall be paid by the successful contractor and shall be included in the base bid.

C. In addition to the above minimum qualifications, the surety company must meet at least one of the following additional qualifications:

24.3 The surety company shall hold a current certificate of authority as acceptable surety on federal bonds in accordance with the United State Department of Treasury Circular 570, Current Revisions. If the amount of the bond exceeds the underwriting limitation set forth in the circular, in order to qualify, the net retention of the surety company shall not exceed the underwriting limitation in the circular, and the excess risks must be protected by coinsurance, reinsurance, or other methods in accordance with Treasury Circular 297, revised September 1, 1978 (31 CFR Section 223.10 & Section 223.111). Further, the surety company shall provide the owner with evidence satisfactory to the owner, that such excess risk has been protected in an acceptable manner.

24.4 The surety company shall have at least an A rating in the latest edition of Best's Key Rating Guide.

MAXIMUM AMOUNT OF BOND	BEST FINANCIAL CATEGORY
$ 10,000	Class I
20,000	Class II
50,000	Class III
100,000	Class IV
250,000	Class V
500,000	Class VI
1,000,000	Class VII
2,500,000	Class VIII
5,000,000	Class IX
7,500,000	Class X
10,000,000	Class XI
12,500,000	Class XII
15,000,000	Class XIII
20,000,000	Class XIV
2% policy holder's surplus	Class XV

24.5 Time of Delivery and Form of Bonds

A. The contractor shall deliver the required bonds to the owner within 15 owner business days after the receipt of notification by the School District of Palm Beach County, Florida.

B. The performance bond shall be written in the amount of the contract sum and shall continue in effect for one year after completion and acceptance of the work.

C. The bonds shall be dated on or before the contract date.

D. The contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

E. Pursuant to the requirements of the Section 255.05(1)(a), Florida Statutes, contractor shall ensure that the bond or bonds referenced above shall be recorded in the public records of Palm Beach County. Proof of recordation must be submitted to the Contracting and Procurement Department.

25.0 PUBLIC RECORDS LAW

25.1 All proposal documents or other materials submitted by the proposer in response to this RFP will be open for inspection by any person and in accord with Chapter 119, Florida Statutes.

26.0 PERMITS AND LICENSES

26.1 The proposer(s) will be responsible for obtaining any necessary permits and licenses and will comply with laws, rules, and regulations whether state or federal and with all local codes and ordinances without additional cost to the District.

27.0 INTELLECTUAL PROPERTY RIGHTS

27.1 The proposer(s) will indemnify and hold harmless, the District from liability of any nature or kind, including costs and expenses for or on account of any copyrighted, service marked, trademarked, patented or un-patented invention, process, article or work manufactured or used in the performance of the contract, including its use by the District. If the proposer(s) uses any design, device, materials or works covered by letters, service mark, trademark, patent, copyright or any other intellectual property right, it is mutually agreed and understood without exception that the proposal prices will include all royalties of costs arising from the use of such design, device, or materials in any way involved in the work.

This article will survive the termination of any contract with the District.

28.0 COST INCURRED IN RESPONDING

28.1 All costs directly or indirectly related to proposal preparation, representation or clarification shall be the sole responsibility of and be borne by the proposer.

29.0 SUB-CONTRACTS

29.1 Nothing contained in this specification will be construed as establishing any contractual relationship between any sub-proposer(s) and the District.

29.2 The proposer(s) will be fully responsible to the District for the acts and omissions of the subproposer(s) and their employees.

29.3 After award of contract, any changes in subcontractors or subproposers requires prior School District written approval.

30.0 INDULGENCE

30.1 Indulgence by the District on any non-compliance by the proposer does not constitute a waiver of any rights under this RFP.

31.0 JOINT PROPOSAL

31.1 In the event multiple proposers submit a joint proposal in response to the RFP, a single proposer shall be identified as the Prime Vendor. If offering a joint proposal, Prime Vendor must include the name and address of all parties of the joint proposal. Prime Vendor shall provide all bonding and insurance requirements, execute any Contract, complete the **REQUIRED RESPONSE FORM** shown herein, have overall and complete accountability to resolve any dispute arising within this contract. Only a single contract with one proposer shall be acceptable. Prime Vendor responsibilities shall include, but not be limited to, performing of overall contract administration, preside over other proposers participating or present at District meetings, oversee preparation of reports and presentations, and file any notice of protest and final protest as described herein. Prime Vendor shall also prepare and present a consolidated invoice(s) for services performed. The District shall issue only one check for each consolidated invoice to the Prime Vendor for services performed. Prime Vendor shall remain responsible for performing services associated with response to this RFP.

32.0 SUB-CONTRACTING/MINORITY BUSINESS PARTICIPATION

32.1 The District strongly encourages the use of Minority/Woman owned business enterprises for participation as associates, joint-venturers, prime proposers, and sub-proposers in contracting opportunities.

32.2 In order to receive evaluation credit for M/WBE participants, the proposer or firm(s) to be utilized by the proposer must be certified by the District or the State of Florida at the time that the proposals are due. In order to receive evaluation credit for M/WBE participation, the proposal must identify the specific certified M/WBE firm or firms upon which evaluation credit is sought, shall indicate the extent and nature of the M/WBE's work, and shall include the percentage of the total engagement which will be received by the M/WBE firm in connection with the proposal. M/WBE participation in auxiliary services (e.g., graphics, printing and other services) is acceptable but will only be given evaluation credit if it augments the primary service of this RFP. ALL PROPOSERS MUST COMPLETE THE M/WBE SUBCONTRACTOR PARTICIPATION LETTER OF INTENT (FORM 1525). **ATTACHMENT A**.

32.3 Inquiries regarding listings of District and State Certified Minority, Woman and Disadvantaged Business Enterprises can be made to the District's Office of Diversity in Business Practices, 3300 Forest Hill Boulevard, Suite A-106, West Palm Beach, FL 33406, (561) 434-8508 or on our web site at http://www.palmbeach.k12.fl.us/mwbe. All companies using minority, woman, or disadvantaged sub-proposers will complete the M/WBE SUBCONTRACTOR PARTICIPATION SUMMARY (FORM 1526) – **ATTACHMENT B**. This form must be submitted with all requests for payment.

32.4 Minority Business Enterprise (MBE) indicates a business entity which is owned and operated by a minority. In this instance, minority or handicapped group members are citizens of the United States or lawfully admitted permanent residents who are African American, Hispanics, Women, Native Americans, Asian-Pacific, Asian-Indian, and eligible others as outlined in Administrative Order 1-18.

32.5 The District only recognizes as acceptable for certification as minority/woman business enterprises those firms, vendors, and consultants that have successfully completed the certification requirements of the State of Florida Office of Supplier Diversity or the Palm Beach County School District's Office of Diversity in Business Practices. In the case of those firms or small business enterprises that are certified with the State of Florida Office of Supplier Diversity the firm shall be required to include a copy of their certification letter or certificate. The letter or certificate will only be deemed valid if the dates for certification have not expired. Any pending application with the Palm Beach County School District or the State of Florida Office of Supplier Diversity shall not be considered as certification of the vendor making application for consideration as a M/WBE firm.

32.6 The District does not currently by implication or direct means have reciprocity with any governmental or non-governmental entity, with the exception of the State of Florida Office of Supplier Diversity for the purpose of sharing and/or acceptance of M/WBE vendors, consultants, small business enterprises for certification.

32.7 School District M/WBE Supplier Graduation – Graduation (as described in School Board of Palm Beach County Policy 6.143) from the School District M/WBE Certification shall void certification by the State of Florida. Certification shall be verified and point award shall be determined by the Office of Diversity in Business Practices.

33.0 CONTRACTOR BID REQUIREMENTS

33.1 As part of its bid or proposal, Bidder or Proposer shall provide to the School District a list of all instances within the past ten years where a complaint was filed or pending against Bidder of Proposer in a legal or administrative proceeding alleging that Bidder or Proposer discriminated on the basis of race, gender, religion, national origin, ethnicity, sexual orientation, age, or disability against its subcontractors, vendors, suppliers, or commercial customers, and a description of the status or resolution of each such complaint, including any remedial action taken.

34.0 CONTRACT DISCLOSURE

34.1 Upon the School District's request, and upon the filing of a complaint against Contractor pursuant to Palm Beach County School Board Policy 6.144, Contractor agrees to provide the School District, within sixty calendar days, a truthful and complete list of the names of all subcontractors, vendors, and suppliers that Contractor has used in the past five years on any of its contracts that were undertaken within the Palm Beach County School District relevant geographic market as defined in Palm Beach County School Board Policy 6.143, including the total dollar amount paid by Contractor for each subcontract or supply contract. Contractor agrees to fully cooperate in any investigation conducted by the School District pursuant to this Policy. Contractor understands and agrees that violation of this clause is a material breach of the contract and may result in contract termination, debarment, and other sanctions.

35.0 THE JESSICA LUNDSFORD ACT

35.1 All Contract personnel (vendors, individuals, or entities) under contract with the School Board who are permitted access on school grounds when students are present, who will have direct contact with any student of the School District, or who will have access to or control of school funds must be fingerprinted and background checked. The awardee agrees to undergo a background check and fingerprinting if he/she is an individual who meets any of the above conditions and to require that all individuals in the organization who meet any of the conditions to submit to a background check, including fingerprinting by the School District's Police Department, at the sole cost of the awardee. Awardee shall not begin providing services contemplated by this Agreement until awardee receives notice of clearance by the School District. The School Board, nor its members, officers, employees, or agents, shall not be liable under any legal theory for any

kind of claim whatsoever for the rejection of awardee (or discontinuation of awardee's services) on the basis of these compliance obligations. Awardee agrees that neither the awardee, nor any employee, agent or representative of the awardee who has been convicted or who is currently under investigation for a crime delineated in Florida Statutes §435.04 will be employed in the performance of this contract.

36.0 DISQUALIFYING CRIMES

36.1 The bidder certifies by submission of this RFP, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by the State of Florida or Federal Government. Further, bidder certifies that it has divulged, in its bid response, information regarding any of these actions or proposed actions with other governmental agencies.

36.2 A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid/RFP on a contract to provide any goods or services to a public entity, may not submit a bid/RFP on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids/RFPs on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

36.3 The awardee or any subcontractor shall not employ any persons with multiple felonies and / or crimes against children. The awardee must provide documented proof of efforts to comply with this requirement. The Owner may declare any non-compliance or lack of diligent effort by the Vendor to comply as a breach of contract and immediately terminate the services of the awardee.

36.4 The proposer(s) certifies by submission of this RFP, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any State or Federal department/agency.

37.0 USE OF OTHER CONTRACTS

37.1 The District reserves the right to utilize any other District contract, any State of Florida Contract, any contract awarded by any other city or county governmental agencies, any other school board, any other community college/state university system cooperative bid agreement, or to directly negotiate/purchase per School Board policy and/or Florida Department of Education Board Rule 6A-1.012(6) in lieu of any offer received or award made as a result of this bid, if it is in the best interest to do so. The District also reserves the right to separately bid any single order or to purchase any item on this bid if it is in its best interest to do so.

38.0 ASSIGNMENT OF CONTRACT AND/OR PAYMENT

38.1 The proposer shall not enter into subcontracts, or assign, transfer, convey, sublet, or otherwise dispose of the ensuing contract, or any or all of its right, title or interest herein, or its power to execute such contract to any person, company, or corporation without prior written consent of the District.

38.2 The proposer will be prohibited from publishing or releasing any information related to the requested services without the prior written permission of the District. All reports and other documents resulting from the ensuing contract will remain the sole property of the District.

39.0 REQUIREMENTS FOR PERSONNEL ENTERING DISTRICT PROPERTY

39.1 Possession of firearms will not be tolerated on District property; nor will violations of Federal and State laws and any applicable School Board policy regarding Drug Free Workplace be tolerated. Violations will be subject to the immediate termination provision heretofore stated in Section 19.1.

39.2 "Firearm" means any weapon (including a starter gun or antique firearm) which will, is designed to, or may readily be converted to expel a projectile by the action of an explosive; the frame or receiver of any such weapon; any destructive device; or any machine gun.

39.3 No person who has a firearm in their vehicle may park their vehicle on District property. Furthermore, no person may possess or bring a firearm on District property.

39.4 If any employee of an independent contractor or sub-contractor is found to have brought a firearm on District property, said employee will be terminated from the Board project by the independent contractor or sub-contractor. If the sub-contractor fails to terminate said employee, the sub-contractor's agreement with the independent contractor for the Board project shall be terminated. If the independent contractor fails to terminate said employee or fails to terminate the agreement with the sub-contractor who fails to terminate said employee, the independent contractor's agreement with the School Board shall be terminated.

39.5 Proposers are advised that they are responsible to ensure that no employee, agent or representative of their company who has been convicted or who is currently under investigation for a crime against children in accordance with Section 435.04 Florida Statues will enter onto any school site.

40.0 AGREEMENT

40.1 A purchase order and/or a contract will be released, after award, for any work to be performed as a result of this RFP. The proposal, response to the proposal, all attachments, any addendum released, agreement if applicable, and the corresponding purchase order will constitute the complete agreement between proposer and the District. Should there be any conflict between the terms of the RFP, response to the RFP (proposal), and the terms of the agreement (Sample Contract – ATTACHMENT E), the terms of the agreement shall be final and binding and the RFP shall control where in conflict with the proposal. If proposer requires an additional contract, then proposer should include their sample contract as an attachment to the proposal submitted for review.

41.0 POSTING OF RFP CONDITIONS / SPECIFICATIONS

41.1 This RFP will be posted for review by interested parties, at the Fulton Holland Educational Services Center, Purchasing Department, 3300 Forest Hill Boulevard, 3rd Floor, A-Wing, Suite A-323, West Palm Beach, FL, on the date of RFP electronic mailing and will remain posted for a period of 72 hours. Failure to file a specification protest within the time prescribed in §120.57(3), Florida Statutes, will constitute a waiver of proceedings under Chapter 120, Florida Statutes, and applicable Board rules, regulations and policies.

42.0 POSTING OF RFP RECOMMENDATION / TABULATIONS

42.1 RFP recommendations and tabulations will be posted at the Fulton Holland Educational Services Center, Purchasing Department for review by interested parties, at 3300 Forest Hill Boulevard, Third Floor, A-Wing Suite A-323, West Palm Beach, FL, on August 23 at 3:00 p.m., and will remain posted for a period of 72 hours. If the RFP tabulation with recommended awards is not posted by said date and time, A "Notice of Delay of Posting" will be posted to inform all proposers of the new posting date and time.

42.2 Any person adversely affected by the decision or intended decision must file a notice of protest, in writing, within 72 hours after the posting. The formal written protest shall state with particularity the facts and law upon which the protest is based. On the event the Purchasing Department receives late bid(s), the return of the sealed bid(s) will be after the posting period has expired.

42.3 Any person who files an action protesting an RFP specification, a decision or intended decision pertaining to this RFP pursuant to Section 120.57(3)(b), Florida Statutes shall post with the Purchasing Department, at the time of filing the formal written protest, a bond secured by an acceptable surety company in Florida payable to the School District of Palm Beach County in an amount equal to 1 percent (1%) of the total estimated contract value, but not less than $500 nor more than $5,000. Bond shall be conditioned upon the payment of all costs that may be adjudged against the protester in the administrative hearing in which the action is brought and in any subsequent appellate court proceeding. In lieu of a bond, a cashier's check, certified bank check, bank certified company check or money order will be acceptable form of security. If, after completion of the administrative hearing process and any appellate court proceedings, the District prevails, it shall recover all costs and charges included in the final order of judgment, including charges by the Division of Administrative Hearings. Upon payment of such costs and charges by the protester, the protest security shall be returned.

Minority Certification applications are available through the Minority Business Enterprise located at:

Office of Diversity in Business Practices
School District of Palm Beach County
3300 Forest Hill Boulevard, Suite A-106
West Palm Beach, FL 33406-5871
Phone: (561) 434-8508
http://www.palmbeach.k12.fl.us/mwbe

Are you a minority vendor certified by: (Check if appropriate)

Palm Beach County School District _____

State of Florida _____

If yes, expiration date _____

Minority Classification_____

If you are not a certified minority vendor and intend to sub-contract with a certified minority firm(s), please list the vendors and the estimated % dollar value below:

Vendor	**Estimated % Dollar Value**
_____	$_____
_____	$_____
_____	$_____

For information on other bids currently being solicited for the School District of Palm Beach County, please call the BID HOTLINE at (561) 434-8111.

Bids/RFPs are available to view and print at no charge on the Purchasing Department's Internet Hotline. Simply go to http://www.palmbeach.k12.fl.us/bids and click on those documents you are interested in. This will allow you to register, view and print the solicitation.

9 ATTACHMENTS

THE SCHOOL DISTRICT OF PALM BEACH COUNTY
PURCHASING DEPARTMENT
3300 FOREST HILL BOULEVARD, A-323 • WEST PALM BEACH, FLORIDA 33406-5813 • (561) 434-8506

ATTACHMENT A

Minority Women Business Enterprise (M/WBE) Subcontractor Participation Letter of Intent

Project Name **ASBESTOS ABATEMENT SERVICES**

Project Number **RFP 06C-005N**

Name of Bidder _____

The undersigned intends to perform work with the above project as *(check one)*

☐ Individual ☐ Partnership ☐ Corporation ☐ Joint Venture

(NOTE: If a joint venture, attach letterhead or other documentation proving relationship.)

The undersigned intends to perform work with the above BID/RFP or project as *(check one)*

☐ Subcontractor ☐ Manufacturer ☐ Supplier

The undersigned is:

☐ Certified with the School District of Palm Beach County M/WBE Coordinator
☐ Certified with the State of Florida, Department of General Services

The undersigned is *(check only one in each applicable column):*

COLUMN 1
☐ American Indian/Alaskan Native
☐ Asian/Pacific Islander
☐ Black, Non-Hispanic
☐ Hispanic
☐ Multiracial
☐ White, Non-Hispanic

COLUMN 2
☐ Physically Disabled

COLUMN 3
☐ Female
☐ Male

PARTICIPATION: The undersigned intends to perform the following work in connection with the above project.

ITEM NO.	CONTRACT (TRADE) ITEMS	AMOUNT

Name of MWBE Subcontracting Firm _____

Name and Position (type or print) _____

_____ _____
SIGNATURE *DATE*

THE SCHOOL DISTRICT OF PALM BEACH COUNTY
PURCHASING DEPARTMENT
3300 FOREST HILL BOULEVARD, A-323 • WEST PALM BEACH, FLORIDA 33406-5813 • (561) 434-8506

ATTACHMENT B

Minority Women Business Enterprise (M/WBE) Subcontractor Participation Summary

BID/RFP or Project Name **ASBESTOS ABATEMENT SERVICES**

BID/RFP or Project Number **06C-005N**

Total Bid (Base and Alternatives) _____

TO DIRECTOR OF PURCHASING DEPARTMENT

The M/WBE Subcontractor firms listed below have agreed to participate in this BID/RFP or project for the Contract (Trade) Items and the dollar amounts shown. Letter(s) on Intent *(PBSD 1525)* for each Subcontractor is (are) attached.

Those Subcontractors represented to me as M/WBE Certified by the M/WBE Coordinator are noted. Also noted are those Subcontractors not presently certified but representing themselves as M/WBE qualified for certification. For those Subcontractors, an identification Statement is attached to their Letter of Intent *(PBSD 1525)*.

CONTRACTOR	CERTIFIED		CONTRACT (TRADES) ITEMS	AMOUNT
	YES	NO		

Total M/WBE Subcontractor Participation	$
Percentage of Total Bid (Base & Alternates)	%

Contracting Firm Name _____

Name and Position (type or print) _____

_____ _____
SIGNATURE *DATE*

DRUG-FREE WORKPLACE CERTIFICATION

Preference must be given to vendors submitting a certification with their bid/proposal certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. This requirement affects all public entities of the State and becomes effective January 1, 1991. The special condition is as follows:

IDENTICAL TIE BIDS - Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program, a business shall:

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

_____

COMPANY NAME

_____

VENDOR'S SIGNATURE

Must be executed and returned with attached bid at time of bid opening to be considered.
PBSD 0580 New 3/91

ATTACHMENT D

STATEMENT OF NO BID

If you are not bidding on this service/commodity, please complete and return this form to: **Department of Purchasing, School District of Palm Beach County, 3300 Forest Hill Boulevard, West Palm Beach, FL 33406-5813.** (Please print or type, except signature)

Failure to respond may result in deletion of vendor's name from the qualified bidder's list for the School District of Palm Beach County.

COMPANY NAME: _____

ADDRESS: _____

CITY: _____STATE: _____ZIP: _____

CONTACT PERSON: _____TELEPHONE: _____

We, the undersigned, have declined to bid on your RFP No**. 06C-005N for ASBESTOS ABATEMENT SERVICES** because of the following reasons:

_____ We do not offer this product or the equivalent.

_____ Insufficient time to respond to the invitation to bid.

_____ Remove our name from this bid list only.

_____ Our product schedule would not permit us to perform.

_____ Unable to meet bond requirements.

_____ Other. (Specify below)

REMARKS: _____

_____

_____

_____

_____

SIGNATURE: _____ DATE: _____

CONTRACT BETWEEN

THE SCHOOL BOARD OF PALM BEACH COUNTY, FLORIDA

AND

_____

This contract entered into this _____ day of _____, 200_, between THE SCHOOL BOARD OF PALM BEACH COUNTY, FLORIDA, a political subdivision of the state of Florida, (hereinafter referred to as the "School Board") and _____, located at _____, (hereinafter referred to as the "Contractor") to provide **ASBESTOS ABATEMENT SERVICES**.

SECTION I - Term of Contract

This contract shall be for the period beginning _____, 200_ through _____, 200_. The contract may be renewed for _____ additional one-year periods at the annual anniversary date. The contract will not extend beyond the _____ year.

SECTION II - Services

The Contractor shall provide **ASBESTOS ABATEMENT SERVICES** per specifications in RFP 06C-005N and the corresponding proposal submitted by the Contractor, which by reference herein becomes part of this contract. All addenda issued to RFP 06C-005N, if any, are also made a part of this contract.

SECTION III - Cost of Services

The Contractor shall be paid for services as listed in the RFP and awarded for **ASBESTOS ABATEMENT SERVICES** for the School Board of Palm Beach County.

SECTION IV - Terms and Conditions

The Contractor shall have the option to terminate the contract upon written notice to the authorized representative of the School Board. Such notice must be received at least 90 days prior to the effective date of termination. The School Board shall have the option to terminate the contract without cause upon written notice to the authorized representative of the Contractor. Such notice must be received at least 30 days prior to the effective date of termination and the Contractor shall only be entitled to compensation up to the date of termination. The Contractor shall not be entitled to lost profits.

Early termination of the contract by the Contractor may prohibit the Contractor from submitting proposals for a period of three years from the date of completion of the contract. The School Board shall establish the expiration date of the contract for use thereof.

There shall be no assignment of the contract or compensation to be derived therefrom by the Contractor.

Included in this Agreement are the terms and conditions as described in the Request for Proposal, RFP 06C-005N, which are incorporated by reference herein and made a part hereof.

SECTION V – Indemnification/ Hold Harmless Agreement

Awarded proposers shall, in addition to any other obligation to indemnify the Palm Beach County School District and to the fullest extent permitted by law, protect, defend, indemnify and hold harmless the School District, their agents, officers, elected officials and employees from and against all claims, actions, liabilities, losses (including economic losses), costs arising out of any actual or alleged;

A. bodily injury, sickness, disease or death, or injury to or destruction of tangible property including the loss of use resulting therefrom, or any other damage or loss arising out of, or claimed to have resulted in whole or in part from any actual or alleged act or omission of the contractor, subcontractor, anyone directly or indirectly employed by any of them, of anyone for whose acts any of them may be liable in the performance of the work; or
B. violation of law, statute, ordinance, governmental administration order, rule or regulation by contractor in the performance of the work; or
C. liens, claims or actions made by the contractor or any subcontractor or other party performing the work.

The indemnification obligations hereunder shall not be limited to any limitation on the amount, type of damages, compensation or benefits payable by or for the contractor of any subcontractor under workers' compensation acts; disability benefit acts, other employee benefit acts or any statutory bar.

This article will survive the termination of this contract.

SECTION VI - Insurance

Insurance will be required as stated in RFP. The School Board of Palm Beach County shall be named as additional insured.

Funding out is to be included in Contracts more than a year.

SECTION VII – Cancellation of Award/Termination

In the event any of the provisions of this proposal are violated by the responder(s), the Superintendent or designee will give written notice to the responder(s) stating the deficiencies and unless the deficiencies are corrected within ten (10) days, recommendation will be made to the District for immediate cancellation. Upon cancellation hereunder, the District may pursue any and all legal remedies as provided herein and by law. In the event that it is subsequently determined that a cancellation under this paragraph was incorrect, the termination shall be converted to a termination for convenience pursuant to the next paragraph.

The District, reserves the right to terminate any contract resulting from this RFP, at any time and for no reason, upon giving 30 days prior written notice to the other party. If said contract should be terminated for convenience as provided herein, the District will be relieved of all obligations under said contract. The District will only be required to pay to the responder(s) that amount of the contract actually performed to the date of termination.

The awardee(s) will have the option to terminate the contract upon written notice to the Director of Purchasing. Such notice must be received at least 90 days prior to the effective date of termination.

Cancellation of contract by awardee may result in removal from bidders/responder list for a period of three years.

SECTION VIII - Funding Out, Termination, Cancellation

Florida School Laws prohibit School Board from creating obligations on anticipation of budgeted revenues from one fiscal year to another without year-to-year extension provisions in the agreements.

It is necessary that fiscal funding out provisions be included in all RFPs in which the terms are for periods of longer than one year.

Therefore, the following funding out provisions are an integral part of this RFP and must be agreed to by all responders:

The School Board may, during the contract period, terminate or discontinue the services covered in this ITN for lack of appropriated funds upon the same terms and conditions as set forth in Section VII Cancellation of Award / Termination.

Such prior written notice will state:

A. That the lack of appropriated funds is the reason for termination, and
B. Agreement not to replace the services being terminated with services similar to those covered in this RFP from another vendor in the succeeding funding period.

"This written notification will thereafter release the School Board of all further obligations in any way related to such equipment covered herein".

This completed statement must be included as part of any contract submitted by the successful responder. No contract will be considered that does not include this provision for "funding out".

SECTION IX – Jessica Lundsford Act

All Contract personnel (vendors, individuals, or entities) under contract with the School Board who are permitted access on school grounds when students are present, who may have direct contact with any student of the School District, or who may have access to or control of school funds must be fingerprinted and background checked. The awardee agrees to undergo a background check and fingerprinting if he/she is an individual who meets any of the above conditions and to require that all individuals in the organization who meet any of the conditions to submit to a background check, including fingerprinting by the School District's Police Department, at the sole cost of the awardee. Awardee shall not begin providing services contemplated by this Agreement until awardee receives notice of clearance by the School District. The School Board, nor its members, officers, employees, or agents, shall not be liable under any legal theory for any kind of claim whatsoever for the rejection of awardee (or discontinuation of awardee's services) on the basis of these compliance obligations. Awardee agrees that neither the awardee, nor any employee, agent or representative of the awardee who has been convicted or who is currently under investigation for a crime delineated in Florida Statutes §435.04 will be employed in the performance of this contract.

SECTION X - Default

In the event that the awarded responder(s) should breach this contract the District reserves the right to seek remedies in law and/or in equity.

SECTION XI - Debarment

The Board shall have the authority to debar a person / corporation for cause for consideration or award of future contracts. The debarment shall be for a period commensurate with the seriousness of the causes, generally not to exceed three (3) years. When the offense is willful or blatant, a longer term of debarment may be imposed, up to an indefinite period.

SECTION XII – Federal and State Tax

The District is exempt from federal and state taxes for tangible personal property. The Purchasing Department Coordinator will sign an exemption certificate submitted by the successful responder(s). Responder(s) doing business with the District will not be exempted from paying sales tax to their suppliers for materials to fulfill contractual obligations with the District, nor will any responder be authorized to use the District's Tax Exemption Number in securing such materials.

SECTION XIII - Amendment

This contract shall only be amended or modified in writing executed by both parties.

SECTION XIV - Strict Performance

The failure of either party to insist on strict performance of any covenant or conditions herein shall not be construed as a waiver of such covenants or conditions for any instance.

This contract shall be construed in accordance with the laws of the State of Florida.
If any litigation shall result from this agreement, venue shall lie in Palm Beach County, Florida.

This agreement shall not be construed against the party who drafted the same as both parties have had experts of their choosing review the same.

This agreement is binding on the parties hereto, their heirs, successor and/or assigns.

Section XV

Should either party breach this agreement, the non-breaching party shall be entitled to all remedies as provided by law and equity.

In witness whereof, this contract has been executed on the day and year first above written.

(CONTRACTOR NAME)

BY: _____

WITNESS: _____

WITNESS: _____

THE SCHOOL BOARD OF PALM BEACH COUNTY, FLORIDA

BY: _____
Thomas E. Lynch, Chairman

_____
Date

Attest: _____
Arthur C. Johnson, Ph.D., Superintendent

Reviewed and Approved for Form and Legal Sufficiency:

DATE: _____

BY: _____
Attorney

REQUEST FOR PROPOSAL NO. 06C-005N

Project**: ASBESTOS ABATEMENT SERVICES** RFP No.: 06C-005N

Corporation Name: _____ Tax FEIN Number: _____

BENEFICIAL INTEREST AND DISCLOSURE OF OWNERSHIP AFFIDAVIT

STATE OF _____ COUNTY OF _____

Before me, the undersigned authority, personally appeared, _____, ("Corporate Representative") this _____ day of _____, 200___, who, first being duly sworn, as required by law, subject to the penalties prescribed for perjury, deposes and says:

1) Corporate Representative has read the contents of this Affidavit, has actual knowledge of the facts contained herein, and states that the facts contained herein are true, correct, and complete.

2) The following is a list of every "person" (as defined in Section 1.01(3), Florida Statues to include individuals, children, firms, associates, joint adventures, partnerships, estates, trusts, business trusts, syndicates, fiduciaries, corporations and all other groups and combinations) holding 5% or more of the beneficial interest in the disclosing entity: (If more space is needed, attach separate sheet)

A. Persons or corporate entities owning 5% or more:

Name	Address	Percentage
Name	Address	Percentage
Name	Address	Percentage

B. Persons or corporate entities who hold by proxy the voting power of 5% or more:

Name	Address	Percentage
Name	Address	Percentage
Name	Address	Percentage

C. Stock held for others and for whom held:

Name	Address	Percentage
For Whom Held	Address	Percentage
Name	Address	Percentage
For Whom Held	Address	Percentage

CORPORATE REPRESENTATIVE

By:_____

SWORN TO and subscribed before me this _____ day of _____, 200___, by _____. Such person(s). (Notary Public must check applicable box):

[ ] is/are personally known to me. [ ] produced a current driver license(s). [ ] produced _____ as identification.

(NOTARY PUBLIC SEAL)

_____
Notary Public

_____
(Print, Type or Stamp Name of Notary Public)

ATTACHMENT G

RFP SUMMARY SHEET

The scope of services may include any and all services needed to provide asbestos abatement for the School District of Palm Beach County. This includes all plant, labor, materials, supplies, equipment, etc. necessary or incidental for the proper completion of work in accordance with the District's "Technical Specification and Unit Price Schedule" dated 2006 (ATTACHMENT I). Any work not specified in the Unit Price Schedule will be addressed on your RFP Summary Sheet under "Time and Material Work: Costs To Be Reimbursed."

BASE PRICE

The proposer to perform all work necessary for or incidental to construction and completion of removal and/or encapsulation of asbestos-containing materials in accordance with the specifications for the unit prices listed in the Unit Price Schedule multiplied by the multiplier shown below.

Multiplier_____ _____
(Minimum two decimal places) (in words)

MOBILIZATION CHARGE

The District will pay the following mobilization fees:

$150 per Work Authorization for greater than 24 hours notice.

$250 per Work Authorization for less than 24 hours but greater than 3 hours notice.

$500 per Work Authorization for less than 3 hours notice.

All work is to be completed under Base Price multiplier. No additional overtime charges are permitted.

TIME AND MATERIAL WORK: COSTS TO BE REIMBURSED

The proposer to provide the labor necessary to complete miscellaneous asbestos related work not otherwise specified in the Unit Price Schedule in accordance with the specifications including the General Conditions and all Addenda for the sum inserted below:

Asbestos Abatement Worker

$_____ per hour
(amount in numbers)

$_____ per hour
(amount in words)

Asbestos Abatement Supervisor

$_____ per hour
(amount in numbers)

$_____ per hour
(amount in words)

Vendor Name: _____

Labor costs will be reimbursed for workers directly employed by the contractor to perform asbestos abatement work at the site of Palm Beach County School District and shall include all taxes, insurance, contributions and customary benefits such as sick leave, medical and health benefits, holidays, vacations, pensions, travel, etc.

MATERIALS:

Cost of materials for work not otherwise specified in the Unit Price Schedule completed by time and material proposals shall include the cost of materials incorporated or consumed by actual work at Palm Beach County School District facilities multiplied by the multiplier shown below:

Multiplier_____ _____
(Minimum two decimal places) (in words)

The mobilization charges listed above shall not apply to work agreed upon and completed on a time and material basis.

VARIANCES: State any variances, however slight, to the above specifications.

_____

_____

_____

_____

_____

Vendor Name: _____

ATTACHMENT H

PROPOSAL QUALIFICATION CHECKLIST

1. A list of current abatement projects, over $10,000, with the address, dollar value, contact persons, and telephone numbers for both the owner and the designer / project administrator.

2. A list of ten completed abatement projects, over $10,000, for the past two years, including address, dates, dollar value, contact persons, and telephone numbers for both the owner and the designer / project administrator. Include any school related projects.

3. A detailed resume for the proposed General Superintendent of the Project, including copies of licenses and certifications.

4. Certification that neither the company nor its principals has been involved in litigation or arbitration involving any project in the past four years, or complete information for each case, including the following:

   A. Nature of litigation or arbitration
   B. All parties to such proceeding
   C. Names, addresses, and telephone numbers of the attorneys for each party
   D. Dates commenced and completed
   E. Disposition or current status

5. Certification that the company has not been cited in connection with an abatement project within the past four years by either the United States Occupational Safety and Health Administration (OSHA), Environmental Protection Administration (EPA), or New York State Department of Labor, or a complete description of such citations and their disposition.

6. Certification that no liens have been field against the company by subcontractors or particulars regarding such claims.

7. Name, address, contact person, and telephone number, Florida State Certifications and Licenses of current bonding company and any bonding company used in the past five years, and maximum bonding capacity in dollars.

8. Name, address, contact person, and telephone number, Florida State Certifications and Licenses of current general liability insurance company and any insurance company used in the past five years.

9. Certification that no claims have been made against any bid bond, surety bond, or general liability insurance policy in the past four years or particulars regarding such claims.

10. Listing of the following:
    A. Principal company officers and owners
    B. Parent companies, subsidiaries and holding companies
    C. Corporate or business names under which the company has done business in the past five years.
    D. Major items of equipment, including HEPA filtered fan units and vacuums, Type C respirator systems (if required) vehicles, etc.
    E. Number of personnel anticipated on project.

11. Copies of company licenses and certifications.

12. Sample of worker exposure date for similar projects.

ATTACHMENT I

COPY

ANNUAL – ASBESTOS ABATEMENT AND RELATED ACTIVITY

PALM BEACH COUNTY SCHOOL DISTRICT
ENVIRONMENTAL CONTROL OFFICE
1400 N. FLORIDA MANGO ROAD
WEST PALM BEACH, FL 33409

TECHNICAL SPECIFICATION

FEBRUARY, 2006

Set No. _____

UNIT PRICE SCHEDULE (LARGE SCALE WORK, >10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTION	UNIT COST
PIPE BOILER AND EQUIPMENT INSULATION			
PIPING	REMOVE/L.F.	02081	8.00
6" & LESS	PATCH/COVER & ENCAPSULATE/L.F. of DAMAGE	02081	4.50
	ENCAPSULATE/L.F. of DAMAGE	02081	2.00
6 1/2" - 12"	REMOVE L.F.	02081	12.00
FITTINGS			
6" & LESS	REMOVE (EACH)	02081	10.00
6 1/2" - 12"	REMOVE (EACH)	02081	20.00
BOILER	REMOVE/SQ.FT.	02081	15.00
INSULATION	PATCH, COVER & ENCAPSULATE/ SQ.FT.	15254/01526	4.50
	ENCAPSULATE/SQ.FT.	09085	2.00
BREECHING	REMOVE/SQ. FT.	02081	15.00
INSULATION	PATCH, COVER & ENCAPSULATE/ SQ.FT.	15254/01526	4.50
	ENCAPSULATE	09085	2.00
HW TANK	ENCAPSULATE/SQ.FT.	09805/01526	2.00
INSULATION	REMOVE/SQ.FT.	02081	15.00
	PATCH, COVER & ENCAPSULATE/ SQ.FT.	15254/01526	7.50
CONVERTER	REMOVE/SQ. FT.	02081	15.00
INSULATION	PATCH, COVER & ENCAPSULATE/ SQ.FT.	15254/01526	4.50
BOILER	DISMANTLE AND DISPOSAL AT COMPLETION OF ASBESTOS REMOVAL	-	1,000.00
MISCELLANEOUS MATERIALS			
FLEXIBLE DUCT CONNECTOR	REMOVE/L.F. OF DUCT PERIMETER	02081	5.00
BOILER JACKET	REMOVE (EACH)	02081	20.00
OPENINGS	PATCH, REPAIR, AND ENCAPSULATE (EACH)	15254/01529	15.00
CEILING TILE	REMOVE LIFTOUT/SQ.FT.	02081	2.00
	REMOVE ADHERED/SQ.FT.	02081	3.00
	REMOVE Z SPLINE/SQ.FT.	02081	2.00

UNIT PRICE SCHEDULE (LARGE SCALE WORK, >10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTION	UNIT COST
MISCELLANEOUS MATERIALS (CON'T)			
ROOFING MATERIAL (FRIABLE)	REMOVE/SQ.FT. CUT, PATCH, REPAIR/SQ.FT.	02086 01046	2.00 7.50
CEMENT BOARD (includes covering)	REMOVE/SQ.FT. (INTERIOR) REMOVE/SQ.FT. (EXTERIOR)	02085/02086 02085/02086	3.00/2.00 15.00/3.00
CEMENT SHINGLES	REMOVE/SQ.FT. CUT, PATCH, REPAIR/SQ.FT.	02086/01529 01046	3.00 7.50
FIRE DOOR	REMOVE DOOR (EACH)	02081	100.00
LAB TABLES	REMOVE/SQ.FT.	02081	5.00
RESILIENT FLOOR COVERING (includes mastic, baseboards and 1st layer of floor covering)	REMOVE (SQ.FT.)	02085	3.00
RESILIENT FLOOR COVERING (additional layers each)	REMOVE (SQ.FT.)	02085	.50
RESILIENT FLOOR COVERING (includes all wood subfloor and all additional layers of floor tile)	REMOVE (SQ.FT.)	02081	5.00
FIBROUS BOARD (WALL BOARD etc)	REMOVE (SQ.FT.)	02081	3.00
CEILING MOUNTED AIR HANDLING UNIT	REMOVE/CLEAN & DECONTAMINATE, STORE (EACH)	01712	250.00
DRYWALL PARTITIONS	REMOVE (SQ.FT.)	02063/02081	2.00/3.00
HARD PLASTER PARTITIONS	REMOVE (SQ.FT.)	02063/02081	2.50/3.50
CARPETING	REMOVE (SQ.FT.)	02063	.75

UNIT PRICE SCHEDULE (LARGE SCALE WORK, >10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTION	UNIT COST
MISCELLANEOUS MATERIALS (CON'T)			
FIBROUS GLASS INSULATION	REMOVE (SQ.FT.)	02063	1.00
LIGHT FIXTURES	REMOVE/CLEAN & DECONTAMINATE (EACH) STORE	02081	25.00
OTHER CEILING MOUNTED EQUIP.	REMOVE/CLEAN & DECONTAMINATE (EACH) EXIT SIGNS, SMOKE DETECTORS	02081	10.00
SCAFFOLDING	INSTALL/SECTION/MONTH INCLUDES, RAILING & DECKING	01503	20.00
INSTALLATION OF DECON UNIT	INSTALL DECON FOR 02081 REMOVALS (EACH >1500 L.F. OR SQ.FT) PERSONNEL & EQUIPMENT	01563	2,500.00
INSTALLATION OF DECON UNIT	INSTALL DECON FOR 02081 REMOVALS (>260 L.F., 160 SQ.FT. AND <1500 L.F. OR SQ.FT.)	01563	1,250.00
INSTALLATION OF REMOTE DECON UNIT	INSTALL DECON FOR 02081 REMOVALS (>10 S.F./25 L.F. & <260 L.F., 160 S.F.)	01563	500.00
INSTALLATION OF TUNNEL BETWEEN WORK AREA (UNSECURED OR EXTERIOR AREA)	INSTALL/LN. FT.	01563	30.00
INSTALLATION OF TUNNEL BETWEEN WORK AREA (SECURED AREA)	INSTALL/LN. FT.	01563	15.00
CERAMIC FLUE	REMOVE/L.F.	02085	7.00
AC PIPE 6" & LESS	CUT & DISPOSE/L.F. (INTERIOR OR EXTERIOR)	2081/2084	8.00
6"-12"	CUT & DISPOSE/L.F. (INTERIOR OR EXTERIOR)	2081/2084	10.00

UNIT PRICE SCHEDULE (LARGE SCALE WORK, >10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTION	UNIT COST
MISCELLANEOUS MATERIALS (CON'T)			
12"-OVER	CUT & DISPOSE/L.F. (INTERIOR OR EXTERIOR)	2081/2084	12.00
CONTAMINATED SOIL REMOVE/CU.YD.	ACCESS <18 INCHES ACCESS >18 INCHES	02082	40.00 30.00
ENCAPSULATION OF SOIL	ENCAPSULATE/SQ.FT.	09805	3.00
CLEAN	(SQ.FT.) DEBRIS IN ROOM	01712	1.50
HEPA VACUUMS	CLEAN & REPLACE BAGS (EA.) (BAGS PROVIDED BY OWNER)	01529	50.00/ UNIT
HVAC DUCT (METAL) MASTIC	INTERIOR/EXTERIOR REMOVE/LN. FT.	02085/02086	6.00
HVAC DUCT (FIBERGLASS) MASTIC	INTERIOR/EXTERIOR	02085/02086	3.00
HVAC DUCT INSULATION (BITUMEN, FOIL, ETC.)	INTERIOR/EXTERIOR	02085/02086	2.00
HVAC PIPE WRAP (BITUMEN, FOIL, ETC.)	INTERIOR/EXTERIOR	02085/02086	1.50
ARCHITECTURAL FINISHES			
ACOUSTIC PLASTER	REMOVE FROM SCRATCH COAT (SQ.FT.)	02081	7.00
ACOUSTIC PLASTER	REMOVE WITH METAL LATHE (SQ.FT.)	02081	10.00
ACOUSTIC PLASTER	ENCAPSULATE (SQ.FT.)	09085	3.00

UNIT PRICE SCHEDULE (LARGE SCALE WORK, >10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTION	UNIT COST
ARCHITECTURAL FINISHES (CON'T)			
SPRAYED-ON FIREPROOFING	REMOVE FROM METAL OR CONCRETE DECK (SQ.FT.)	02081	7.00
CEMENTITIOUS SCRATCH/FINISH COAT	*REMOVE FROM METAL OR CONCRETE DECK (SQ. FT.) INTERIOR OF BUILDING	02081	35.00
CEMENTITIOUS SCRATCH/FINISH COAT	*REMOVE FROM METAL OR CONCRETE DECK (SQ. FT.) EXTERIOR OF BUILDING	02081	40.00

* **For extremely hard material. Determination to use this Unit Cost must be approved by Owner or Owner's Representative.**

UNIT PRICE SCHEDULE (OPERATIONS & MAINTENANCE WORK <10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTIONS	UNIT COST
PIPE BOILER AND EQUIPMENT INSULATION			
PIPING			
6" & LESS	REMOVE (L.F.)	01529	8.00
	PATCH/COVER & ENCAPSULATE (L.F.) of DAMAGE	15254/01529	4.50
	ENCAPSULATE/L.F. of DAMAGE	09085/01529	2.00
6 1/2" - 8"	REMOVE L.F.	01529	12.00
	FITTINGS		
LESS THAN 6"	REMOVE (EACH)	01529	30.00
6 1/2" - 8"	REMOVE (EACH)	01529	20.00
BOILER INSULATION	REMOVE (SQ.FT.)	01529	15.00
	PATCH, COVER & ENCAPSULATE/ (SQ.FT.)	15254/01529	4.50
	ENCAPSULATE (SQ.FT.)	09805	2.00
BREECHING INSULATION	REMOVE (SQ.FT.)	01529	15.00
	PATCH, COVER & ENCAPSULATE/ (SQ.FT.)	15254/01529	4.50
HW TANK INSULATION	ENCAPSULATE (SQ.FT.)	09805/01529	2.00
	REMOVE (SQ.FT.)	01529	15.00
	PATCH, COVER & ENCAPSULATE/ (SQ.FT.)	15254	7.50
	ENCAPSULATE/SQ.FT.	09805/01529	2.00
CONVERTER INSULATION	REMOVE (SQ.FT.)	01529	15.00
	PATCH, COVER & ENCAPSULATE/ (SQ.FT.)	15254/01529	4.50
MISCELLANEOUS MATERIALS			
FLEXIBLE DUCT CONNECTOR	REMOVE/L.F. OF DUCT PERIMETER	01529	5.00
BOILER JACKET OPENINGS	PATCH, REPAIR & ENCAPSULATE (EACH)	15254/01529	30.00

UNIT PRICE SCHEDULE (OPERATIONS & MAINTENANCE WORK <10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTIONS	UNIT COST
MISCELLANEOUS MATERIALS (CON'T)			
CEILING TILE	REMOVE LIFTOUT/SQ.FT. REMOVE ADHERED/SQ.FT. REMOVE Z-SPLINE/SQ.FT. (CLEAN & DECONTAMINATE)	01529 01529 01529	8.00 10.00 10.00
ROOFING MATERIAL (FRIABLE)	REMOVE/SQ.FT.	02086	5.00
CEMENT ASBESTOS MATERIAL (includes covering)	REMOVE/SQ.FT. PATCH, COVER, ENCAPSULATE\SQ. FT.	01529 15254/01529	3.50 5.00
CHIMNEY SEALANT	REMOVE & RECAULK (PER CHIMNEY)	01529	15.00
LAB TABLES	REMOVE/SQ.FT.	01529	7.00
ROPE GASKETS (BOILER GASKETS)	REMOVE (LINEAR FT.)	01529	5.00
VINYL FLOOR TILE	REMOVE (SQ.FT.) SQ.FT. INCLUDES MASTIC, BASEBOARDS	01529	8.00
VINYL FLOOR TILE (includes subfloor)	REMOVE (SQ.FT.)	01529	10.00
FIBROUS BOARD (WALL BOARD etc)	REMOVE (SQ.FT.)	01529	4.00
LIGHT FIXTURES	REMOVE/CLEAN & DECONTAMINATE (EACH) REINSTALL	01529	25.00
LIGHT BULBS	CHANGE BULBS (FLUORESCENT/ INCANDESCENT)/FIXTURE MINIMUM 3 FIXTURES	01528	15.00
CERAMIC FLUE	REMOVE/L.F.	01529	14.00
AC PIPE	CUT AND DISPOSE/LN.FT. ALL SIZES	2081/2084	30.00
CONTAMINATED SOIL	ACCESS <18 INCHES ACCESS >18 INCHES REMOVE/CU.FT.	02082	40.00 30.00

UNIT PRICE SCHEDULE (OPERATIONS & MAINTENANCE WORK <10 SF OR 25 LF)

ITEM	ACTION	SPECIFICATION SECTIONS	UNIT COST
MISCELLANEOUS MATERIALS (CON'T)			
ENCAPSULATION OF SOIL	ENCAPSULATE/SQ. FT.	09805	4.00
CLEAN	(SQ.FT.) DEBRIS IN ROOM	01712/01529	1.50
INSTALLATION OF REMOTE BY 02081 DECON UNIT	INSTALL REMOTE DECON AS REQUIRED	01563	500.00
ARCHITECTURAL FINISHES			
ACOUSTIC PLASTER	REMOVE FROM SCRATCH COAT/SQ.FT.	02081	21.00
ACOUSTIC PLASTER	REMOVE FROM METAL LATHE/SQ.FT.	02081	30.00
ACOUSTIC PLASTER	ENCAPSULATE/SQ.FT.	09085	9.00
SPRAY-ON FIREPROOFING	REMOVE FROM METAL OR CONCRETE DECK/SQ.FT.	02081	21.00
CEMENTITIOUS SCRATCH/FINISH COAT	*REMOVE FROM METAL OR CONCRETE DECK/SQ.FT.	02081	40.00

*** DECISION TO USE THIS UNIT PRICE IS AT THE DISCRETION OF THE OWNER OR OWNER'S REPRESENTATIVE.**

NOTE: **If Unit Prices for particular items are not mentioned under Operations & Maintenance Work, the Large Scale price shall apply.**

TABLE OF CONTENTS OF ALL ASBESTOS ABATEMENT SPECIFICATIONS SECTIONS

DIVISION 1 - GENERAL REQUIREMENTS

DIVISION 2 - SITE WORK

DIVISION 9 - FINISHES

DIVISION 15 - MECHANICAL

SECTION 01013 - SUMMARY OF THE WORK - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

PROJECT/WORK IDENTIFICATION:

General: Project name is Palm Beach County Schools 2001 Annual Asbestos Abatement and Related Work as shown on Contract Documents prepared by Owner's Representative, REP Associates, Inc. Specifications are dated September, 2001.

Contract Documents: Indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:

Applicable codes and regulations.

Notices and permits.

Existing site conditions and restrictions on use of the site.

Work to be performed concurrently by the Owner.

Work to be performed subsequent to work under this Contract.

Requirements for partial Owner occupancy prior to substantial completion of the Contract Work.

Summary by References: Work of the Contract can be summarized by references to the Contract, General Conditions, Specification Sections, Drawings, addenda and modifications to the contract documents issued subsequent to the initial printing of this project manual and including but not necessarily limited to printed material referenced by any of these. Work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions and other forces outside the contract documents.

SCOPE OF WORK:

The work is to perform asbestos abatement activities upon request by the Owner. All work performed will be carried out in conformance with the specific technical sections indicated on the Unit Price Schedule as well as technical specification sections required by the work, General Conditions, Special Conditions and other elements of this contract.

The scope of work for each activity is defined by the Work Authorization Form in accordance with the Unit Price Schedule. By signing the Work Authorization Form or performing the work, the Contractor agrees to the specific quantities indicated. The contractor waives any claim for additional work unless approved by change order as set forth in Article 7 of the General Conditions.

The Sum for Mobilization set forth in the agreement will be a single charge to the Owner for all work indicated on the Work Authorization Form. Unit Price Schedules will be adjusted by the Multiplier set forth in the agreement.

All work will be initiated and completed within the allotted time stated upon receipt of an executed Work Authorization Form.

The work includes the removal, encapsulation, or repair of asbestos- containing materials according to the requirements of this specification.

General and Administrative Requirements: are set forth in the following specification sections:

01013 Summary of the Work - Asbestos Abatement
01028 Application for Payment
01043 Project Coordination - Asbestos Abatement
01091 Definitions and Standards - Asbestos Abatement
01301 Submittals
01601 Materials and Equipment - Asbestos Abatement
01632 Product Substitutions
01701 Project Closeout - Asbestos Abatement

Abatement Work: requirements are set forth in the following specification sections, listed here according to the sequence of the work:

01092 Codes, Regulations and Standards - Asbestos Abatement: 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.

01503 Temporary Facilities - Asbestos Abatement: sets forth the support facilities needed such as electrical and plumbing connections for the decontamination unit and office space for the Project Administrator.

01526 Temporary Enclosures: details the requirements for the sheet plastic barriers isolating the work area from the balance of the building.

01410 Test Laboratory Services - describes air monitoring by owner so that the building beyond the work area will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of the Contractor.

01563 Decontamination Units: explains the setup and operation of the personnel and material decontaminations units.

01513 Temporary Pressure Differential and Air Circulation System: sets forth the procedures to set up pressure differential isolation and ventilation of the work area.

01560 Worker Protection - Asbestos Abatement: describes the equipment and procedures for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

01562 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:

02063 Demolition of Asbestos Contaminated Materials
02081 Removal of Asbestos-Containing Materials
02082 Removal of Asbestos Contaminated Soil
02084 Disposal of Asbestos-Containing Waste Material
02085 Removal of Interior Non-Friable Asbestos-Containing Materials
02086 Removal of Exterior Non-Friable Asbestos-Containing Materials

Encapsulation Procedures: are described in the following:

09805 Encapsulation of Asbestos-Containing Materials

Decontamination of the Work Area: after completion of abatement work is described in the following sections:

01712 Cleaning and Decontamination Procedures: sets forth procedures to be used on contaminated objects and rooms which are not part of an abatement work area.

01711 Project Decontamination: describes the sequence of cleaning and decontamination procedures to be followed during removal of the sheet plastic barriers isolating a work area.

01714 Work Area Clearance: describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.

01701 Project Closeout: details the closeout procedures to end the project once abatement work is complete including final paperwork requirements.

Repair and Maintenance: Procedures are specified in the following sections. Generally these involve activities where asbestos fibers are collected at the point of generation so that enclosure of an area with plastic barriers is unnecessary:

01527 Regulated Areas
01529 Operations & Maintenance Work
01561 Worker Protection - Repair and Maintenance

Separate Contracts are being issued for bid to perform work at the site which will follow the work of this Contract. Separate contract work can be summarized as follows:

Reconstruction and renovation following asbestos abatement.

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 building's HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris. Provide name of any and all waste haulers to be used during the term of this contract. The plan must be approved by the Owner's Representative prior to commencement of work.

INSPECTION:

Prior to commencement of work, inspect areas in which work will be performed. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to Owner's Representative prior to starting work.

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 all 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.

STOP WORK:

If the Owner, the Owner's Representative, or the Project Administrator presents a written stop work order immediately and automatically stop all work. Do not recommence work until authorized in writing by Owner's Representative.

ASBESTOS-CONTAINING MATERIALS:

The following asbestos-containing materials are known to be present at the worksite. If any other materials are found, which are suspected of containing asbestos, notify immediately Owner's Representative.

Item	Asbestos Content	Other Components
FIREPROOFING		
Fireproofing	25-35% chrysotile	Rock wool, cellulose
Fireproofing	25-35% amosite 5-8% chrysotile	Rock wool Vermiculite

Item	Asbestos Content	Other Components
SURFACE TREATMENT:		
Acoustic plaster	3-22% chrysotile	Calcite, cellulose, textile fibers, fibrous glass, perlite, pumice, plaster, quartz, vermiculite, talc
BOILER AND PIPE INSULATION		
PIPING:		
Cold water supply aircell	40-90% chrysotile	Lizardite
Hot water pipe aircell	40-75% chrysotile	Cellulose
Heater supply piping	22-26% chrysotile 5-6% amosite	Refractory Refractory
Heater return piping	18-22% chrysotile	Refractory
FITTINGS:		
Heating supply	50-85% chrysotile	Refractory
Steam heat	10-15% chrysotile	Quartz refractory
EQUIPMENT:		
Boiler 10-35% chrysotile	Refractory	
Breeching	35-40% chrysotile 3-5% amosite	Refractory
Hot water tank	20-35% chrysotile	Refractory

Item	Asbestos Content	Other Components
EQUIPMENT: (cont'd)		
Convertor	20-25% amosite 20-25 chrysotile	Refractory
OTHER MATERIALS		
Flexible duct connectors	20-60% chrysotile	Cellulose
Boiler jacket openings	10-35% chrysotile	Vermiculite, gypsum
Ceiling tile adhered	4-6% chrysotile	Rock wool
Ceiling tile liftout	2-7% amosite	Rock wool
Ceiling tile z-spline	2-10% amosite	Rock wool
Cement Board	4-10% chrysotile	Portland cement, gypsum
Ceramic Chimney	2-10% chrysotile	Refractory
Chimney Sealant	70-80% chrysotile	Refractory
Fire door	75% chrysotile 2-5% amosite	Refractory
Lab Tables	6-8% chrysotile	Talc, calcite, PVC
Ring Gaskets	75-80% chrysotile	Refractory
Rope Gaskets	90-100% chrysotile	
Vinyl Floor Tile	2-20% chrysotile	PVC, calcite
Fibrous Board	30-35% chrysotile	Cellulose, gypsum

CONTRACTOR USE OF PREMISES:

General: 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.

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 construction.

Keep existing driveways and entrances serving the premises clear and available to the Owner and his employees at all times. 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 the areas indicated. If additional storage is necessary obtain and pay for such storage off site.

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.

Contractor's Use of the Existing Building: Maintain existing building in a safe and weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

Keep public areas such as hallways, stairs, elevator 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; comply with Owner's policy regarding smoking elsewhere on the premises.

OWNER OCCUPANCY:

Partial Owner Occupancy: The Owner reserves the right to place and install equipment as necessary in areas of the building in which all 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.

All Contractor personnel must have shirts with company logo or identification badges which have recent photos, names and social security numbers on them. Shirts other than company logo shirts **may not** be offensive in nature as determined by the Owner or Owner's Representative.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01013

SECTION 01028 - APPLICATIONS FOR PAYMENT - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS

General provisions of Contract, including General and other Division-1 Specification Sections, apply to this Section.

SUMMARY

This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.

APPLICATIONS FOR PAYMENT

Each Application for Payment shall be consistent with previous applications and payments as certified by the Owner's Representative and paid for by the Owner.

The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

Payment Application Times: The date for each progress payment is the 15th day of each month. The period of construction Work covered by each Application for Payment is the period ending 15 days prior to the date for each progress payment and starting the day following the end of the preceding period. The application for payment is separate for each executed work authorization form.

For projects that run fifteen (15) days or less, make only one application for payment for 100% completion as verified by Owner's Representative.

Payment Application Forms: Use forms provided by the Owner for Applications for Payment.

Application Preparation: Complete every entry on the form, including notarization and execution by person authorized to sign legal documents on behalf of the Owner. Incomplete applications will be returned without action.

Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.

Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

Transmittal: Submit (1) executed copy of each Application for Payment to the Owner's Representative by means ensuring receipt within 24 hours; copy shall be complete, including waivers of lien and similar attachments, when required.

Transmit each copy with a transmittal form listing attachments, and recording appropriate information related to the application in a manner acceptable to the Owner's Representative.

Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to Owner.

Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; this application shall reflect any Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

Administrative actions and submittals that shall proceed or coincide with this application include:

Occupancy permits and similar approvals.

Warranties (guarantees) and maintenance agreements.

Change-over information related to Owner's occupancy, use, operation and maintenance.

Final cleaning.

List of incomplete Work, recognized as exceptions to Owner's Representative Certificate of Substantial Completion.

Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment Application for Payment. The following must be submitted within 30 days of project completion:

Completion of Project closeout requirements.

Completion of items specified for completion after Substantial Completion.

Assurance that unsettled claims will be settled.

Assurance that Work not complete and accepted will be completed without undue delay.

Transmittal of required Project construction records to Owner.

Disposal receipts, bills of lading and other required documentation of transportation and disposal of asbestos-containing waste.

Proof that taxes, fees and similar obligations have been paid.

Removal of temporary facilities and services.

Removal of surplus materials, rubbish and similar elements.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01028

SECTION 01043 - PROJECT COORDINATION - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to this section.

SUMMARY

This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:

Administrative and supervisory personnel.
Progress Meetings (if necessary).
Pre-Construction Conference.
Daily Log.
Special reports.
Contingency Plans.
Notifications to other entities at job site.

Requirements for the Contractor's Construction Schedule are included in Section "Submittals".

ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

General Superintendent: Provide a full-time General Superintendent who is 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 Contractor's representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to asbestos-containing materials.

Experience and Training: The General Superintendent must have completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures, and have had a minimum of two (2) years on-the-job training in asbestos abatement procedures.

Competent Person: The General Superintendent is to be a Competent Person as required by OSHA in 29 CFR 1926.

Accreditation: The General Superintendent is to be accredited as an Asbestos Abatement Supervisor in accordance with the AHERA regulation 40 CFR Part 763, Subpart E, Appendix C.

PROGRESS MEETINGS:

General: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, Owner's Representative will hold general progress meetings as required. These meeting will be scheduled, where possible, at time of 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:

An initial progress meeting, recognized as "Pre-Construction Conference" will be convened by the Owner's Representative prior to start of any major work and where requested by the Owner. Meet at project site, or as otherwise directed with General Superintendent, Owner, Owner's Representative, Project Administrator, and other entities concerned with asbestos abatement work.

This is an organizational meeting, to review responsibilities and personnel assignments, to locate the containment and decontamination areas; and temporary facilities including power, light, water etc.

DAILY LOG:

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, brief discussion

Visitations; authorized and unauthorized

Personnel, by name, entering and leaving the work area

Special or unusual events, i.e. Barrier breaching, Equipment failures, accidents

Air monitoring tests and test results

Documentation of Contractor's completion of the following:

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

Removal of any sheet plastic barriers

Contractors inspections prior to spray back, lock back, encapsulation, enclosure or any other operation that will conceal the condition of asbestos-containing materials or the substrate from which such materials have been removed.

Removal of waste materials from work area

Decontamination of equipment (list items)

Contractors final inspection/final air test analysis.

Provide two (2) copies of this log to Project Administrator on a daily basis.

Submit copies of this log at final closeout of project as a project close out submittal.

SPECIAL REPORTS:

General: Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to Owner's Representative and others affected by occurrence.

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.

Report Discovered Conditions: When an unusual condition of the building is discovered during the work (EG. leaks, termites, corrosion) prepare and submit a special report indication condition discovered.

CONTINGENCY PLAN:

Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, pressure differential system failure, supplied air system failure, or any other event that may require modification or abridgement 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 Personnel Decontamination Unit telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

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

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

SUBMITTALS

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

Contingency Plans: for emergency actions.

Telephone Numbers: and location of emergency services.

Notifications: sent to other entities at the work site. (Form Only)

Notifications: sent to emergency service agencies. (Form Only)

Accreditation: submit evidence in form of training course certificate of accreditation of general superintendent as an asbestos abatement supervisor.

Staff Names: Within 15 days of Notice to Proceed, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01043

SECTION 01046 - CUTTING AND PATCHING ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to this section.

PART 2 - PRODUCTS

Provide local exhaust ventilation systems that comply with ANSI 29.2-1971.

Products for Encapsulation are specified in Section 09805.

PART 3 - EXECUTION

Before beginning work of this section, comply with:

Section 01527 - Regulated Areas
Section 01561 - Worker Protection - Repair & Maintenance
Section 01562 - Respiratory Protection

Perform cutting, drilling, abrading, or otherwise penetrating any asbestos-containing material in a manner to minimize the dispersal of asbestos fibers into the air.

Provide adequate local exhaust to capture fibers produced by cutting, drilling, or abrading by means of an approved High Efficiency Particulate Absolute (HEPA) filter vacuum. Use specialized equipment such as drills or saws having integral ventilation hoods which are connected to a HEPA vacuum with a flexible hose. Handle and dispose of HePA filters as contaminated material. See Section 02084.

Thoroughly saturate absorbent surfaces of asbestos-containing material to be penetrated with a penetrating type encapsulant. Allow encapsulant to penetrate to substrate before working on materials.

Seal edges of asbestos-containing material exposed by cutting, drilling, or abrading, etc. with two (2) coats of an approved penetrating encapsulant applied in accordance with manufacturers' printed instruction for use of the encapsulant as an asbestos coating and requirements of Section 09805.

END OF SECTION - 01046

SECTION 01091 - DEFINITIONS AND STANDARDS - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification Sections, apply to this Section.

SUMMARY

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.

General Requirements: The provisions or requirements of Division-1 sections apply to entire work of Contract and, where so indicated, to other elements which are included in project.

DEFINITIONS:

General: Definitions contained in this Article are not necessarily complete, but are general to the extent that they are not defined more explicitly elsewhere in the Contract Documents.

Indicated: refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Owner's Representative", "requested by the "Owner's Representative", and similar phrases. However, no implied meaning shall be interpreted to extend the Owner's Representative's responsibility into the Contractor's area of construction supervision.

Approve: The term "approved," where used in conjunction with the Owner's Representative's action on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Architect stated in General and 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: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations."

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

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

Installer: An "Installer" is an entity engaged by the Contractor, either as an employee, subcontractor or sub-subcontractor for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

The term "experienced," when used with the term "Installer" means having a minimum of 5 previous Projects similar in size and scope to this Project, and familiar with the precautions required, and has complied with requirements of the authority having jurisdiction.

Project Site is the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other construction as part of the Project. The extent of the Project Site is shown on the Drawings, and may or may not be identical with the description of the land upon which the Project is to be built.

Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on, and, if required, to interpret, results of those inspections or tests.

Owner's Representative: is the entity described as Project Consultant. All references to Project Consultant in the contract documents in all cases refer to the Owner's Representative. The Owner's Representative will represent the Owner during construction and until final payment is due. The Owner's Representative will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Owner's Representative.

Project Administrator: The Project Administrator is a full time representative of the Owner at the job site with authority to stop the work upon verbal order if requirements of the contract documents are not met, or if in the sole judgement of the Project Administrator, Owner's Representative, Owner, the interests 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.

DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT:

Accredited or accreditation when referring to a person or laboratory means that such person or laboratory is 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 refractory 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 to decrease the surface tension to 35 or less dynes.

Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (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% by weight of asbestos of any type or mixture of types.

Asbestos-Containing Building material (ACBM): means surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on 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: means 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, the Owner's Representative, testing lab personnel, the Architect/Engineer, emergency personnel 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 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: A properly labeled 6 mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site.

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 to minimize fiber release during removal of asbestos-containing materials rather then for in situ encapsulation.

Encapsulation: Treatment of asbestos-containing materials, with an encapsulant.

Enclosure: 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 any amount of asbestos by weight, 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 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 particulate air filter: (HEPA) refers to a filtering system capable of trapping and retaining 99.97 percent of all monodispersed particles 0.3 um in diameter or larger.

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.

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

Pressure Differential and Ventilation System: A local exhaust system, utilizing HEPA filtration capable of maintaining a pressure differential with the inside of the work area at a lower pressure than any adjacent area, and which cleans recirculated air or generates a constant air flow from adjacent areas into the work area.

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: means 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.

Resilient Flooring: Includes asphalt and vinyl floor tile and sheet vinyl covering with its felt backing.

Subcontractor: For the purposes of this contract does not include a licensed waste hauler.

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.

INDUSTRY STANDARDS

Applicability of Standards: Except where Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into Contract Documents. Such standards are made a part of the Contract Documents by reference. Individual Sections indicate which codes and standards the Contractor must keep available at the Project Site for reference.

Referenced industry standards take precedence over standards that are not referenced but recognized in the construction industry as applicable.

Unreferenced industry standards are not directly applicable to the Work, except as a general requirement of whether the Work complies with recognized construction industry standards.

Publication Dates: 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, Contractor or authority having jurisdiction, submit a Change Order proposal where applicable code or standard has been revised and reissued after the date of the Contract Documents and before performance of Work affected. The Owner's Representative will decide whether to issue a Change Order to proceed with the updated standard.

Conflicting Requirements: Where compliance with two or more standards is specified, and they establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Owner's Representative for a decision before proceeding.

Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the Owner's Representative for decision before proceeding.

Copies of Standards: Each entity engaged in construction 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 performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

Although copies of standards needed for enforcement of requirements may be part of required submittals, the Owner's Representative reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. 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, 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
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103 215/299-5400
AWCI	Association of the Wall and Ceiling Industries-International 25 K Street, NW Washington, DC 20002 202/783-2924
CFR	Code of Federal Regulations Available from Government Printing Office; Washington, DC 20402 (usually first published in Federal Register) 202/783-3238
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 Seventh Street, SW Washington, DC 20590 202/426-4000
EPA	Environmental Protection Agency 401 M Street, 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 Avenue Evanston, IL 60201 312/491-1744
GSA	General Services Administration F Street and 18th Street, NW Washington, DC 20405 202/655-4000
MIL	Military Standardization Documents (U.S. Dept. of Defense) Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
NBS	National Bureau of Standards (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, DC 20402 202/783-3238
PS	Product Standard of NBS (U.S. Dept. of Commerce) Government Printing Office Washington, DC 20402 202/783-3238
UL	Underwriters Laboratories 333 Pfingsten Road Northbrook, IL 60062 312/272-8800

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

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

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

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 - 01091

SECTION 01092 - CODES, REGULATIONS, AND STANDARDS

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Special Conditions and other Division-1 Specification sections, apply to 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 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.

CODES AND REGULATIONS

General Applicability of Codes and 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 Project Consultant 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.

Royalties and Patents: Contractor is responsible for complying with all patents pertaining to processes he/she elects to use. The Contractor shall indemnify the Owner and Consultant for any and all damages arising out of his/her failure to comply.

State Requirements: Abide by all State requirements which govern asbestos abatement work or transportation and disposal of asbestos waste materials including, but not limited to, the most recent amendments of Chapter 469 of the Florida Statutes (Licenses of Asbestos Consultants and Contractors).

All asbestos training courses and providers shall meet the current requirements of Chapter 61E1-2.006, Florida Administrative Code, as administered by the State of Florida, Department of Business and Professional Regulation.

Federal Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

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

29 CFR 1910, et.,al.
Occupational Exposure to Asbestos, Final

Respiratory Protection - General Industry
Title 29, Part 1910, Section 134 of the
Code of Federal Regulations

Respiratory Protection - Construction Industry
Title 29, Part 1926, Section 103, of the
Code of Federal Regulations

Access to Employee Exposure and Medical Records
Title 29, Part 1910, Section 20 of the
Code of Federal Regulations

Bloodborne Pathogens
Title 29, Part 1910, Section 1030 of the
Code of Federal Regulations

Hazard Communication
Title 29, Part 1910, Section 1200 of the
Code of Federal Regulations

Specifications for Accident Prevention Signs and Tags
Title 29, Part 1910, Section 145 of the
Code of Federal Regulations

Excursion Limit for Short Duration Exposure to
Asbestos, 53 FR 35610 of the Code of Federal Regulations

The control of hazardous energy (lockout/tagout), Title 29, Part 1910 Section 147 and lockout and tagging of circuits (electrical), Title 29, Part 1926, Section 417 of the Code of Federal Regulations.

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

Hazardous Substance Rule/Hazardous Material Transportation Act,
49, Subtitle B, Chapter 1, Subchapter C, Parts 171-180. Code of Federal Regulations

Federal Register, Vol. 55, No. 246, Entitled 49 CFR Part 107,
Performance Oriented Packaging Standards, Changes to Classification,
Hazard Communication, Packaging and Handling Requirements based on
UN Standards and Agency Initiation, "Final Rule"

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

Asbestos Abatement Projects; Worker Protection Rule
Title 40 Part 763, Sub-part G of the
Code of Federal Regulations

Asbestos Abatement Project Rule
40 CFR Part 762
CPTS 62044, FRL 2843-9

Federal Register, Vol. 50 No. 134 - July 12, 1985
P28530-28540

Hazard Emergency Response Act (AHERA) Regulation
Asbestos-Containing Materials in Schools Final Rule & Notice
Title 40, Part 763, Sub-part E of the
Code of Federal Regulations

Training Requirements of (AHERA) Regulation
Asbestos-Containing Materials in Schools Final Rule & Notice
Title 40, Part 763, Sub-part E, Appendix C of the
Code of Federal Regulations

National Emission Standard for Hazardous Air Pollutants (NESHAPS)
National Emission Standard for Asbestos
Title 40, Part 61, (Amended)
Dated November 20, 1990
Code of Federal Regulations

State Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

FLORIDA -

Florida Department of Environmental Regulations
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Department of Professional Regulation
Requirements for license as an Asbestos Consultant or Contractor
pursuant to F.S. 469.004 amended by Chapter 61E1, Florida Administrative Rule

Local Requirements: Abide by all local requirements which govern asbestos abatement work and/or hauling and disposal of asbestos waste materials.

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 areas adjacent to the site. The Contractor shall hold the Owner and Project Consultant harmless for failure to comply with any applicable standard on the part of himself, his employees, or his subcontractors.

Standards: which apply to 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 Z88.2-80

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

Specification for Encapsulants for Friable Asbestos-Containing Building Materials
Proposal P-189

NOTICES:

STATE AND LOCAL AGENCIES:

If Requested by Owner, Send Written Notification as required by Florida state regulations prior to beginning any work on asbestos-containing materials.

The notification of an asbestos renovation project shall be postmarked or delivered, at least 10 days business before the project begins, to:

Palm Beach County Public Health Unit
901 Evernia Street
P.O. Box 29-ESE
West Palm Beach, Fl. 33402

The notice shall include the following information:

Comply with 40 CFR Part 61.145 (b) on a form acceptable to the NESHAPs Administrator.

PERMITS: Provide all permits required by state and local agencies.

LICENSES:

Licenses: Submit evidence of Florida State Asbestos Contractor License. Provide all other licenses required by state and local agencies.

POSTING AND FILING OF REGULATIONS

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

SUBMITTALS:

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

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

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

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

Permits: Submit copies of current valid permits required by state and local regulations.

Licenses: Submit copies of all State and Local licenses and permits necessary to carry out the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01092

SECTION 01301 - SUBMITTALS

PART 1 - GENERAL

RELATED DOCUMENTS

General provisions of Contract, including General and other Division-1 Specification Sections, apply to this Section.

SUMMARY

This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:

Contractor's construction schedule.
Submittal schedule.
Daily construction reports.
Shop Drawings.
Product Data.
Samples.
Miscellaneous Submittals

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.
Performance and payment bonds.
Insurance certificates.
List of Subcontractors.

SUBMITTAL PROCEDURES

Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.

Coordinate transmittal of different types of submittals for 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.

Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

Allow one week for initial 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 being processed must be delayed for coordination.

If an intermediate submittal is necessary, process the same as the initial submittal.

Allow two weeks for reprocessing each submittal.

No extension of 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.

Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.

Include the following information on the label for processing and recording action taken.

Project name.
Date.
Name and address of Owner's Representative.
Name and address of Contractor.
Name and address of subcontractor.
Name and address of supplier.
Name of manufacturer.
Number and title of appropriate Specification Section.
Drawing number and detail references, as appropriate.

Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Owner's Representative using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

On the transmittal record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

Transmittal Form: Use AIA Document G 810 or approved equal.

CONTRACTOR'S CONSTRUCTION SCHEDULE (If Requested by Owner)

Schedule: 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 dates for each executed project work authorization form.

Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 30 days of the date established for "Commencement of the Work".

Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values."

Within each time bar indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.

Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.

Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.

Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.

Indicate Clearance of each Work Area in advance of the dates established for Clearance. Allow time for testing and other Owner's Representative's procedures necessary for certification of Clearance.

Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Owner's Representative's procedures necessary for certification of Substantial Completion.

Indicate completion and Clearance of each Work Area in advance of the date established for Substantial Completion. Allow time for testing and other Owner's Representative's procedures necessary for certification of Clearance and Substantial Completion.

Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit Work by separate Contractors and partial occupancy by the Owner prior to Substantial Completion.

Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation. Include indication of start and finish times for the following:

Non-asbestos demolitions.
Preparation of the Work Area.
Asbestos removal.
Clearance testing.
Substantial Completion.

Area Separations: Provide a separate time bar to identify each Work Area or major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.

When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

SUBMITTAL SCHEDULE

Listing: At the end of this section is a listing of the principal submittals required for the work. This listing is not necessarily complete, nor does the listing reflect the significance of each submittal requirement. The listing is included only for the convenience of users of the Contract Documents.

After review and action on the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule of submittals within 10 days of the date required for establishment of the Contractor's construction schedule.

Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's construction schedule.

Prepare the submittal schedule in chronological order; include submittals required before start of construction. Provide the following information:

Scheduled date for the first submittal.
Related Section number.
Submittal category.
Name of subcontractor.
Description of the part of the Work covered.
Scheduled date for resubmittal.
Scheduled date the Owner's Representative's final release or approval.

Distribution: Following response to initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.

When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

SHOP DRAWINGS (If Requested by Owner)

Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.

Shop Drawings include fabrication and installation drawings, schedules, and similar drawings. Include the following information:

Dimensions.
Identification of products and materials included.
Compliance with specified standards.
Notation of coordination requirements.
Notation of dimensions established by field measurement.

Sheet Size: Submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 36" x 48".

Initial Submittal: Submit one correctable translucent reproducible print and one blue- or black-line print for the Owner's Representative's review; the reproducible print will be returned.

Final Submittal: Submit 3 blue- or black-line prints plus the number of prints needed for distribution. 2 prints will be retained; the remainder returned.

One of the prints returned shall be marked-up and maintained as a "Record Document".

Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

Coordination drawings are a special type of Shop Drawing that show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or function as intended.

Preparation of coordination Drawings is specified in section "Project Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.

Submit coordination Drawings for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

PRODUCT DATA

Collect Product Data into a single submittal. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

Manufacturer's printed recommendations.
Compliance with recognized trade association standards.
Compliance with recognized testing agency standards.
Application of testing agency labels and seals.
Notation of dimensions verified by field measurement.
Notation of coordination requirements.

Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.

Submittals: Submit 3 copies of each required submittal. The Owner's Representative will retain two, and will return the one marked with action taken and corrections or modifications required.

Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.

Do not permit use of unmarked copies of Product Data in connection with construction.

MISCELLANEOUS SUBMITTALS:

Material Safety Data Sheets: Process material safety and data sheets as "product data."

Inspection and Test Reports: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.

Records of Actual Work: Furnish 4 copies of records of actual work, one of which will be returned for inclusion in the record documents as specified in section "Project Closeout".

Standards: Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, submit a single copy of standards for the Owner's Representative's use. Where workmanship, whether at the project site or elsewhere is governed by a standard, furnish additional copies of the standard to fabricators, installers and others involved in the performance of the work.

Closeout Submittals: Refer to section "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information.

Record Documents: Furnish set of original documents as maintained on the project site. Along with original marked-up record drawings provide 2 photographic copies of marked-up drawings, which, at the Contractor's option, may be reduced to not less than half size.

OWNER'S REPRESENTATIVE'S ACTION

Except for submittals for record, information or similar purposes, where action and return is required or requested, the Owner's Representative will review each submittal, mark to indicate action taken, and return promptly.

Compliance with specified characteristics is the Contractor's responsibility.

Action Stamp: The Owner's Representative will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:

Final Unrestricted Release: Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

Final-But-Restricted Release: When submittals are marked "Approved as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

Returned for Resubmittal: When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

Do not permit submittals marked "Not Approved, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.

Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required".

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01301

SUBMITTAL CHECKLIST

BEFORE START OF WORK

01013 Summary of Work - Asbestos Abatement

__ Plan of Action
__ Pre-construction Inspection

01028 Application for Payment - Asbestos Abatement

__ Schedule of Values

01043 Project Coordination - Asbestos Abatement

__ Contingency Plans
__ Telephone Numbers
__ Notifications sent to emergency service agencies..
__ Resume: of general superintendent.
__ Accreditation: of general superintendent
__ Certification: of general superintendent
__ Staff Names

01091 Definitions and Standards - Asbestos Abatement

See Section 01092

01092 Codes, Regulations, and Standards - Asbestos Abatement

__ Copy of State Regulations
__ Copy of Local Regulations
__ Licenses
__ Notifications
__ Permits

01301 Submittals

__ Submittal Schedule
__ Contractor's Construction Schedule

01503 Temporary Facilities - Asbestos Abatement

__ Scaffolding (including Shop Drawing)
__ Decontamination Unit Sub-panel: Product data and Shop drawing
__ Ground Fault Circuit Interrupters (GFCI): Product data
__ Lamps and Light Fixtures: Product data
__ Fire Extinguishers: Product data, location schedule

01513 Temporary Pressure Differential & Air Circulation System

__ Pressure Differential System Design
__ HEPA Filtered Fan Units: Product data
__ Monitoring Equipment: Product data

01526 Temporary Enclosures

__ Schedule of locked doors
__ Polyethlyene: Product data (including fire ratings)
__ Construction plan
__ Lumber (including fire ratings)
__ Spray Cement: Product Data

01560/01561 Worker Protection - Asbestos Abatement, Repair & Maintenance

__ State and Local License: for each worker.
__ Historic Airborne Fiber Data.
__ Certificate Worker Acknowledgement: for each worker.
__ Training Program: course outline.
__ Report of Medical Examination: of each worker.
__ Notarized Certifications.

01562 Respiratory Protection

__ Product Data.
__ NIOSH and MSHA Certifications.
__ Respiratory Protection Program: written manual.
__ Respiratory Protection Schedule: form at end of section.
__ Type "C" System Diagram
__ Type "C" System Operator Resume

01563 Decontamination Units

__ Personnel Decontamination Unit: shop drawing.
__ Equipment Decontamination Unit: shop drawing.
__ Shower Pan: shop drawing.
__ Filters: product data.

__ Filters: shop drawing.
__ Hose Bib: product data.
__ Wash Station Shower Stall: product data and shop drawing.

01601 Materials and Equipment - Asbestos Abatement

__ Product List Schedule

01632 Product Substitutions - Asbestos Abatement

Refer to section.

02081 Removal of Asbestos-Containing Materials

__ HEPA Vacuums: product data.
__ Surfactant: product data.
__ Removal Encapsulant: product data.
__ NESHAPS Certification: on surfactant or removal encapsulant.
__ Material Safety Data Sheet: for each surfactant and encapsulant

02084 Disposal of Asbestos-Containing Waste Material

__ Waste Hauler State License
__ Waste Hauler Local License
__ Name and address of landfill.
__ Landfill contact person and telephone number.
__ Chain of Custody form
__ Waste Manifest Form.

09805 Encapsulation of Asbestos-Containing Materials

__ Encapsulant: Product Data.
__ Installation Instructions.
__ Material Safety Data Sheet.

15254 Repair of Insulation and Lagging

__ Insulation: Product Data.
__ Samples.
__ Installation Instructions.
__ Material Safety Data Sheets.

PERIODICALLY DURING WORK

01028 Application for Payment - Asbestos Abatement

Refer to section for specific requirements for Payment Requests

01043 Project Coordination - Asbestos Abatment

__ Daily Logs
__ Event Reports
__ Accident Reports
__ Discovered Condition Reports

01301 Submittals

__ Record Documents

01513 Temporary Pressure Differential & Air Circulation System

__ Pressure Differential Monitoring Results

01526 Temporary Enclosures

__ Photograph of existing damage prior to applying coatings.

01560 Worker Protection - Asbestos Abatement

Updated information on workers

01562 Respiratory Protection

Update information on new equipment

01632 Product Substitutions - Asbestos Abatement

Refer to section

01701 Project Closeout - Asbestos Abatement

Refer to section

02084 Disposal of Asbestos-Containing Waste Material

Copies of manifests and disposal site receipts.

09805 Encapsulation of Asbestos-Containing Materials

Notification of unsatisfactory substrate.

PROJECT CLOSEOUT

01043 Project Coordination - Asbestos Abatement

__ Daily Log

01701 Project Closeout - Asbestos Abatement

__ Record Documents
__ Record Product Data
__ Certification by putback contractors that all replacement materials are asbestos free.
__ Release of Lien

01711 Project Decontamination

__ Certificate of Visual Inspection

END OF SECTION - 01301

SECTION 01410 - AIR MONITORING-TEST LABORATORY SERVICES

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

Air Monitoring: during work area clearance is described in Section 01714 Work Area Clearance.

DESCRIPTION OF THE WORK

Not in Contract Sum: This section describes work being performed by the Owner. This work is not in the Contract Sum.

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.

Air monitoring required by OSHA is work of the Contractor and is not covered in this section.

AIR MONITORING:

Work Area Isolation: The purpose of the Owner's air monitoring will be to detect faults in the work area isolation such as:

Contamination of the building outside of the work area with airborne asbestos fibers,

Failure of filtration or rupture in the differential pressure system,

Contamination of air outside the building envelope with airborne asbestos fibers.

Should any of the above occur immediately cease asbestos abatement activities until the fault is corrected. Do not recommence work until authorized by the Owner's Representative.

Work Area Airborne Fiber Count: The Owner will monitor airborne fiber counts in the work area. The purpose of this air monitoring will be to detect airborne asbestos concentrations which may challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

Work area clearance: To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level, the Owner will sample and analyze air per Section 01714.

The Owner will be conducting air monitoring throughout the course of the project.

STOP ACTION LEVELS:

Inside Work Area: Maintain an average airborne count in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts rise 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 the Stop Action Level, stop all work except corrective action, leave pressure differential and air circulation system in operation and notify Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Owner's Representative.

STOP ACTION LEVEL (f/cc)	IMMEDIATE STOP LEVEL (f/cc)	MINIMUM RESPIRATOR REQUIRED	MINIMUM PROTECTION FACTOR
0.1	1.0	Half Face	10
0.5	5.0	PAPR	50
1.0	10.0	Type C	100

If airborne fiber counts exceed Immediate Stop Level given above for type of respiratory protection in use for any period of time cease all work except corrective action. Notify Owner's Representative. Do not recommence work until fiber counts fall below Stop Action Level given above for the type of respiratory protection in use. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Owner's Representative.

Outside Work Area: If any air sample taken outside of the work area exceeds the background level established below, immediately and automatically stop all work. The Owner's Representative will determine the source of the high reading.

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

Immediately erect new critical barriers as set forth in Section 01526 Temporary Enclosures to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (eg. wall, ceiling, floor).

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

Require that respiratory protection as set forth in Section 01562 Respiratory Protection be worn in affected area until area is cleared for reoccupancy in accordance with Section 01714 Work Area Clearance.

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

If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 01563 Decontamination Units at entry point to affected area.

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.

If the high reading was the result of other causes initiate corrective action as directed by the Owner's Representative.

Effect on Contract Sum: Complete corrective work and additional clearance sampling with no charge to the Owner 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.

Fibers Counted: The following procedure will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts.

Large Fibers: "Airborne Fibers" referred to above include all fibers regardless of composition as counted by phase contrast microscopy (PCM), unless additional analysis by transmission or scanning electron microscopy demonstrates to the satisfaction of the Owner's Representative that non-asbestos fibers are being counted. "Airborne Fibers" counted in samples analyzed by scanning or transmission electron microscopy shall be asbestos fibers, greater than 5 microns in length and greater that 0.25 microns in diameter. For purposes of stop action levels, subsequent to analysis by electron microscopy, the number of "Airborne Fibers" shall be determined by multiplying the number of fibers, regardless of composition, counted by PCM by a number equal to asbestos fibers counted divided by all fibers counted in the electron microscopy analysis.

Small Structures: "Airborne Fibers" referred to above include asbestos structures (fibers, bundles, clusters or matrices) of any diameter and any length greater than 0.5 microns.

ANALYTICAL METHODS:

The following methods will be used by the Owner in analyzing filters used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.

Phase Contrast Microscopy (PCM) will be performed using the NIOSH 7400 method. This analysis will be carried out at the job site and at a laboratory located off the job site.

Transmission Electron Microscopy will be performed using the analysis method set forth in the AHERA regulation 40 CFR Part 763 Appendix A.

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.

SCHEDULE OF AIR SAMPLES:

Before Start of Work:

The Owner will secure the following Air Samples to establish a background level before start of work.

Sample cassettes: Samples will be collected on 25 mm. cassettes as follows:

PCM: 0.8 micron mixed cellulose ester.

TEM: 0.45 micron mixed cellulose ester or 0.40 micron polycarbonate, with 5.0 micron mixed cellulose ester backing filter.

Sampling sensitivity in the table below refers to

Detection Limit for PCM analysis as set forth in the analytical method used

Analytical Sensitivity for TEM analysis as set forth in the analytical method used or the AHERA regulation.

Location Sampled	Number of Samples	Analysis Method	Sampling Sensitivity Fibers/cc.	Minimum Volume (Liters)	Rate LPM
Each Work Area	5	PCM	0.01	1,200	2-10
Each Work Area	1	hold for TEM	0.005	1,300	2-10
Outside Each Work Area	5	PCM	0.01	1,200	2-10
Outside Each Work Area	1	hold for TEM	0.005	1,300	2-10
Outside Building	1	hold for TEM	0.005	1,300	2-10

Background Level: is an action level expressed in fibers per cubic centimeter which is the largest of the following:

Average of the PCM samples collected

0.01 fibers per cubic centimeter

Samples collected for TEM analysis will be held without analysis. These samples will be analyzed under the conditions and terms set forth in "Fibers Counted" and "Affect On Contract Sum".

Daily:

From start of work of Section 01526 Temporary Enclosures through the work of Section 01711 Project Decontamination, the Owner may be taking the following samples on a daily basis.

Samples will be collected on 25 mm. cassettes with the following filter media:

PCM: 0.8 micron mixed cellulose ester.

Location Sampled	Number of Samples	Analysis Method	Detection Limit Fibers/cc	Minimum Volume (Liters)	Rate LPM
Each Work Area	2	PCM	0.01	1,200	2-10
			OR AS REQUIRED BY CONDITIONS		
Outside Each Work Area at Critical Barrier	1	PCM	0.01	1,200	2-10
Clean Room	1	PCM	0.01	1,200	2-10
Equip Decon	1	PCM	0.01	1,200	2-10
Outside Building	1	PCM	0.01	1,200	2-10
Output Pressure Differential System	1	PCM	0.01	1,200	2-10

Additional samples may be taken at Owner's or Owner's Representatives discretion. If airborne fiber counts exceed allowed limits additional samples will be taken as necessary to monitor fiber levels.

LABORATORY TESTING:

The services of a testing laboratory will be employed by the Owner to perform laboratory analysis of the air samples. Samples will be sent overnight on a daily basis, so that verbal reports on air samples can be obtained within 72 hours. The Contractor will have access to all air monitoring tests and results.

Written Reports: of all air monitoring tests will be posted at the job site on a daily basis or within 72 hours.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

ADDITIONAL TESTING:

The Contractor may conduct his own air monitoring and laboratory testing. If he elects to do this the cost of such air monitoring and laboratory testing shall be at no additional cost to the Owner.

PERSONAL MONITORING:

Owner will not be performing air monitoring to meet Contractor's OSHA requirements for personnel sampling or any other purpose.

END OF SECTION - 01410

SECTION 01503 - TEMPORARY FACILITIES - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of the Contract, including General and other Division-1 Specification sections, apply to work of this section.

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

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.

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.

WATER SERVICE:

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

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 (At Owner's Representative Request): Provide UL rated 40 gallon electric hot water heater to supply hot water for the Decontamination Unit shower. Activate from 30 amp circuit breaker located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with NEMA, NECA, and UL standards.

Hot Water: may be secured from the building hot water system, provided backflow protection is installed at point of connection as described in this section under Temporary Water Service connection, and if authorized in writing by the Owner's Representative.

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

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

FIRST AID:

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

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 NFPA recommended types for the exposures in each case.

PART 3 - EXECUTION

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.

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.

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

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

WATER SERVICE:

General: Water connection (without charge) 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. Install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of 100 F. Supply hot and cold water to the Decontamination Unit in accordance with Section 01516. In addition, water shall be supplied for the following uses:

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 pans as it accumulates.

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 during the construction 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 as described below. Unless specifically noted otherwise existing power and lighting circuits to the work area are not to be used. All power and lighting to the Work Area and Decontamination facilities is to be provided from temporary electrical panel described below.

Lockout power to work area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of contractor's superintendent of owner's designated representative.

Lockout power to circuits running through work area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and supply keys to contractor, Owner and Owner's Representative. If circuits cannot be shut down for any reason, label at 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard."

Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative.

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 construction operations.

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

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.

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

One Circuit for each HEPA filtered fan unit.

For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).

One outlet in the work area for each 2500 square feet of work area.

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

110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:

One in each work area.

One at clean side of each decontamination unit.

One at each exhaust location for HEPA filtered fan units.

110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use for conducting final air sampling as set forth in Section 01714 Work Area Clearance as follows:

Five inside work area.

Two outside work area in location designated by Owner's Representative.

TEMPORARY LIGHTING:

Lockout: Lockout all existing power to lighting circuits in work area as described in section 01526 Temporary Enclosures. Unless specifically noted otherwise existing lighting circuits to the work area are not to be used. All lighting to the Work Area and Decontamination facilities is to be provided from temporary electrical panel described above.

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

One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

Provide lighting in areas where work is being preformed as required to supply a 100 foot candle minimum light level.

Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.

Provide lighting in the Decontamination Unit as required to supply a 50 foot candle minimum light level.

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

Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

SANITARY FACILITIES:

Toilets: Use of the Owner's existing toilet facilities, as indicated, will be permitted, so long as these facilities are properly cleaned and maintained in a condition acceptable to the Owner. At substantial completion, restore these facilities to the condition prevalent at the time of initial use. Written permission from the owner must be obtained, and all provisions of these specifications regarding leaving the work area are met.

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.

END OF SECTION - 01503

SECTION 01513 - TEMPORARY PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

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).

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's action stamp indicating that the submittal is returned for unrestricted use. Include in the submittal at a minimum:

Number of HEPA filtered exhaust 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.

Anticipated pressure differential across work area enclosures .

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

Manufacturer's product data on the HEPA filtered exhaust units 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 away from workers.

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

On a weekly basis: Submit printout from pressure differential monitoring equipment. Mark printout with date and start of time for each day. Use printout paper that indicates elapsed time in intervals no greater than hours. Indicate on each days record times of starting and stopping abatement work, type of work in progress, breaks for lunch or other purposes, periods of stop work, and filter changes. Cut printout into segments by day, attach to 8 1/2" by 11" paper. Label with project name, contractors name and date.

QUALITY ASSURANCE:

Monitor pressure differential at Personnel and Equipment decontamination units with a differential pressure meter equipped with a continuous recorder. Meter shall be equipped with a warning buzzer which will sound if pressure differential drops below 0.01" of water.

PART 2 - PRODUCTS

HEPA FILTERED EXHAUST UNITS:

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

Cabinet: Constructed of 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. Provide units whose cabinets are:

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

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

Mounted on casters or wheels.

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

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

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

Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles when tested in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.

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

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. Provide units with the following prefilters:

First-stage prefilter: low-efficiency type (e.g., for particles 100 um and larger).

Second-stage (or intermediate) filter: medium efficiency (eg., effective for particles down to 5 um).

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

Instrumentation: Provide units equipped with:

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

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

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

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

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

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

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

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

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

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

Asbestos Control Technology, Inc. "Micro-Trap"
P.O. Box 183
Maple Shade, NJ 08052

Control Resource Systems, Inc. "Hog" 2000
670 Mariner Drive
Michigan City, Indiana 46360

Global Consumer Services, Inc. "Red Baron"
1721 N. Highland Avenue
Los Angeles, CA 90028

Tri-Dim Filter Corporation "ACCU-2M"
1431 West Lake Street
Chicago, Illinois 60607

PART 3 - EXECUTION

PRESSURE DIFFERENTIAL ISOLATION

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.

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

0.02 inches of water.

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

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 the required pressure differential.

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

Vent exhaust units to outside of building:

Mount units to exhaust directly or through disposable ductwork.

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

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

Use spiral wire-reinforced flex duct in lengths not greater than 50 feet.

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

If direction of discharge from fan unit is not aligned with duct use sheet metal elbow to change direction. Use 6' of spiral wire reinforced flex duct after direction change.

Isolation of chases and enclosed stairs: Pressurize chases and enclosed stairs so that they are at a pressure greater than any adjacent work area.

Pressurize space with centrifugal type fans. Axial type fans are not to be used for this purpose. Continuously maintain a pressure differential with this space a minimum of 0.02 inches of water higher in static pressure than any adjacent work area.

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

Wrap the duct with 6 mil polyethylene. Seal all polyethylene seams with spray glue and duct tape.

Enclose wrapped duct with two layers of polyethylene. Fabricate inner layer from 6 mil polyethylene with all seams sealed with spray glue and duct tape. Arrange outer layer to support inner layer, fabricate out of reinforced sheet plastic with seams sealed with spray glue and duct tape and reinforced with staples. Support outer layer with a frame work fabricated from 2X4's at 24" on center.

Enclosures less than 8'-0" in circumference may be reinforced with box strapping in lieu of wood framing.

AIR CIRCULATION IN 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 Air Circulation Requirements: Provide a fully operational air circulation system supplying a minimum of the following air circulation rate:

6 air changes per hour

Determine Number of Units needed to achieve required air circulation according to the following procedure:

Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (cfm) for the work area by multiplying this volume by the result of the air change rate divided by 60.

Air circulation Required (CFM) =

$$\text{Volume of work area (cu. ft.)} \times \frac{\text{Changes per hour}}{\text{60 minutes per hour}}$$

Divide the air circulation 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.

Number of Units Needed =

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

Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing. The additional unit must have a capacity equal to or greater than the largest unit used.

EXHAUST SYSTEM:

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

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

Location of Exhaust Units: Locate exhaust unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses work area as much as possible. This may be accomplished by positioning the exhaust unit(s) at a maximum distance from the worker access opening or other makeup air sources.

Place End of Unit an intake duct or its exhaust duct through an opening in the plastic barrier or wall covering. Seal plastic around the unit or duct with tape.

Vent to Outside of Building unless authorized in writing by Owner's Representative to do otherwise.

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

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

USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM:

General: Each unit shall be serviced by a dedicated minimum 115V-20A circuit with ground fault interrupter (GFI) supplied from temporary power supply installed under requirements of Section 01503 "Temporary Facilities." Do not use existing branch circuits to power fan units.

Testing the System: Test pressure differential system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the exhaust unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of pressure differential system to Owner's Representative.

Demonstrate Condition of Equipment for each HEPA filtered fan unit and pressure differential monitoring equipment including proper operation of the following:

Squareness of HEPA Filter,

Condition of Seals,

Proper operation of all lights,

Proper operation of automatic shut down if exhaust is blocked,

Proper operation of alarms,

Proper operation of magnehelic gauge.

Proper operation and calibration on pressure monitoring equipment.

Demonstrate Operation of the pressure differential system to the Owner's Representative will include, but not be limited to, the following:

Use smoke tubes to demonstrate the effectiveness of all barriers separating the work area from the balance of the building.

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 through Shower Room to Equipment Room.

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

Use a differential pressure meter or manometer to demonstrate the required pressure differential at every barrier separating the Work Area from the balance of the building, equipment, ductwork or outside.

Modify the Pressure Differential System as necessary to demonstrate successfully the above.

Allow Overnight Settling: of the entire work area containment system, with pressure differential system in full operation, prior to commencing abatement operations. Demonstrate to the Owner's Representative that barriers will remain intact and secured to walls and fixtures.

Use of System During Abatement Operations:

Start exhaust 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. Supply sufficient pre-filters to allow frequent changes.

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 01711, 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, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter, decontaminate exterior of machine and seal intake to the machine with 6 mil polyethylene to prevent environmental contamination from the filters.

END OF SECTION - 01513

SECTION 01526 - TEMPORARY ENCLOSURES

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

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.

Spray Cement: Submit following:

Product description including major components and solvents.

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

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 spray cement 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

SHEET PLASTIC:

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mils thick as indicated, clear, frosted, or black as indicated.

Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mils thick, frosted or black as indicated.

MISCELLANEOUS MATERIALS:

Duct Tape: Provide duct tape in 2" 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

SEQUENCE OF WORK:

Carry out work of this section sequentially. Complete each activity before proceeding to the next.

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 01711. Perform all such required cleaning or decontamination at no additional cost to owner.

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

Remove all removable furniture, that has been designated uncontaminated by the contract documents or Owner's Representative. Also remove uncontaminated 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 broached.

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 work area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of contractor's superintendent of owner's designated representative.

Lockout power to circuits running through work area wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of contractor's superintendent or owner's designated representative. If circuits cannot be shut down for any reason, label at 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard." Label circuits in hidden locations but which may be affected by the work in a similar manner.

EMERGENCY EXITS:

Provide emergency exits and emergency lighting as set forth below:

Emergency Exits: At each existing exit door from the Work Area provide the means for emergency exiting consisting of:

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 Primary and Critical Barriers with luminescent paint at least 1" wide. Hang a razor knife on a string beside outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least 1' high and 2" thick.

Provide lighted EXIT sign at each exit.

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

CONTROL ACCESS:

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

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

After receiving written authorization from the Owner's Representative lock all doors into work area, or if doors cannot be locked chain shut. Cover any signs that direct emergency exiting, either outside or inside of work area, to locked doors. **Do not obstruct doors required for emergency exits from work area or from building.**

After receiving written authorization from the Owner's Representative: Construct partitions or closures across any opening into work area. Partitions are to be a minimum of 8' high.

Fabricate partitions from 2 X 4 metal studs with 1/2" gypsum board on both faces. Brace at 4' on center.

Fabricate partitions from 2 X 4 wood studs with 1/2" plywood on both faces. Brace at 4' on center. Use only fire retardant treated wood.

Replace passage sets on doors required for exiting from work area with temporary locksets for duration of the project. Use entry type locksets that are key lockable from one side and always operable from inside. Provide one key to Owner and maintain one key in clean room of decontamination unit. After meeting contractor release criteria set forth in Section 01714 Work Area Clearance reinstall original passage sets and adjust for proper operation.

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

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

As an alternative replace locksets or passage sets on doors leading to decontamination units with temporary locksets for duration of the project. Remove any deadbolts or padlocks. Use entry type locksets that are key lockable from outside and always unlocked and operable from inside. After meeting contractor release criteria set forth in Section 01714 Work Area Clearance reinstall original locks, passage sets and locksets and adjust for proper operation.

Provide one key for each door to Owner, and Owner's Representative and maintain one key in clean room of decontamination unit (3 total).

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 4 mil in thickness so that the work procedures are not visible to building occupants. Where this visual barrier would block natural light, substitute frosted or woven rip-stop sheet plastic in locations approved by the Owner's Representative.

Provide Warning Signs at each locked door leading to work area reading as follows:

LEGEND	NOTATION
KEEP OUT	3" Sans Serif Gothic or Block
CONSTRUCTION	1" Sans Serif Gothic or Block
WORK AREA	1" Sans Serif Gothic or Block

Immediately inside door and outside critical barriers Post an approximately 20 inch by 14 inch manufactured caution sign 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
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.

ALTERNATE METHODS OF ENCLOSURE:

Alternate methods of containing the work area may be submitted to the Owner's Representative for approval in accordance with procedures set forth in Section 01632 Product Substitution. Do not proceed with any such method(s) without prior written approval of the Owner's Representative.

RESPIRATORY AND WORKER PROTECTION:

Before proceeding beyond this point in providing Temporary Enclosures:

Provide Worker Protection per Section 01560

Provide Respiratory Protection per Section 01562

Provide Personnel Decontamination Unit per Section 01563

CRITICAL BARRIERS:

Completely Separate the work area from other portions of the building, and the outside by closing all openings with one (1) layer of sheet plastic barriers at least 6 mil in thickness, or by sealing cracks leading out of work area with two (2) layers of duct tape.

Individually seal All ventilation openings (supply and exhaust), lighting fixtures, electrical outlets, clocks, doorways, windows, convectors and speakers, and other openings into the work area with two (2) layers of duct tape alone or with one (1) layer of 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 of lighting fixtures to avoid melting or burning of sheeting.

Provide One (1) Layer of Sheet Plastic barriers at least 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.

Mechanically Support sheet plastic independently of duct tape seals so that seals do not support the weight of the plastic. Following are acceptable methods of supporting sheet plastic barriers. Alternative support methods may be used if approved in writing by the Owner's Representative.

Plywood squares 6" x 6" x 3/8" held in place with one 6d smooth masonry nail or electo-galvanized common nail driven through center of the plywood and duct tape on plastic so that plywood clamps plastic to the wall. Locate plywood squares at each end, corner and at maximum 4' on centers.

Temporary Pressure Differential and Air Circulation System per Section 01513.

Clean housings and ducts of all overspray materials prior to erection of any Critical Barrier that will restrict access.

The use of spray cement to bind poly to any surface other than poly is prohibited.

PREPARE AREA:

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

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 with the work.

Remove all general construction items such as cabinets, casework, door and window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference with the work. Clean, decontaminate and reinstall all such materials, upon completion of all removal work with materials, finishes, and workmanship to match existing installations before start of work.

Clean all contaminated furniture, equipment, and or supplies with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Section 01712, 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 with a HEPA filtered vacuum or by wet wiping prior to the installation of primary barrier.

PRIMARY BARRIER:

Protect building and other surfaces in the work area from damage from water and high humidity or from contamination from asbestos containing debris, slurry or high airborne fiber levels by covering with a primary barrier as described below.

Sheet Plastic: Protect surfaces in the work area with two (2) layers of plastic sheeting on floor, ceilings and walls, or as otherwise directed on the contract drawings or in writing by the Owner's Representative. Perform work in the following sequence.

Cover Floor of work area with two (2) individual layers of clear polyethylene sheeting, each at least 6 mil in thickness, turned up walls at least 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. Both spray-glue and duct tape all seams in floor covering. Locate seams in top layer six feet (6') from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer.

Cover Carpeting with three (3) layers of polyethylene sheeting at least 6 mil in thickness. Place corrugated cardboard sheets between the top and middle layers of polyethylene.

Cover Sheet Plastic in areas where scaffolding is to be used with a single layer of 1/2" CDX plywood or 1/4" tempered hardboard. Wrap edges and corners of each sheet with duct tape. At completion of abatement work wrap plywood or hardboard with 2 layers of 6 mil polyethylene and move to next work area or dispose of as an asbestos contaminated waste material in accordance with section 02084 of this specification.

Cover all walls (friable or potentially friable removals only) in work area including "Critical Barrier" sheet plastic barriers with two (2) layers of polyethylene sheeting, at least 6 mil in thickness, mechanically supported and sealed with duct tape or spray-glue in the same manner as "Critical Barrier" sheet plastic barriers. Tape all joints including the joining with the floor covering with duct tape or as otherwise indicated on the contract documents or in writing by the Owner's Representative.

Cover all Ceilings (friable or potentially friable removals only) in work area including "Critical Barrier" sheet plastic barriers with two (2) layers of polyethylene sheeting, at least 6 mil in thickness, mechanically supported and sealed with duct tape or spray-glue in the same manner as "Critical Barrier" sheet plastic barriers. Tape all joints including the joining with the wall covering with duct tape or as otherwise indicated on the contract documents or in writing by the Owner's Representative.

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.

NOTE: Removal of interior non-friable material such as resilient floor covering requires one (1) layer of 6 mil polyetheylene and a four (4) foot high splash guard.

Repair of Damaged Polyethylene Sheeting: Remove and Replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dry.

STOP WORK:

If the Critical or Primary barrier falls or is breached in any manner stop work immediately. Do not start work until authorized in writing by the Owner's Representative.

EXTENSION OF WORK AREA:

Extension of Work Area: If the Critical 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 01711 Project Decontamination.

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.

EXTERIOR ENCLOSURES:

Construct exterior enclosures as a critical barrier as necessary to completely enclose the work. Fabricate from 2" X 4" framing spaced 16" O.C. Construct roof of 2" X 6" framing spaced 16" O.C. Sheath entire structure including decontamination units with 1/2" fire rated plywood. Install construction fencing around entire enclosure. Decontamination unit door shall be secure and lockable. Attach to existing building components or brace as necessary for lateral stability. Construct walls to meet all state and local regulations for construction of temporary buildings. Construct to resist a wind of 30 MPH, slope ceiling to permit drainage of rain water.

END OF SECTION - 01526

SECTION 01527 - REGULATED AREAS

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

RELATED WORK SPECIFIED ELSEWHERE:

Required supervision and OSHA Competent Person: is specified in Section 01043.

Worker Protection - Asbestos Abatement: is specified in Section 01560.

Respiratory Protection: is specified in Section 01562.

Wet Decontamination Facilities: are described in Section 01563.

DESCRIPTION OF WORK:

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

Section 01528 Entry Into Controlled Area
Section 01529 Operations & Maintenance Work
Section 15254 Repair of Insulation and Lagging

PART 2 - EQUIPMENT

HEPA Filter Vacuum Cleaners:

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

Nilfisk of America Inc. HEPA filtered
225 Great Valley Parkway Vacuums
Malvern, PA 19355

Clayton Associates, Inc. P.O. Box 589 30 Southard Avenue Farmingdale, NJ 07727	ACE Model HEPA Vacuum
Hako Minuteman 111 South Route 53 Addison, IL 60101	Hako Minuteman HEPA Vacuums
Vactagon Pneumatic Systems,Inc. 18 Homestead Place Bergenfield, NJ 07621	Vaculoader HEPA Vacuum
Pullman-Holt (White) Corporation PO Box 277 Fultonville, New York 12072	HEPA Filtered Vacuums

Plastic Sheet:

Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams 6.0 mils thick as indicated, clear, frosted, or black as indicated.

PART 3 - EXECUTION

SECURING WORK AREA:

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

DEMARCATION OF REGULATED AREA:

Demarcate each Regulated Area with a sheet plastic drop sheet as described below.

Post warning signs that carry the following legends:

Provide signs in both English and Spanish:

First Sign:

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

Legend	Notation
KEEP OUT	3 inch Block

Second Sign:

Immediately inside the locked door and outside the controlled area post an approximately 20 inch by 14 inch manufactured caution sign 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

RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

SCHEDULING:

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

GENERAL PROCEDURES:

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

Setup and management of the controlled area is to be under the supervision of a OSHA Competent Person as described in Section 01043 Project Coordination - Asbestos Abatement.

Before start of work comply with requirement for worker protection in section 01561, and respiratory protection in section 01562.

Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Regulated Area.

Shut down any air handling equipment bringing air into or out of the Regulated Area.

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

Cover floor in vicinity of work area and six (6) feet beyond, with 6 mil polyethylene drop sheet. Where work is adjacent to wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the Regulated Area.

Cover or move all furniture equipment, etc. in the area. Be certain poly is square at all corners of walls, furniture, etc. so it will not be punctured by ladder.

Seal all openings, supply and exhaust vents, and convectors within 10 feet of the work area with 6 mil polyethylene sheeting secured and completely sealed with duct tape.

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

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

Complete the following at completion of work in an area before stepping off drop sheet. (Minimum 2 man procedure)

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

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

Worker on the sheet thoroughly HEPA vacuum all surfaces of the plastic sheet, bags, and any other items on the sheet including his own feet.

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

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

Fold sheet and all its contents toward the center.

Place the sheet in a properly labeled disposal bag.

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

Twist the bag shut, bend over and seal with duct tape by wrapping around bag neck at least 3 times.

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

At completion of work require all workers to complete decontamination procedures in accordance with Section 01561 Worker Protection - Repair & Maintenance.

Remove respirators using the procedure in Section 01561 Worker Protection - Repair & Maintenance.

END OF SECTION - 01527

SECTION 01528 - ENTRY INTO CONTROLLED AREAS

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

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

Unless authorized in writing by the Owner's Representative, the provisions of this section apply to only the following situations:

Entry into the space above a suspended ceiling or to change light bulbs where there is exposed friable asbestos-containing fireproofing and/or acoustical plaster, visible asbestos-containing debris, or other friable asbestos-containing surfacing material when ceiling tiles and/or light fixtures (diffusers, grills, covers, etc.) in an area no greater than 6 feet by 12 feet are to be removed.

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

Use procedures of this section only where historic airborne fiber data demonstrates that airborne fiber counts in the work area can be continuously maintained at less than 0.01 fibers per cubic centimeter.

SUBMITTALS:

Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to demonstrate:

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

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

Date of measurements

Operations monitored

Sampling and analytical methods used and evidence of their accuracy.

Number, duration, and results of samples taken.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

REGULATED AREA:

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

ACCESS THROUGH SUSPENDED CEILINGS:

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

Follow worker protection procedures including disposable coveralls and respirators required by Section 01560, and Section 01562.

Follow local area protection procedures of Section 01526. Spread layer of 6 mil polyethylene sheet on floor 6 feet further in extent than the size of the ceiling opening to be made.

HEPA vacuum around edges of all panels to be removed.

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

Place panel on top of adjacent ceiling.

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

Climb to a position which permits access to the top of the ceiling adjacent to the removed panel.

Working in the space above the ceiling, HEPA vacuum both sides of the ceiling panel first removed and hand it down into a 6 mil polyethylene bag for storage.

Remove loose material hanging from the friable asbestos-containing material with the suction from the HEPA vacuum.

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

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

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

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

Working in space above ceiling HEPA vacuum both sides on each panel removed and hand each down into a 6 mil polyethylene bag for temporary storage.

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

When above-ceiling work is complete replace ceiling panels.

HEPA vacuum head, arm, and shoulders before climbing down from ceiling.

HEPA vacuum ladder while climbing down.

While standing on polyethylene sheet thoroughly HEPA vacuum ladder and pass it to person standing off sheet.

ACCESS INTO LIGHT FIXTURES:

Remove light covers, diffusers, shields, etc. from light fixtures to change light bulbs using the following sequence:

Follow worker protection procedures including disposable coveralls and respirators required by Section 01560, and Section 01562.

Follow local area protection procedures of Section 01528. Spread layer of 6 mil polyethylene sheet on floor 6 feet further in extent than the size of the light fixture.

HEPA vacuum around all edges of light cover, diffuser, etc. to be removed.

While holding nozzle of HEPA vacuum in vicinity slowly open the light cover, diffuser. Immediately HEPA vacuum space at opened edge. Open entire cover and HEPA vacuum all four sides.

Place intake nozzle of HEPA vacuum in vicinity of light cover opening. Operate machine continuously while light cover, diffuser is open.

Note that the operation of the HEPA vacuum is intended to clean the air in the location of the work. As such the nozzle should be kept at the light cover opening as much as possible and the canister on the floor.

Climb to a position which permits access to change the light bulb.

HEPA vacuum the light bulb.

Remove any loose material hanging from the friable asbestos-containing material with the suction from the HEPA vacuum.

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

Change the light bulb/bulbs.

Maintain HEPA vacuum in operation with nozzle at opening and exhaust at floor for the entire time that the light cover is open and work is being done.

When light bulb changing is complete replace light cover, diffuser, shield, etc. Use care to not disturb any material.

HEPA vacuum head, arm, and shoulders before climbing down from ceiling.

HEPA vacuum ladder while climbing down.

While standing on polyethylene sheet thoroughly HEPA vacuum ladder and pass it to person standing off sheet.

ENTRY INTO CONTROLLED AREAS:

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

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

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

PERSONNEL DECONTAMINATION:

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

Complete dry decontamination procedures set forth in Section 01561.

END OF SECTION - 01528

SECTION 01529 - OPERATIONS & MAINTENANCE WORK

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF THE WORK:

Minor Work: Use provisions of this section when minor work is to be performed on asbestos-containing materials. Work is considered minor when:

Removal of less than ten square feet (10 sq. ft.) of lift-out ceiling tile is involved in the work.

Removal of less than ten square feet (10 sq. ft.) of z-spline or adhered tile is involved in the work.

Removal of less than ten square feet (10 sq. ft.), of an architectural finish or fireproofing is involved in the work.

Removal of no more than twenty-five 25 linear feet (25 lin. ft.), whichever is less, of pre-formed plaster or air cell pipe insulation no greater than six inches (6 in.) in diameter is involved in the work.

Removal of no more than ten square feet (10 sq. ft.), of boiler gasket material is involved in the work.

Removal of less than ten square feet (10 sq. ft.) of boiler and/or breeching insulation is involved in the work.

Removal of less than ten square feet (10 sq. ft.) of equipment/tank insulation.

Removal of less than ten square feet (10 sq. ft.) of flexible duct connectors.

Removal of less than ten square feet (10 sq. ft.) of job molded plaster pipe or fitting insulation is involved in the work.

Removal, drilling or otherwise abrading no more than ten square feet (10 sq. ft.) of floor tile, cement asbestos board etc.

Removal of up to twenty-five linear feet (25 lin. ft.) of pre-formed plaster or air cell type pipe insulation greater than six inches (6 in.) in diameter is involved in the work.

Removal of less than ten square feet (10 sq. ft.) of chimney sealant.

Removal of less than twenty-five linear feet (25 lin. ft.) of rope gasket or ceramic flue.

Removal of fire doors and lab tables disturbing less than ten square feet (10 sq. ft.) of ACM.

Removal of light fixtures disturbing less than ten square feet (10 sq. ft.) of ACM.

Removal of less than 10 square feet (10 sq. ft.) of fibrous board (wall board).

Removal of HEPA vacuum bags.

Provide mini-enclosure for work which requires the disturbance of more than 3 square or 3 linear feet of asbestos-containing material and is not performed as a maintenance activity.

Comply with Section 01526 - TEMPORARY ENCLOSURES If the quantities of asbestos-containing materials exceed the above, or if airborne fiber counts generated by the work exceed 0.2 fibers per cubic centimeter in the breathing zone of the person performing the work.

Disturbance of Asbestos-Containing materials: Use provisions of this section when the work involves disturbance of but not removal of small areas of asbestos-containing materials.

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.

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 Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).

Material Safety Data Sheet: Submit 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. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to demonstrate the ability to perform work of this section while maintaining an airborne fiber count below 0.2 fibers per cubic centimeter in the breathing zone of the individual performing the work. Include the following data for each procedure required by the work:

Date of measurements

Operations monitored

Sampling and analytical methods used and evidence of their accuracy.

Number, duration, and results of samples taken.

Spray Cement: Submit following:

Product description including major components and solvents.

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

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 spray cement 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.

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

PART 2 - PRODUCTS

SHEET PLASTIC:

Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams 6.0 mils thick as indicated, clear, frosted, or black as indicated.

Reinforced Polyethylene Sheet: Where plastic sheet constitutes the only barrier between the work area and the building exterior, provide translucent, nylon reinforced or woven polyethylene, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams 6.0 mils thick as indicated, frosted or black as indicated.

MISCELLANEOUS MATERIALS:

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.

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.

Encapsulants are specified in Section 09805.

Glove bag: provide minimum 6 mil polyethylene, polyvinylchloride or equivalent plastic sack, with two sealed inward projecting longsleeved gloves or mittens, preprinted with same warning notice as a 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 sealing as specified.

Garden 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

GENERAL:

Complete the following before start of work of this section:

01527 Regulated Areas

01562 Respiratory Protection

01560 Worker Protection - Asbestos Abatement

01561 Worker Protection-Repair and Maintenance

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.

GLOVE BAG:

Remove asbestos-containing material inside a glove bag according to the following procedure:

Check pipe where the work will be performed. Wrap damaged (broken lagging, hanging, etc.), pipe in 6 mil plastic and "candy-stripe" with duct tape. Place one layer of duct tape around undamaged pipe at each end where the glovebag will be attached.

Slit top of the glovebag open (if necessary) and cut down the sides to accommodate the size of the pipe (about two inches longer than the pipe diameter).

Place necessary tools into pouch located inside glovebag. This will usually include: bone saw, utility knife, rags, scrub brush, wire cutters, tin snips and pre-wetted cloth.

Place one strip of duct tape along the edge of the open top slit of glove bag for reinforcement.

Place the glove bag around section of pipe to be worked on and staple top together through reinforcing duct tape. Next, duct tape the ends of glovebag to pipe itself, where previously covered with plastic or duct tape.

Use smoke tube and aspirator bulb to test seal. Place tube into water sleeve (two-inch opening to glovebag) squeezing bulb and filling bag with visible smoke. Remove smoke tube and twist water sleeve closed. While holding the water sleeve tightly, gently squeeze glovebag and look for smoke leaking out, (especially at the top and ends of the glovebag). If leaks are found, tape closed using duct tape and re-test.

Insert wand from garden sprayer through water sleeve. Duct tape water sleeve tightly around the wand to prevent leakage.

Thoroughly wet material to be worked on with amended water or removal encapsulant and allow to soak in. Wet adequately to penetrate and soak material through to substrate.

One person places his hands into the long-sleeved gloves while the second person directs garden sprayer at the work.

Use bone saw, if required, to cut insulation at each end of the section to be removed. A bone saw is a serrated heavy gauge wire with ring-type handles at each end. Throughout this process, spray amended water or removal encapsulant on the cutting area to keep dust to a minimum.

Remove insulation using putty knives or other tools. Place pieces in bottom of bag without dropping.

Rinse all tools with water inside the bag and place back into pouch.

Using scrub brush, rags and water, scrub and wipe down the exposed pipe.
Remove water wand from water sleeve and attach the small nozzle from HEPA-filtered vacuum. Turn on the vacuum only briefly to collapse the bag.

Remove the vacuum nozzle, twist water sleeve closed and seal with duct tape.

From outside the bag, pull the tool pouch away from the bag. Place duct tape over twisted portion and then cut the tool bag from the glovebag, cutting through the twisted/taped section. Contaminated tools may then be placed directly into next glovebag without cleaning. Alternatively, tool pouch with the tools can be placed in a bucket of water, opened underwater, and tools cleaned and dried. Discard rags and scrub brush with asbestos waste. If more than one adjacent section of pipe is to be removed, glovebag may be loosened at each end and slid along the pipe to the next section. In this case, the tools may remain in the bag for continued use.

With removed insulation in the bottom of the bag, twist the bag several times and tape it to keep the material in the bottom during removal of the glovebag from the pipe.

Slip a 6 mil disposal bag over the glovebag (still attached to the pipe). Remove tape or cut bag and open the top of the glove bag and fold it down into disposal bag.

Clean all surfaces in the work area using disposable cloths wetted with water with surfactant or removal encapsulant added. When these surfaces have dried clean with a HEPA filtered vacuum. Material adhered to a surface with removal encapsulant may require the application of additional removal encapsulant to facilitate cleaning.

Seal exposed ends of remaining pipe insulation in accordance with Section 15254.

Remove disposable suits and place these into bag with waste.

Collapse the bag with a HEPA vacuum twist top of bag, seal with at least 3 wraps of duct tape, bend over and seal again with at least 3 wraps of duct tape.

Glove bags are acceptable only on small scale, short duration projects prompted by impending maintenance activity and are not acceptable unless utilized with a negative pressure enclosure on abatement projects.

MINI-ENCLOSURES:

A Mini-enclosure consists of a small Work Room with an attached separate Change Room. Worker decontamination requires a remote personnel decontamination unit.

Sequence of Work: Before beginning work of this sub-section complete the following:

Isolation of area in accordance with Section 01527 Regulated Areas.

Construction of a personnel decontamination unit in accordance with Section 01563 Decontamination Units.

Work Room: Construct Work Room in the same manner as a Primary Barrier fabricated from 6 mil sheet plastic. Arrange so that Primary Barrier provides both a Critical and Primary Barrier. Line walls and floor of Work Room with a continuous Secondary Barrier.

Change Room: Provide an approximately 3'-0" by 3'-0" Change Room, with additional space as required for storage, attached to each Work Room. Fabricate Change Room from 6 mil sheet plastic in the same manner as a Primary Barrier. Locate so that access to Work Area is though Change Room.

Step Off Area: Cover floor in front of entry to Change Room with one layer of 6 mil sheet plastic. Securely anchor sheet plastic to prevent slipping.

Flapped Door Construction: Provide Flapped Door as entry to Change Room and entry from Change Room to Work Room. Fabricate each flapped door from overlapping contacting layers of sheet plastic. Fasten each layer on the top and one side. Each flap is to be 3" longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side from duct tape on inside and outside of door.

Signage: At entry to Change Room post an approximately 20 inch by 14 inch manufactured caution sign 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
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.

Complete requirements of the following:

Section 01560 Worker Protection - Asbestos Abatement

Section 01562 Respiratory Protection

Section 01513 Pressure Differential System: HEPA filtered vacuum cleaner with vacuum in space outside Mini-enclosure may be used for compliance with this section. Provide a minimum of 8 air changes per hour in the Work Room.

Entry to Work Room: Require that any time a worker enter the Work Room the following procedure is followed.

Outside of Change Room remove all street clothes and don clean coveralls and respirator. A swim suite of second disposable suite may be worn beneath outer coveralls

Enter Change Room be sure that entry is completely closed.

Enter Work Room be sure that entry is completely closed.

Worker Decontamination: Require that any time a worker leaves the mini-enclosure the following procedure be followed.

Maintain a bucket of clean potable water in the work area. Do not amend with a wetting agent.

Remove contaminated suit inside the work area. Leave respirator in place.

Wash hands, face and surface of respirator with water and wet paper towels. Use caution to avoid breaking seal between respirator face- piece and face.

Proceed with respirator in place to Change Room.

Be sure that entry to work area is completely closed.

In Change Room don clean disposable suit leaving respirator in place.

Exit change room be sure that entry to Change Room is completely closed. Proceed to next mini-enclosure, or a remote shower.

At end of work day decontaminate fully in accordance with procedures in appropriate specification section describing Worker Protection.

Material Decontamination: Require that the following procedure be used in removing equipment and bagged debris from the Work Room.

Three workers are required. One in the Work Room, one in the Change Room, and one on Step Off Area.

Equipment and bagged debris are to be removed from the Mini-enclosure in separate operations.

Worker in Work Room cleans equipment and bagged debris and hand one piece of equipment or one bag of debris at a time to worker in Change Room.

Worker in Change Room wet cleans each piece of equipment or bag and stores them in Change Room. Equipment is sealed completely in 6 mil sheet plastic in the Change Room.

When the amount of stored material in the Change Room becomes large enough that the worker cannot clean incoming material without contacting previously cleaned material the door between the Work and Clean Room is closed.

The worker in the Changing Room then passes each item into a new disposal bag held open in the doorway between the Changing Room and Step Off Area by the worker on the Step Off Area. The Worker on the Step Off Area places each bag in a sealed cart for transport to the load out area. No bags are to be stored outside of the mini-enclosure.

All bags are to be transported through the building in clean sealed containers that have never been in a asbestos Work Area, Mini-enclosure or decontamination unit.

Mini-enclosure Decontamination: At completion of all work decontaminate the Work and Changing Rooms as set forth in Section 01711 Project Decontamination for non-friable materials.

END OF SECTION - 01529

SECTION 01560 - WORKER PROTECTION - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

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.

RELATED WORK SPECIFIED ELSEWHERE:

Respiratory Protection: is specified in Section 01562.

WORKER TRAINING:

AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the AHERA regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.

State and Local License: All workers are to be trained in compliance with Florida Statute 469.012.

Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to verify that work procedures will result in an airborne fiber level as measured in accordance with 29 CFR 1926 below 0.1 fibers per cubic centimeter as an 8 hour time weighted average (TWA). Include at least the following data for each procedure required by the work:

Date of measurements

Operation monitored

Sampling and analytical methods used and evidence of their accuracy. Number, duration and results of samples taken.

Train, in accordance with 29 CFR 1926, 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 the course 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

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 individuals ability to work in environments capable of producing heat stress in the worker.

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.

AHERA Accreditation: Submit copies of certificates from an EPA approved AHERA Abatement Workers course for each worker as evidence that each asbestos abatement worker is accredited as required by the AHERA Regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.

State and Local License: Submit evidence that all workers have been trained, certified and accredited as required by the State of Florida.

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

Training Program: Submit a course outline of the worker training course. Include date and time course was given, name and title of teacher.

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 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.

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

PART 2 - EQUIPMENT

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.

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

Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner's Representative, Project Administrator, and Owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the work area throughout the work. Thoroughly clean, decontaminate and bag 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. Thoroughly clean, decontaminate and bag goggles before removing them from work area at the end of the work.

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 and dispose of as asbestos contaminated waste at the end of the work.

ADDITIONAL PROTECTIVE EQUIPMENT:

Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the contractor for the Owner, Owner's Representative, Project Administrator, and other authorized representatives who may inspect the job site. Provide two (2) respirators and six (6) complete coveralls and, where applicable, six (6) respirator filter changes per day.

PART 3 - EXECUTION

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.

DECONTAMINATION PROCEDURES:

Require all workers to adhere to the following personal decontamination procedures whenever they leave the work area:

Type C Supplied Air Powered Air-Purifying Respirators, or Half Face Negative Pressure 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. If using a negative pressure respirator, take care in keeping filters dry.

With respirator still in place thoroughly wash 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.

WITHIN WORK AREA:

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

Workers violating worker protection standards will be given a verbal warning by the Owner's Representative. Failure to respond to verbal warnings will be case for a written notice of non-compliance which will be transmitted to the Owner for appropriate action (See attached form).

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 - 01560

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME _____ DATE _____
PROJECT ADDRESS _____
CONTRACTOR'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 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.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must 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 must have included the following:

Physical characteristics of asbestos
Health hazards associated with asbestos
Respiratory protection
Use of protective equipment
Negative air systems
Work practices including hands on or on-job training
Personal decontamination procedures
Air monitoring, personal and area

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer the Contractor.

Signature _____ Social Security No _____

Printed Name _____ Witness _____

SECTION 01561 - WORKER PROTECTION-REPAIR AND MAINTENANCE

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

This section describes the equipment and procedures for protecting workers against asbestos contamination and other workplace hazards except, for respiratory protection, where asbestos fibers are collected at the point of generation so that contamination of workers is unlikely.

This section applies only where the airborne fiber counts as measured in accordance with 29 CFR 1926 are below 0.1 fibers per cubic centimeter for an 8 hour time weighted average (TWA).

RELATED WORK SPECIFIED ELSEWHERE:

Respiratory Protection: is specified in Section 01562.

DESCRIPTION OF REQUIREMENTS:

Worker protection requirements of this section are appropriate for asbestos maintenance and repair work. This differs from asbestos abatement in that the work is not performed in an asbestos fiber contaminated area. As such, the worker decontamination procedures are carried out with a HEPA filtered vacuum cleaner rather than a shower facility.

Requirements of this section apply only when work is being performed in accordance with the limitations and requirements of the following sections of this specification:

01527 Regulated Areas
01712 Cleaning and Decontamination Procedures
01529 Operations & Maintenance Work
15254 Repair of Insulation and Lagging

WORKER TRAINING:

AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the AHERA regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.

State and Local License: All workers are to be trained, certified and accredited as required by the state of Florida.

Train: in accordance with 29 CFR 1926 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 the course to the following:

Methods of recognizing asbestos.

Health effects associated with asbestos exposure.

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

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 individuals ability to work in environments capable of producing heat stress in the worker.

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.

AHERA Accreditation: Submit copies of certificates from an EPA approved AHERA Abatement Workers course for each worker as evidence that each asbestos abatement worker is accredited as required by the AHERA Regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.

State and Local License: Submit evidence that all workers have been trained, certified and accredited as required by state or local code or regulation.

Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to verify that work procedures will result in an airborne fiber level as measured in accordance with 20 CFR 1926 below 0.1 fibers per cubic centimeter as an 8 hour time weighted average (TWA). Include at least the following data for each procedure required by the work:

Date of measurements

Operation monitored

Sampling and analytical methods used and evidence of their accuracy. Number, duration and results of samples taken

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

Training Program: Submit a course outline of the worker training course. Include date and time course was give, name and title of teacher.

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 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.

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

PART 2 - EQUIPMENT

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.

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

Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by owner's Representative, Project Administrator, and Owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the work area throughout the work. Thoroughly clean, decontaminate and bag 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. Goggles shall be thoroughly cleaned and decontaminated before being worn from one work area to another. At the end of the work, clean and decontaminate goggles and bag for storage in a properly labeled asbestos disposal bag.

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 and dispose of as asbestos contaminated waste at the end of the work.

PART 3 - EXECUTION

GENERAL:

Work and Decontamination procedures involve a person in the work area on the plastic sheet and one off the sheet. The person on the sheet carries
out the work and never leaves the sheet until the work is complete and dry decontamination procedures are completed. The person off the sheet supplies materials to and accepts material from the on-sheet person. The off sheet person never enters the work area. If the work involves more than one person then the team shall consist of two (or more) on-sheet persons and one off-sheet person.

DO NOT eat, drink, smoke, chew gum or tobacco, or apply cosmetics in the work area.

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.

AIR MONITORING:

Monitor Air as follows at all times that the work is going on:

Personal Air Samples: Collect a personal air sample on the on-sheet person at all times that work is being carried out. Collect samples at 2 liters per minute for the entire time that work is being carried out. Use cellulose ester filters with 0.8 to 1.2 micron pore size to collect samples.

RESPIRATORS:

Instruct and train each worker in proper respirator use and require that each worker always wear a respirator, properly fitted on the face, in the work area.

COVERALLS:

At the Start of Each Work Shift: Put on new disposable coveralls, new head covers, new footwear covers over street shoes, and put on a clean respirator.

All workers shall wear disposable, full-body coveralls and disposable head and footwear covers in the work area.

Follow procedures under "Dry Decontamination" whenever leaving a work area.

ADDITIONAL PROTECTIVE EQUIPMENT:

At the work site maintain 2 complete sets of protective equipment including respirators, disposable coveralls, head covers, and footwear covers for use by the Owner's Representative or the Owner.

DECONTAMINATION PROCEDURES:

Require all Workers to adhere to the following personal decontamination procedures whenever they leave the work area:

DRY DECONTAMINATION:

Complete the following before leaving any regulated area.

Each person HEPA vacuum thoroughly the other person. Use brush attachment on the HEPA vacuum.

While still wearing respirator each person remove their paper suit, turning it inside out while removing it. Roll up suit and pack in hood.

Place suits in a disposal bag.

Suck air out of bag with HEPA vacuum.

Twist the bag shut, bend over and seal with duct tape by wrapping around bag neck at least 3 times.

END OF SHIFT:

Require that each worker decontaminate according to the following procedure at the end of the days work or before removing respiratory protection.

Each person HEPA vacuum hands, hair, face, and respirator.

Each person HEPA vacuum area of respirator seal to face on the other person.

Remove respirator and, HEPA vacuum face at respirator seal and all surfaces of the respirator. HEPA vacuum any parts of hair or head covered by respirator straps.

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.

Wash respirator face piece inside and outside.

At completion of above, thoroughly wash face and hands with soap and water.

Require that each worker follow the wet decontamination procedures set forth in Section 01560 at the end of each days work before changing into street clothing.

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

Following this section is a Certificate of Worker's Acknowledgement. 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 - 01561

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME _____ DATE _____

PROJECT ADDRESS _____

CONTRACTOR'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 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.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must 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 must have included the following:

Physical characteristics of asbestos
Health hazards associated with asbestos
Respiratory protection
Use of protective equipment
Negative air systems
Work practices including hands on or on-job training
Personal decontamination procedures
Air monitoring, personal and area

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray. By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer the Contractor.

Signature _____ Social Security No _____

Printed Name _____ Witness _____

SECTION 01562 - RESPIRATORY PROTECTION

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

Instruct and train each worker involved in asbestos abatement or maintenance and repair of friable asbestos-containing materials 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 fibers until the work area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

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.

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 1926.1101.

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, Rexdal, Ontario, Standard Z180.1-1978, "Compressed Breathing Air".

ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2-1980.

NIOSH - National Institute for Occupational Safety and Health

MSHA - Mine Safety and Health Administration

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 the "Respiratory Protection Program" form at the end of this section.

Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to substantiate selection of respiratory protection proposed. Data submitted shall include at least the following for each procedure required by the work:

Date of measurements

Operation monitored

Sampling and analytical methods used and evidence of their accuracy.

Number, duration, and results of samples taken.

Resume information: Submit resume and information on training for individual monitoring the operation of supplied air respiratory systems. Submit training certifications where applicable.

AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS:

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 H or CSA Z180.1 whichever presents the more stringent quality standard:

ALLOWABLE CONTAMINANTS:

Supply air that has an asbestos concentration no greater than outside ambient conditions.

The following table sets forth the quantity of any given contaminant allowed according to the referenced standards:

	CGA Type 1 (Gaseous Air)			CSA Z180.1
CONTAMINANT	**Grade D**	**Grade E**	**Grade H**	
Carbon Monoxide, PPM/v	20	10	5	5
Carbon Dioxide, PPM/v	1000	1000	500	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, PPM/v	-	-	0.5	-
Halogenated solvents, PPM/v	-	-	1	-
Other gaseous contaminants	-	-	-	(2)
Inorganic particulates, mg./cu. meter	-	-	-	1

- 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, dichlorodi-fluoromethane, 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).

DELIVERY:

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

PART 2 - EQUIPMENT

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 and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z88.2 (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/MSHA Certification.

Non-permitted respirators Do not use negative pressure, single use, disposable or quarter face respirators.

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/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 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 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, auxiliary generator 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

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 fibers until the area has been cleared for re-occupancy in accordance with Section 01714.

Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used be powered air-purifying respirators with high efficiency filters.

Do not allow the use of negative pressure, single-use, disposable, or quarter-face respirators for any purpose.

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.

Upon Each Wearing: Require that each time an air-purifying respirator is put on, it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

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.

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), or NIOSH 7400 procedure.

For purposes of this section fibers are limited to asbestos fibers of any size as counted using either a scanning or transmission electron microscope.

Time Weighted Average (TWA) - 0.01 fibers/cubic centimeter

RESPIRATORY PROTECTION FACTOR:

Respirator Type	Protection Factor
Air purifying: Negative pressure respirator High efficiency filter Half facepiece	10

Respirator Type	Protection Factor
Powered-air purifying (PAPR): Positive pressure respirator High efficiency filter Half or Full facepiece	50
Type C supplied air: Positive pressure respirator continuous-flow Half or tight fitting full facepiece	50
Type C supplied air: Positive pressure respirator pressure demand Full facepiece	2,000

Type C supplied air: Positive pressure respirator pressure demand Full facepiece Equipped with an auxiliary positive pressure Self-contained breathing apparatus (SCBA)	10,000
Self-contained breathing apparatus (SCBA): Positive Pressure respirator Pressure demand Full facepiece	10,000

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. 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 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.

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.

RESPIRATORY PROTECTION PROGRAM:

Submit completed form "Respiratory Protection Program", found at end of this section, indicating type of respiratory protection proposed for each portion of the work.

END OF SECTION - 01562

RESPIRATORY PROTECTION PROGRAM:

Project Name _____

Location _____

Date _____

Based upon airborne asbestos-fiber counts encountered on previous projects of similar type working on materials similar to those found on the above referenced project. The following level of respiratory protection is proposed for the indicated operations to maintain an Airborne Fiber Count (as measured by OSHA Reference Method, ORM) below the specified Permissible Exposure Limit (PEL) inside the respirator face piece.

Operation	Anticipated f/cc	Respiratory Protection	Protection Factor	f/cc in Mask
Installing Sheet Plastic				
Removal of VAT & Mastic				
Removal of Pipe Insulation (Amosite)				
Removal of Fitting Insulation				
Removal of Tank & Boiler Insulation (Amosite)				
Gross Debris Removal				
Cleaning "Primary" Sheet Plastic				

Operation	Anticipated f/cc	Respiratory Protection	Protection Factor	f/cc in Mask
Cleaning "Critical" Barrier				
Removing Decontamination Unit				
Disposal at Land Fill				
Other				

The contractor certifies that to the best of his knowledge and belief the above represent a true and accurate representation of Airborne Fiber Counts to be expected for the operations indicated, and are based upon airborne fiber data from past projects with similar materials and operations.

Contractor _____

Signed by:

Signature _____ Date _____

Print Name _____

Title _____

SECTION 01563 - DECONTAMINATION UNITS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

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.

RELATED WORK SPECIFIED ELSEWHERE:

Refer to Section 01503 Temporary Facilities - Asbestos Abatement 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, 6.0 mils thick as indicated, clear, frosted, or black as indicated.

Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mils thick as indicated, frosted or black as indicated.

Duct Tape: Provide duct tape in 2" 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.

Shower Pan: Provide one piece waterproof shower pan 2'6" x 2'6" by 6" deep. Fabricate from seamless fiberglass minimum 1/16" thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seems, copper or lead with soldered seams, or a seamless liner of minimum 60 mil thick elastomeric membrane.

Shower Walls: Provide walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally support as necessary for stability.

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 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 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

Hose Bib: Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4" National Standard male hose outlet.

Shower Stall: For Wash Down Station provide leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3' X 3' square with minimum 6' high sides and back. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4'-0" above drain pan. Connect drain to a reservoir, pump water from reservoir through filters to a drain or store and use for amended water. Mount filters inside shower stall on back wall beneath hose bibb.

Lumber: Provide kiln dried lumber of any grade or species. Lumber will be in good repair without any excess nails, staples, cracks, etc. Replacement will be at the discretion of the Owner or Owner's Representative.

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.

Walk-Off Pan: Provide a walk-off pan approximately 3'x 3' by 6" deep. Fabricate similar to shower pan above.

PART 3 - EXECUTION

GENERAL:

PERSONNEL DECONTAMINATION UNIT: (Provide as indicated for projects where more than 1500 square feet and 1500 linear feet of asbestos-containing material will be disturbed.)

Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Drying 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 contamination units as necessary to reach a lighting level of 100 foot candles. Secure entry into the decon with a locked door.

Nailing decon doors/hinges is not permitted!

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 plastic flapped doorway.

Require workers to remove all 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. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.

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 all surfaces of room with sheet plastic as set forth in Section 01526 Temporary Enclosures. Authorization for this must be obtained from the Owner's Representative in writing prior to start of construction. Submit written request in accordance with Section 01632 "Product Substitutions" detailing layout and protective measures proposed.

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 posted information for all emergency phone numbers and procedures.

Provide 1 storage locker or hook per employee.

Provide 1 storage locker or hook for site visitors.

Provide all other components indicated on the contract drawings.

Air Lock: Provide an air lock between Drying Room and Changing Room. This is a transit area for workers.

Separate this room from Drying Room and Changing Room by sheet plastic flapped doorways.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the Drying and Changing Rooms with air tight walls fabricated of 6 mil polyethylene.

Drying Room: Provide a drying room as an airlock and a place for workers to dry after showering.

Construct room by providing a pan continuous with or draining to Shower Room pan. Install a freely draining wooden or non skid metal floor in pan at elevation of top of pan.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the Changing Room and Shower Room with air tight walls fabricated of 6 mil polyethylene.

Separate from Changing Room by a sheet plastic flapped doorway.

Provide a continuously adequate supply of disposable bath towels.

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.

Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the Drying Room and Air Lock with air tight walls fabricated of 6 mil polyethylene.

Provide splash proof entrances to Drying Room and Air Lock with doors arranged in the following configuration:

At each entrance to the Shower Room construct a door frame out of 2 X 4 lumber with 1 1/2" jambs (sides) and 1 1/2" head (top) and sill (bottom). Attach to this door frame two overlapping flaps of elastomeric membrane material, fastened at the head (top) and jambs (sides) (by clamping between a 1 1/2" x 3/4" batten and frame). Overlap the flaps a minimum of 6" in a direction that presents a shingle-like configuration to the water stream from the shower. Overlap sill (bottom) by 1 1/2" minimum. Arrange so that any air movement out of the Work Area will cause the flaps to seal against the door frame.

Provide shower head and controls.

Provide temporary extensions of existing hot and cold water and drain-age, 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 dispose of as asbestos-containing waste. If pumped to drain, provide 20 micron and 5 micron waste water filters in line to drain. 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 Bibb.

Air Lock: Provide an air lock between Shower Room and Equipment Room. This is a transit area for workers. Separate this room from Equipment Room by a sheet plastic 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 Equipment Room and Shower Room with air tight walls fabricated of 6 mil polyethylene.

Separate from Equipment Room by a sheet plastic flapped 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.

Provide a drop cloth layer of sheet plastic on floor in the Equipment Room for every shift change expected. Roll drop cloth layer of plastic from Equipment Room into Work Area after each shift change. Replace before next shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

Air Lock: Provide an air lock between Equipment Room and Work Area. This is a transit area for workers.

Separate this room from Equipment Room and Work Area by a sheet plastic flapped doorways.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the Equipment 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.

Decontamination Sequence: Require that all workers adhere to the following sequence when entering or leaving the Work Area.

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 such as boots, hard hats, goggles, gloves are to be stored in contaminated end of the Equipment Room.

Disposable coveralls are placed in a bag for disposal with other material.

Require that decontamination procedures found in Section 01560 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.

EQUIPMENT DECONTAMINATION UNIT: (Provide for projects where more than 1500 square feet or 1500 linear feet of asbestos-containing material.)

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. Secure entry into the decon with a locked door.

Arrange with air locks between rooms as required below.

Nailing decon doors/hinges is not permitted.

Wash Down Station: Provide an enclosed shower unit located in work area just outside Wash Room as an equipment, bag and container cleaning station.

Fabricate water proof floor extending 6' - 0" beyond Wash Down station in all directions. Install seamless waterproof membrane over area and extend over curbs on all four sides. Form curbs from 2 X 4 lumber laid on the flat.

Water proof membrane is to fabricated from elastomeric membrane.

Water proof membrane is to fabricated from minimum 10 mil polyethylene.

Do not allow water to collect on water proof membrane. Remove continuously with a wet vacuum or mops.

Wash Room: provide wash room for cleaning of bagged or containerized asbestos-containing waste materials passed from the work area.

Construct wash room of 2X wood framing and polyethylene sheeting, at least 6 mil in thickness and located so that packaged materials, after being wiped clean can be passed to the Holding Room.

Separate this room from the work area by a single flap door of 6 mil polyethylene sheeting.

Provide a drop cloth layer of plastic on floor in the Wash Room for every load out operation. Roll this drop cloth layer of plastic from Wash Room into Work Area after each load out. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

Air Lock: Provide an air lock between Wash Room and Holding Room. This is a transit area.

Separate this room from adjacent spaces by a sheet plastic flap doorway.

Separate this room from the rest of the building and adjacent spaces with air tight walls fabricated of 6 mil polyethylene.

Holding Room: provide Holding Room as a drop location for bagged asbestos-containing materials passed from the Wash Room. Construct Holding Room of 2X wood framing and polyethylene sheeting, at least 6 mil in thickness and located so that bagged materials cannot be passed from the Wash Room through the Holding Room to the Clean Room.

Separate this room from the adjacent rooms by flap doors fabricated from 1/16" +/- thick single ply elastomeric membrane material either EPDM or Neoprene.

Separate this room from the adjacent rooms by flap doors fabricated from 6 mil sheet plastic.

Air Lock: Provide an air lock between Holding Room and Clean Room. This is a transit area.

Separate this room from adjacent spaces by a sheet plastic flap doorway.

Separate this room from the rest of the building and adjacent spaces with air tight walls fabricated of 6 mil polyethylene.

Clean Room: provide Clean Room to isolate the Holding Room from the building exterior. If possible locate to provide direct access to the Holding Room from the building exterior.

Erect Critical and Primary Barriers as described in Section 01526 "Temporary Enclosures" in an existing space. If no space exists construct Clean Room of 2X wood framing and polyethylene sheeting, at least 6 mil in thickness.

Separate this room from the exterior by a single flap door of 6 mil polyethylene sheeting.

Load Out Area: The load out area is the transfer area from the building to a truck or dumpster. It may be the Clean Room of the equipment decontamination unit or a separate room or loading dock area. Erect Critical and Primary barriers as described in Section 01526 "Temporary Enclosures" in load out area.

During transfer of material from load out area erect primary barriers as described in Section 01526 "Temporary Enclosures" as necessary to seal path from load out area to truck or dumpster.

Decontamination Sequence: 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 enclosure when a removal worker is inside.

PERSONNEL DECONTAMINATION UNIT: (Provide as indicated for projects where more than 160 square feet and 260 linear feet of asbestos-containing materials will be disturbed.)

Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Pre-fabricated Shower, and 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. Remove equipment or materials through Personnel Decontamination Unit as specified. Secure entry to the decon with a locked door.

Nailing decon door/hinges is not permitted.

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 plastic flapped doorway.

Require workers to remove all 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. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked 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 01526 Temporary Enclosures. Authorization for this must be obtained from the Owner's Representative in writing prior to start of construction. Submit written request in accordance with Section 01632 "Product Substitutions" detailing layout and protective measures proposed.

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 posted information for all emergency phone numbers and procedures.

Provide 1 storage locker per employee.

Provide all other components indicated on the contract drawings.

Air Lock: Provide an air lock between Drying Room and Changing Room. This is a transit area for workers.

Separate this room from Drying Room and Changing Room by sheet plastic flapped doorways.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the Drying and Changing Rooms with air tight walls fabricated of 6 mil polyethylene.

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.

Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.
Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

At each entrance to the Shower Room construct a door frame out of 2 X 4 lumber with 1 1/2" jambs (sides) and 1 1/2" head (top) and sill (bottom). Attach to this door frame two overlapping flaps of elastomeric membrane material, fastened at the head (top) and jambs (sides) (by clamping between a 1 1/2" x 3/4" batten and frame). Overlap the flaps a minimum of 6" in a direction that presents a shingle-like configuration to the water stream from the shower. Overlap sill (bottom) by 1 1/2" minimum. Arrange so that any air movement out of the Work Area will cause the flaps to seal against the door frame.

Provide shower head and controls.

Provide temporary extensions of existing hot and cold water and drain-age, 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 use in amended water. If pumped to drain, provide 20 micron and 5 micron waste water filters in line to 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.

Air Lock: Provide an air lock between Shower Room and Equipment Room. This is a transit area for workers. Separate this room from Equipment Room by a sheet plastic 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 Equipment Room and Shower Room with air tight walls fabricated of 6 mil polyethylene.

Separate from Equipment Room by a sheet plastic flapped 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.

Provide a drop cloth layer of sheet plastic on floor in the Equipment Room for every shift change expected. Roll drop cloth layer of plastic from Equipment Room into Work Area after each shift change. Replace before next shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

Air Lock: Provide an air lock between Equipment Room and Work Area. This is a transit area for workers.

Separate this room from Equipment Room and Work Area by a sheet plastic flapped doorways.

Separate this room from the rest of the building with air tight walls fabricated of 6 mil polyethylene.

Separate this room from the Equipment 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.

Decontamination Sequence: Require that all workers adhere to the following sequence when entering or leaving the Work Area.

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 such as boots, hard hats, goggles, gloves are to be stored in contaminated end of the Equipment Room.

Disposable coveralls are placed in a bag for disposal with other material.

Require that decontamination procedures found in Section 01560 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.

EQUIPMENT DECONTAMINATION UNIT: (Using personnel decontamination unit.)

Use personnel decontamination unit as an Equipment Decontamination Unit. Do not allow personnel to enter or exit work area through the Decontamination Unit when materials or waste is being decontaminated.

Wash Down Station: Provide an enclosed shower unit located in work area just outside the Equipment Room as an equipment, bag and container cleaning station.

Decontamination Sequence: take all equipment or material from the work area through the Decontamination Unit according to the following procedure:

At washdown station, thoroughly wet-clean contaminated equipment or sealed polyethylene bags and pass into shower unit.

When passing equipment or containers into the shower unit, close all doorways of the Decontamination Unit, other than the doorway between the Washdown Station and the Wash Room. Keep all outside personnel clear of the Decontamination Unit.

Once inside the shower, wet-clean the bags and/or equipment.

When cleaning is complete pass items into the clean room. Close all doorways except the Clean Room and outside.

Workers from the building exterior enter the clean room 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 enclosure when a removal worker is inside.

REMOTE DECONTAMINATION UNIT: Provide as indicated for projects where more than 10 s.f./l.f. of asbestos-containing materials will be disturbed. Provide pre-fabricated aluminum self-contained shower unit. Construct a Change Room using 2 X 4 framing and a 6 mil polyethylene and connect to shower unit. Use opaque poly if the unit is visible by the public. Workers shall decontaminate in accordance with Section 01560.

CONSTRUCTION OF THE DECONTAMINATION UNITS:

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 all areas of the decontamination units. Use only clear plastic to cover floors.

Flap Doors: Fabricated from two (2) overlapping sheets with openings a minimum of three feet (3') wide. Configure so that sheeting overlaps adjacent surfaces. Weigh 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. Provide a minimum of three feet (3') between doors to airlocks.

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 hardboard or 1/2 inch plywood "ceiling" with polyethylene sheeting, at least 4 mil in thickness covering the top of the "ceiling".

Visual Barrier: Where the decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 4 mil in thickness so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs covered with minimum 1/4 inch thick hardboard or 1/2 inch plywood. Where the solid barrier is provided, sheeting need not be opaque.

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.

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.

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:

Provide signs in both English and Spanish.

LEGEND

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD
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:

Provide signs in both English and Spanish.

LEGEND	NOTATION
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

TUNNEL CONSTRUCTION (UNSECURED AREA)

Construct tunnels of 2X4 studs covered with minimum 1/2" plywood. Dimensions of tunnel should be a minimum of 8 foot height, 4 foot width. Prepare interior of tunnel in accordance with Section 01526 as part of Work Area. Decontaminate area as described Section 01711.

TUNNEL CONSTRUCTION (SECURED AREA)

At the discretion of the Owner's Consultant, soft sided tunnels may be constructed in secure area. Soft sided tunnels will be constructed in a similar manner as above with the exception of plywood tops and sides.

END OF SECTION - 01563

SECTION 01601 - MATERIALS AND EQUIPMENT - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS

General provisions of Contract, including General and other Division-1 Specification Sections, apply to this Section.

SUMMARY

This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the Project.

The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."

Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."

DEFINITIONS

Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.

"Products" are items purchased for use in performing the work or for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

"Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

"Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

"Equipment" are products that may be either operational or fixed.

Operational Equipment: are products with operating parts, whether motorized or manually operated, that requires temporary or permanent service connections such as wiring or piping.

Fixed Equipment: are products necessary for accomplishing the work that are used as a temporary facility during the work and removed afterward.

SUBMITTALS

Required submittals: A general listing of products requiring submittals is included at the end of Section 01301 "Submittals." This listing may not be complete. Submittal requirements are found in each specification section. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed.

Form: Prepare the product listing schedule with information on each item tabulated under the following column headings:

Related Specification Section number.
Generic name used in Contract Documents.
Proprietary name, model number and similar designations.
Manufacturer's name and address.
Supplier's name and address.
Installer's name and address.
Projected delivery date, or time span of delivery period.

Owner's Representative's Action: The Owner's Representative will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. The Owner's Representative's response will include the following:

A list of unacceptable product selections, containing a brief explanation of reasons for this action.

QUALITY ASSURANCE

Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

Schedule delivery to minimize long-term storage at the site and to overcrowding of construction spaces.

Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.

Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.

Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

PRODUCT SELECTION

General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.

Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:

Or Equal: In the specification, two or more kinds, types, brands, or manufacturers of material are named, are regarded as the required standard of quality, and are presumed to be equal. The contractor may select one of these items, or if the contractor desires to use any kind, type, brand, or manufacture of material other than those named in the specifications, he shall indicate in writing, when requested, and prior to award of contract, what kind, type, brand, or manufacturer is included in the base bid for the specified item.

Non-proprietary Specifications: When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

PART 3 - EXECUTION

INSTALLATION OF PRODUCTS

Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION - 01601

SECTION 01632 - PRODUCT SUBSTITUTIONS - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS

General provisions of Contract, including General and other Division-1 Specification Sections, apply to this Section.

SUMMARY

This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."

Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

Procedural requirements governing the Contractor's selection of products and product options are included under Section "Materials and Equipment."

DEFINITIONS

Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:

Revisions to Contract Documents requested by the Owner or Owner's Representative.

Specified options of products and construction methods included in Contract Documents.

The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

SUBMITTALS

Substitution Request Submittal: Requests for substitution will be considered if received within 3 weeks prior to beginning work affected by the substitution. Requests received less than 3 weeks before commencement of affected Work may be considered or rejected at the discretion of the Owner's Representative.

Submit 3 copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals.

Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:

Product Data, including Drawings and descriptions of products, fabrication, installation procedures, and manufacturer's instructions for use.

Samples, where applicable or requested.

A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.

Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.

A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.

Cost information, including a proposal of the net change, if any in the Contract Sum.

Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

Owner's Representative's Action: Within one week of receipt of the request for substitution, the Owner's Representative will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, which ever is later, the Owner's Representative will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS

SUBSTITUTIONS

Conditions: The Contractor's substitution request will be received and considered by the Owner's Representative when one or more of the following conditions are satisfied, as determined by the Owner's Representative; otherwise requests will be returned without action except to record noncompliance with these requirements.

Extensive revisions to Contract Documents are not required.

Proposed changes are in keeping with the general intent of Contract Documents.

The request is timely, fully documented and properly submitted.

The request is directly related to an "or equal" clause or similar language in the Contract Documents.

The specified equipment, product or method of construction cannot be provided within the Contract Time. The request will not be considered if the equipment, product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

The specified equipment, product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.

A substantial advantage is offered the Owner, in terms of safety, cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Owner's Representative for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.

The specified equipment, product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.

The specified equipment, product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.

The specified equipment, product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.

The Contractor's submittal and Owner's Representative's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION (Not Applicable).

END OF SECTION - 01632

SECTION 01701 - PROJECT CLOSEOUT - ASBESTOS ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS

General provisions of Contract, including General and other Division-1 Specification Sections, apply to this Section.

SUMMARY

This Section specifies administrative and procedural requirements for project closeout, including but not limited to:

Inspection procedures.
Project record document submittal.
Submittal of warranties.
Final cleaning.

Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions-2 through - 16.

SUBSTANTIAL COMPLETION

Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documents for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

Advise Owner of pending insurance change-over requirements.

Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.

Make final change-over of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of change-over in security provisions.

Complete start-up testing of systems. Discontinue or change over and remove temporary facilities from the site, along with construction tools, and similar elements.

Complete final clean up requirements, including painting. Touch-up or paint to the nearest breakline and otherwise repair and restore marred exposed finishes.

Inspection Procedures: On receipt of a request for inspection, the Owner's Representative will either proceed with inspection or advise the Contractor of unfilled requirements. The Owner's Representative will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

The Owner's Representative will repeat inspection when requested and assured that the Work has been substantially completed.

Results of the completed inspection will form the basis of requirements for final acceptance.

FINAL ACCEPTANCE

Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

Submit the final payment request with 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 Representative's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Owner's Representative.

Submit consent of surety to final payment.

Submit a final liquidated damages settlement statement.

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

Reinspection Procedure: The Owner's Representative will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Owner's Representative.

Upon completion of reinspection, the Owner's Representative will prepare a certificate of final acceptance, or advice the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

If necessary, reinspection will be repeated.

RECORD DOCUMENT SUBMITTALS

General: 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 Owner's Representative's reference during normal working hours.

Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in the actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.

Upon completion of mark-up, submit complete set of record Product Data to the Owner's Representative for the Owner's records.

Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with 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

FINAL CLEANING

General: General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".

Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.

Remove labels that are not permanent labels.

Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

Clean the site, including landscape development areas, of rubbish, litter and foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

Repair finishes damaged by spray cement, tape, nails, back to original condition. Paint to match all finishes where paint has been disturbed by abatement activities.

Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION - 01701

SECTION 01711 - PROJECT DECONTAMINATION

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF REQUIREMENTS:

General: Decontamination of the Work Area following asbestos abatement.

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 02081 Removal of Asbestos-Containing Materials
Section 09805 Encapsulation 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 01714 Work Area Clearance.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

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 01526
Decontamination Unit erected by work of Section 01563
Pressure Differential System installed by work of Section 01513

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.

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 floor and two layers on walls.

Critical Barrier: An airtight barrier between the work area and other portions of the building or the outside.

Critical Barrier Sheeting: over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.

Decontamination Units: for personnel and equipment in operating condition.

Pressure Differential System: in operation.

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 Air (HEPA) filtered vacuum. (Note: A HEPA vacuum may fail if used with wet material.) Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

Remove All Filters in Air Handling System(s) and dispose of as asbestos-containing waste in accordance with requirements of Section 02084 Disposal of Asbestos-Containing Waste Material.

Wait 96 Air Changes to allow HEPA filter exhaust units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure differential system in operation for the entire 96 air change period.

SECOND CLEANING:

Second Cleaning: Carry out a second cleaning of all surfaces in the work area in the same manner as the first cleaning.

Encapsulation of substrate: Perform encapsulation of substrate, where required, at this time. Maintain pressure differential system in operation during encapsulation work. Perform work only after meeting the following requirements:

Surfaces to be covered have met the requirements for a visual inspection in this section.

Airborne fiber counts in the Work Area are at or below 0.01 fibers per cubic centimeter as measured by phase contrast microscopy.

Removal of Primary Barriers:

Immediately following the second cleaning of the primary plastic, remove all Primary Barrier sheeting 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 or the outside.

Critical Barrier Sheeting: over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.

Decontamination Unit: for personnel in operating condition.

Pressure Differential System: maintain in continuous operation.

THIRD CLEANING:

Third cleaning: Carry out a third cleaning of all surfaces in the work area in the same manner as the first cleaning immediately after removal of primary plastic. This cleaning is now being applied to existing room surfaces. Take care to avoid water marks or other damage to surfaces.

Aggressive Cleaning: At the completion of the above cleaning sweep entire work area including walls, ceilings, ledges, floors and other surfaces in the work area with exhaust from forced air equipment (leaf blower with approximately 1 horsepower electric motor or equivalent). Do not direct forced air equipment at any seal in any critical barrier. If any debris or dust is found repeat the cleaning. Continue this process until no debris dust or other material is found while sweeping of all surfaces with forced air equipment.

Cover carpeting in the work area with 6 mil polyethylene during aggressive cleaning procedures. Seal plastic to baseboards with duct tape.

Cleaning Carpeting: At the completion of cleaning of all surfaces except carpeting, HEPA vacuum carpeting designated to remain in work areas using a floor cleaning attachment adjusted so that rubber skirting is in contact with carpet surface. Use a passive (non power brush type) floor attachment with rubber floor seals and adjustable above-floor height. Completely clean carpeting in one direction with each pass of the floor attachment overlapping the previous pass by one-half the attachment width. At the completion of one such cleaning, vacuum clean in the same manner in a direction at right angles to the initial cleaning.

Wait 96 Air Changes to allow HEPA filtered exhaust units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure differential system in operation for the entire 96 air change period.

FINAL CLEANING:

Final Cleaning: Carry out a final cleaning of all surfaces in the work area in the same manner as the previous cleaning.

Aggressive Cleaning: At the completion of the above cleaning sweep entire work area including walls, ceilings, ledges, floors and other surfaces in the work area with exhaust from forced air equipment (leaf blower with approximately 1 horsepower electric motor or equivalent). Do not direct forced air equipment at any seal in any critical barrier. If any debris or dust is found repeat the final cleaning. Continue this process until no debris dust or other material is found while sweeping of all surfaces with forced air equipment.

Wait 96 Air Changes to allow HEPA filtered exhaust units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure differential system in operation for the entire 96 air change period.

VISUAL INSPECTION:

96 Air Changes After Final Clean Perform a Complete Visual Inspection of the entire work area including: all surfaces, ceiling, walls , floor, decontamination unit, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. During visual inspection sweep entire work area including walls, ceilings, ledges, floors, and other surfaces in the room with exhaust from forced air equipment (leaf blower with approximately 1 horsepower electric motor or equivalent). If any debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, and if after sweeping of all surfaces with leaf blower, no debris, residue, dust or other materia is found, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the certification, by Project Administrator.

Temporary lighting: Provide a minimum of 100 foot candles of lighting on all surfaces in the areas to be subjected to visual inspection. Provide hand held lights providing 150 foot candles at 4 feet capable of reaching all locations in work area.

Lifts: Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

FINAL AIR SAMPLING TEM:

Phase Contrast Microscopy (PCM): After the work area is found to be visually clean, air samples may be taken and analyzed in accordance with the procedure for phase contrast microscopy set forth in Section 01714 Work Area Clearance:

If Release Criteria are not met, repeat Final Cleaning and continue decontamination procedure from that point.

If Release Criteria are met continue with the air testing by transmission electron microscopy.

Transmission Electron Microscopy (TEM): After the work area is found to be visually clean and PCM air sampling completed, TEM air samples will be collected and analyzed in accordance with the procedure for transmission electron microscopy set forth in Section 01714 Work Area Clearance:

If Release Criteria are not met, repeat Final Cleaning and continue decontamination procedure from that point.

If Release Criteria are met, proceed to work of article on removal of work area isolation.

FINAL AIR SAMPLING PCM:

Work Area Size Limitation: PCM without TEM sampling will be used to clear work areas where the asbestos-containing materials involved in the work are below the following size limitations:

Less than or equal to 160 square feet,or 260 linear feet in each contiguous work area. The Owner reserves the right to require TEM clearance sampling on any work area.

Phase Contrast Microscopy (PCM): After the work area is found to be visually clean, air samples will be taken and analyzed in accordance with the procedure for phase contrast microscopy set forth in Section 01714 Work Area Clearance:

If Release Criteria are not met, repeat Final Cleaning and continue decontamination procedure from that point.

If Release Criteria are met, proceed to work of section on removal of work area isolation.

REMOVAL OF WORK AREA ISOLATION:

After all requirements of this section and Section 01714 Work Area Clearance have been met:

Shut down and remove the pressure differential system. Seal HEPA filtered exhaust units, HEPA vacuums and similar equipment with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area.

Remove personnel decontamination unit.

Remove the Critical Barriers separating the work area from the rest of the building. Remove any small quantities of residual material found upon removal of the plastic sheeting with wet wiping, HEPA filtered vacuum cleaners and local area protection. If significant quantities, as determined by the Owner's Representative, are found then the entire area affected shall be decontaminated as specified in Section 01712 Cleaning & Decontamination Procedures.

Remove all equipment, materials, debris from the work site.

Dispose of all asbestos-containing waste material as specified in Section 02084 Disposal of Asbestos-Containing Waste Material.

SUBSTANTIAL COMPLETION OF ABATEMENT WORK:

Asbestos Abatement Work is Substantially Complete upon meeting the requirements of this section and Section 01714 Work Area Clearance, including submission of:

Certificate of Visual Inspection

Receipts Documenting proper disposal as required by Section 02084 Disposal of Asbestos-Containing Waste Material.

Punch list detailing repairs to be made and incomplete items.

CERTIFICATE OF VISUAL INSPECTION:

Following this section is a "Certificate of Visual Inspection". This certification is to be completed by the Contractor and certified by the Project Administrator. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

END OF SECTION - 01711

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section 01711 "Project Decontamination" the contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and has found no dust, debris or residue.

by: (Signature_____ Date_____

(Print Name)_____

(Print Title)_____

PROJECT ADMINISTRATOR CERTIFICATION

The Project Administrator hereby certifies that he has accompanied the contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the contractor's certification above is a true and honest one.

by: (Signature)_____ Date_____

(Print Name)_____

(Print Title)_____

SECTION 01712 - CLEANING AND DECONTAMINATION PROCEDURES

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Division-1 Specification sections apply to work of this Section.

DESCRIPTION OF WORK:

The work includes the cleaning and decontamination of all building surfaces (floors, walls, ceilings) within the designated work area.

The work includes the cleaning and decontamination of all equipment located within the designated work areas.

The work includes the cleaning and decontamination of furniture and/or objects.

The work includes the cleaning and HEPA vacuuming of V.A.T. debris and removal of intact tiles which have been released from substrate.

RELATED WORK SPECIFIED ELSEWHERE:

Work Area Clearance: Specified in Section 01714

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

GENERAL:

Complete the following before start of work of this section:

01513 Negative Pressure System

01526 Temporary Enclosures

01527 Regulated Areas

01561 Worker Protection-Repair and Maintenance

01562 Respiratory Protection

01563 Decontamination Units

WET CLEANING:

Accomplish wet cleaning during decontamination with paper towels or disposable rags:

Immerse paper towel or rag in bucket of water with surfactant or diluted removal encapsulant.

Wring out,

Fold into quarters,

Wipe surface once and refold to a fresh face of cloth. Proceed in this manner until all available faces of paper towel or rag have been used.

Dispose of paper towel or rag,

Do not place rag back in bucket to rinse out or for any other purpose. If a used towel or rag comes in contact with water, empty bucket and refill.

Material adhered to a surface with removal encapsulant may require the application of additional removal encapsulant to facilitate cleaning.

REMOVAL OF ASBESTOS-CONTAINING DEBRIS

Work of this section is limited to the cleanup of a small quantity of amassed debris which has fallen from an architectural finish, fireproofing or thermal insulation on pipes boilers and other thermal equipment.

Remove asbestos-containing debris and decontaminate the area involved using the following sequence:

Shut down all ventilation into room.

Seal entry to work area with 4 mil polyethylene. Slit polyethylene for entry. Install a flap to automatically cover the slit; tape slit closed after entry.

Start HEPA vacuum before entering the area.

Use the HEPA vacuum to clean a path at least 6 feet wide from the entry point of the work area to the site of the fallen material.

Remove all small debris with the HEPA vacuum.

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

Pick up small pieces and place in the bottom of a 6 mil polyethylene disposal bag conforming to the requirements of Section 02084 of these specifications. Place pieces in the bag without dropping and avoiding unnecessary disturbance and release of material.

Remove all remaining visible debris with HEPA vacuum.

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

Place a 6 mil polyethylene dropcloth in accordance with Section 01527, Local Area Protection, immediately on top of the HEPA vacuumed area before performing any repair work on site from which fallout occurred.

HEPA vacuum the site from which material fell removing all loose material which can be removed by the vacuum's suction.

Repair or remove remaining material.

HEPA vacuum ladder and/or any tools used and pass out of the work area.

HEPA vacuum all surfaces in the room starting at the top of wall and working downward to the floor. Then start at 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.

Secure area from occupancy until air monitoring results per Section 01714 indicate that area is safe for reoccupancy.

CLEANING AND DECONTAMINATING OBJECTS

Perform all work decontaminating objects wherever possible on a plastic drop sheet installed in conformance with Section 01527.

HEPA vacuum all surfaces of object and immediate area before moving the object.

Pick up object, if possible, and HEPA vacuum all surfaces.

Hand to off-sheetworker who will wet clean object, if possible, and place in storage location.

Decontaminate area where object was located by HEPA vacuuming twice, in two perpendicular directions. Wet clean if necessary to remove any debris.

Return object to its original location.

DECONTAMINATION OF ROOMS:

Shut down all ventilation into space.

Seal entry to work area with 4 mil polyethylene. Slit polyethylene for entry. Install a flap to automatically cover the slit; tape slit closed after entry.

Install negative air system in accordance with Section 01513.

Short Cycle Negative Air Machine in space by operating so that discharge from machine is into space. Use one negative air machine for each 2500 cubic feet.

HEPA vacuum all surfaces n the room starting at the ceiling, then top of wall and working downward to the floor.

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.

Operate Negative Air Machine in space for 24 hours minimum.

At completion of decontamination work, workers decontaminate in accordance with Section 01561.

Secure area from occupancy until air monitoring results per Section 01714 indicate area is safe for reoccupancy.

END OF SECTION - 01712

SECTION 01714 - WORK AREA CLEARANCE

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and and other Division-1 Specification sections, apply to work of this section.

Visual Inspection: required as a prerequisite of air testing is set forth in Section 01711 Project Decontamination.

Air Monitoring: performed by the owner during abatement work is described in Section 01410 Test Laboratory Services.

SUMMARY

Not in Contract Sum: This section describes work being performed by the owner. This work is not in the Contract Sum. The Owner's Representative will be providing these services.

This section sets forth required post-abatement airborne asbestos concentrations in the work area and describes testing procedures the Owner will use to measure these levels.

CONTRACTOR RELEASE CRITERIA:

The Asbestos Abatement Work Area is Cleared when the work area is visually clean and airborne asbestos structure concentrations have been reduced to the level specified below.

VISUAL INSPECTION:

Work of this section will not begin until the visual inspection described in Section 01711 Project Decontamination has been completed and certified by the Project Administrator.

AIR MONITORING:

To determine if the elevated airborne asbestos structure concentration encountered during abatement operations has been reduced to the specified level, the Owner will secure samples and analyze them according to the following procedures.

Aggressive sampling procedures as described below will be followed.

PCM samples will be secured as indicated below. If the area meets the clearance criteria TEM sampling will proceed.

Aggressive sampling procedures will be repeated.

TEM Samples will be secured and analyzed as indicated below.

Work Area Clearance: upon meeting the TEM clearance requirements the work of Section 01711 Project Decontamination can continue.

AGGRESSIVE SAMPLING:

All Air Samples will be taken using aggressive sampling techniques as follows:

Before sampling pumps are started the exhaust from forced air equipment (leaf blower with an approximately 1 horsepower electric motor) will be swept against all walls, ceilings, floors, ledges and other surfaces in the room. This procedure will be continued for 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 2 meters above floor, directed toward ceiling and operated at low speed for the entire period of sample collection.

Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors of vents.

After air sampling pumps have been shut off, fans will be shut off.

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.

PHASE CONTRAST MICROSCOPY:

In each homogeneous work area after completion of all cleaning work, a minimum of 7 samples will be taken and analyzed as follows:

Samples will be collected on 25 mm. cassettes with the following filter media:

PCM: 0.8 mixed cellulose ester in a cassette with a conductive extension cowl.

Location Sampled	Number of Samples	Analysis Method	Detection Limit Fibers/cc.	Minimum Volume (Liters)	Rate LPM
Each Work Area	5	PCM	0.01	1,200	1-10
or					
Each Room of Work Area	1 (5 min.)	PCM	0.01	1,200	1-10
Work Area Blank	1	PCM	0.01	0	Open for 30 seconds
Laboratory Blank	1	PCM	0.01	0	Do Not Open

Analysis: Fibers on each filter will be measured using the NIOSH Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987.

Fibers: referred to in this section include fibers regardless of composition as counted by the phase contrast microscopy method used.

Split Sample: One work area sample will be split and both halves analyzed separately for duplicate analysis.

Release Criteria: Decontamination of the work site is complete when every work area sample is at or below the Detection Limit above. If any sample is above the Detection Limit then the decontamination is incomplete and recleaning per section 01711 Project Decontamination is required.

TRANSMISSION ELECTRON MICROSCOPY:

In each homogeneous work area after completion of all cleaning work, a minimum of 13 samples will be taken and analyzed as follows:

Location Sampled	Number of Samples	Analysis Method	Analytical Sensitivity Fibers/cc.	Recommended Volume (Liters)	Rate LPM
Each Work Area	5	TEM	0.005	1,300-1,800	1-10
Outside Each Work Area	5	TEM	0.005	1,300-1,800	1-10
Work Area Blank	1	TEM	0.005	0	Open for 30 Seconds
Outside Blank	1	TEM	0.005	0	Open for 30 Seconds
Laboratory Blank	1	TEM	0.005	0	Do Not Open

Analysis: will be performed using the analysis method set forth in the AHERA regulation 40 CFR Part 763 Appendix A.

Asbestos Structures: referred to in this section include asbestos fibers, bundles, clusters or matrices as defined by method of analysis.

Release Criteria: Decontamination of the work site is complete if either of the following two sets of conditions are met:

Work Area samples are below filter background levels

All work area sample volumes are greater than 1,199 liters for a 25 mm. sampling cassette.

The average concentration of asbestos on the five work area samples does not exceed the filter background level of 70 structures per square millimeter of filter area.

Work Area samples are not statistically different from Outside samples

All sample volumes except for blanks are greater than 560 liters for a 25 mm. sampling cassette.

The average asbestos concentration of the three blanks is below the filter background level of 70 structures per square millimeter of filter area.

Average asbestos concentrations in Work Area samples are not statistically different from Outside samples, as determined by the Z-test calculation found in 40 CFR Part 763, Subpart E, Appendix A (Z is less than or equal to 1.65)

If these conditions are not met then the decontamination is incomplete and the cleaning procedures of Section 01711 shall be repeated.

Termination of Analysis: if the 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 collected.

LABORATORY TESTING:

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 at the job site, so that verbal reports on air samples can be obtained immediately. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the Owner's Representative, the Owner and the Contractor.

TRANSMISSION ELECTRON MICROSCOPY:

Samples will be sent by overnight courier for analysis by transmission electron microscopy. Samples will not be carried on weekends, so that samples shipped on Friday will arrive on the following Monday. Verbal results will normally be available during the 5th working day after receipt of samples by the laboratory. The laboratory is capable of analyzing a maximum of 13 such samples from this project at any one time. All transmission electron microscopy results will be available to the Contractor.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION - 01714

SECTION 02063 - DEMOLITION OF ASBESTOS CONTAMINATED MATERIALS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Division-1 Specification sections, apply to work of this section.

SUMMARY OF WORK:

Work of this section includes removal and disposal of all non-asbestos-containing material including but not limited to:

- Ceiling system and supports
- Removal of contaminated carpeting
- Lights, ceiling mounted equipment
- Drywall or plaster partitions
- Fibrous glass insulation
- Other contaminated building materials

PART 2 - PRODUCTS

Unlabeled Clear Bags: Provide clear 6 mil thick leak-tight polyethylene bags with no label.

Disposal Bags: Provide disposal bags as described in Section 02084 "Disposal of Asbestos-Containing Waste."

PART 3 - EXECUTION

Before beginning work of this section comply with:

01503 Temporary Facilities - Asbestos Abatement
01513 Pressure Differential System
01563 Decontamination Units
01526 Temporary Enclosures
01560 Worker Protection - Asbestos Abatement
01562 Respiratory Protection

CEILING SYSTEM:

Non-Asbestos Ceiling Tiles: Remove sufficient ceiling tiles to gain access to top of ceiling system. Mist top of tiles with amended water. Wet sufficiently to thoroughly soak debris, but not cause dripping. Remove ceiling tiles and dispose of as asbestos-containing waste. Metal or other hard durable tiles may be cleaned in wash down station. Bag washed tiles in unlabeled clear 6 mil bags. Dispose of tiles as non-asbestos waste.

Bag debris washed off tiles in properly labeled asbestos disposal bags. Dispose of debris as asbestos-containing waste as set forth in Section 02084 "Disposal of Asbestos-Containing Waste Material."

Support System: Remove hangers, tracks, T-bars, etc. Decontaminate in Wash Down Station. Wrap in clear 6 mil sheet plastic. Dispose of as non-asbestos waste.

Lights, Ceiling Mounted Equipment: Remove lights and ceiling mounted equipment. Decontaminated in wash down station. Wrap in clear 6 mil plastic and store as directed by Owner's Representative.

CARPETING:

Thoroughly wet asbestos contaminated carpeting to be removed prior to cutting to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or encapsulant. Saturate material completely without causing excess dripping. Allow time for water or encapsulant to penetrate material thoroughly. Spray material repeatedly during the work process to maintain a continuously wet condition. Roll up carpeting while simultaneously spraying amended water or encapsulant to minimize dispersal of asbestos fibers into the air.

FIBROUS GLASS INSULATION:

Thoroughly wet asbestos-contaminated insulation to be removed to reduce fiber dispersal into air. Spray material repeatedly during removal.

Remove saturated asbestos contaminated material 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, 6 mil minimum thickness. Seal bags, clean outside and move to washdown station adjacent to material decontamination unit.

AIRBORNE FIBER LEVELS:

Airborne Fiber Levels: Maintain an airborne fiber levels less than that indicated in Section 01410 "Air Monitoring-Test Laboratory Services".

END OF SECTION - 02063

SECTION 02081 - REMOVAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF THE WORK:

Large Scale Work: Use provisions of this section when large scale work is to be performed on asbestos-containing materials. Work is considered large scale when:

Removal of more than ten square feet (10 sq. ft.) of lift-out ceiling tile is involved in the work.

Removal of more than ten square feet (10 sq. ft.) of z-spline or adhered tile is involved in the work.

Removal of more than ten square feet (10 sq. ft.), of an architectural finish or fireproofing is involved in the work.

Removal of more than ten square feet (10 sq. ft.), whichever is less, of pre-formed plaster or air cell pipe insulation no greater than six inches (6 in.) in diameter is involved in the work.

Removal of more than ten square feet (10 sq. ft.), of boiler gasket material is involved in the work.

Removal of more than ten square feet (10 sq. ft.) o, of flexible duct connectors is involved in the work.

Removal of more than twenty-five linear feet (25 lin. ft.), whichever is less, of pre-formed plaster or air cell type pipe insulation greater than six inches (6 in.) in diameter is involved in the work.

Removal of more than ten square feet (10 sq. ft.) of boiler and/or breeching insulation is involved in the work.

Removal of more than ten square feet (10 sq. ft.) of equipment/tank insulation.

Removal of more than ten square feet (10 sq. ft.) of job molded plaster pipe or fitting insulation is involved in the work.

Removal, drilling or otherwise abrading more than ten square feet (10 sq. ft.) of floor tile, cement asbestos board etc.

Removal of more than ten square feet (10 sq. ft.) of interior cement board.

Removal of fire doors and lab tables disturbing more than ten square feet (10 sq. ft.) of ACM.

Removal of more than ten square feet (10 sq. ft.) of fibrous wall board.

Removal of light fixtures and other ceiling mounted equipment disturbing more than ten square feet (10 sq. ft.) of ACM.

Removal of more than ten square feet (10 sq. ft.) of acoustic plaster and/or fireproofing.

RELATED WORK SPECIFIED ELSEWHERE:

Removal of asbestos-containing floor tile is specified in Section 02085.

Removal of exterior asbestos-containing material is specified in Section 02086.

Removal of wall partitions, carpeting, and fibrous glass insulation is specified in Section 02063.

Installation of Critical and Primary Barriers, and work area isolation procedures are set forth in Section 01526.

Project Decontamination procedures after removal of the secondary barrier are specified in Section 01711.

Disposal of asbestos-containing waste is specified in Section 02084.

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 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, encapsulating material and solvent 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 6.0 mils thick as indicated, clear, frosted, or black as indicated.

Duct Tape: Provide duct tape in 2" widths, 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 as required by Section 02084 Disposal of Asbestos-Containing Waste Material.

Fiberboard Drums: Provide heavy duty leak-tight fiberboard drums with tight sealing locking metal tops.

Paper board Boxes: Provide heavy duty corrugated paper board boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

PART 3 - EXECUTION

SECONDARY BARRIER:

Secondary Barrier: Over the Primary Barrier, install as a drop cloth a clear 6 mil sheet plastic in all areas where asbestos removal work is to be carried out. Completely cover floor with sheet plastic. Where the work is within 10'-0" of a wall extend the Secondary Barrier up wall to ceiling. Support sheet plastic on wall with duct tape, seal top of Secondary plastic to Primary Barrier with duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall support as necessary to support sheet plastic and prevent its falling during removal operations.

Install Secondary Barrier at the beginning of each work shift. Install only sufficient plastic for work of that shift.

Remove Secondary Barrier at end of each work shift or as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags. Keep material on sheet continuously wet until bagged.

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

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.

GENERAL PROCEDURE FOR WET REMOVAL OF ACM:

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 installation which has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or use injection equipment to wet material under the covering. Where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation 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 material 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.

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

CEILING SYSTEM:

Ceiling Tiles: Remove sufficient ceiling tiles to gain access to top of ceiling system. Mist top of tiles with amended water. Wet sufficiently to thoroughly soak tile and debris, but not cause dripping. Remove ceiling tiles and place, while still wet, in a labeled disposal bag. Dispose of as asbestos-containing waste as per section 02084.

Support System: Remove hangers, tracks, T-bars, etc. Decontaminate in Wash Down Station or dispose of as asbestos-containing waste. If cleaned and decontaminated, wrap in clear 6 mil sheet plastic. Dispose of as non-asbestos waste.

Fireproofing or Architectural Finish on Scratch Coat: Spray asbestos-containing fireproofing or architectural acoustic finish with a fine mist of amended water or removal encapsulant. Allow time for amended water or removal encapsulant to saturate materials to substrate. Do not over saturate to cause excess dripping. Scrape materials from substrate. Remove materials in manageable quantities and control the descent to staging or floor below, if over 20' use drop chute to contain material through decent. If using amended water, spray mist surface continuously during work process. If using removal encapsulant follow manufacturer's written instructions. Remove residue remaining on scratch coat after scraping using stiff nylon bristled hand brush. Use high pressure washer only with written authorization of Owner's Representative. If a removal encapsulant is used remove residue completely before encapsulant dries. If substrate dries before complete removal of residue re-wet with amended water or removal encapsulant.

Fireproofing or Architectural Finish on Wire Lath: Spray asbestos-containing fireproofing or architectural acoustic finish with a fine mist of amended water or removal encapsulant. Allow time for amended water or removal encapsulant to completely saturate material. Do not over saturate to cause excess dripping. If surface of material has been painted or otherwise coated cut small holes as required and apply amended water or removal encapsulant from above. Cut wire lath into 2' X 6' sections and cut hanger wires. Roll or fold up complete with asbestos-containing material and hand place in container. Do not drop on floor. After removal of lath and asbestos-containing material remove any overspray on decking and structure above using stiff nylon bristled brush. Use high pressure washer only with written authorization from Owner's Representative. Use one of the following methods for containing waste.

Corrugated paper board box. When box is full duct tape closed and place in disposal bag.

Wrap material in felt and place in fiberboard drum lined with two disposal bags. Use caution to insure that all edges of wire lath that could cut plastic are covered with felt.

Place material directly in a steel drum. Seal drums when full with leak-tight seal. Drum is to be leak-tight in any orientation.

Pipe Insulation: Spray with a mist of amended water or removal encapsulant. Allow amended water or removal encapsulant to saturate material to substrate. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Cut bands holding preformed pipe insulation, slit jackets at seams, remove and hand-place in a disposal bag. Remove job molded fitting insulation in chunks and hand place in a disposal bag. Do not drop to floor. Remove any residue on pipe or fitting with stiff bristle nylon hand brush. In locations 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 6" from the point where it contacts the asbestos-containing insulation.

END OF SECTION - 02081

SECTION 02082 - REMOVAL OF ASBESTOS-CONTAMINATED SOIL

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and other Division-1 Specification sections, apply to work of this section.

RELATED WORK SPECIFIED ELSEWHERE:

Installation of decontaminated units is specified in Section 01563.

Installation of critical barriers are set forth in 01526.

Installation of pressure differential system is specified in Section 01513.

Disposal of asbestos-contaminated soil is specified in Section 02084.

PART 2 - PRODUCTS (NOT APPLICABLE)

Amended water and Removal Encapsulant are specified in Section 02081.

Encapsulation of soil is specified in Section 09805.

PART 3 - EXECUTION

Asbestos-Contaminated Soils: Spray mist soil, remove the top two inches (2") of soil where debris is located and twelve inches beyond and place in disposal bags. Start removal at the point of work farthest from the entrance to the soil floor area and proceed toward the entrance. Do not permit traffic into the fresh soil surface. Arrange negative air system so that air flow is the starting point of work toward the entrance. Where debris is below 2" soil depth remove 2" of soil below debris.

Dry Soils: Use the same procedure for dry soils, except saturate soil with amended water or a removal encapsulant as specified in other Division 2 sections of the specification. If a removal encapsulant is used, use in accordance with manufacturer's instructions. Saturate soil beyond the inch of soil currently being removed. If amended water is used keep the surface of the soil continuously wet throughout removal and decontamination.

END OF SECTION - 02082

SECTION 02084 - DISPOSAL OF ASBESTOS-CONTAINING WASTE MATERIAL

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Division-1 Specification sections, apply to work of this section.

Section 01092 Codes and Regulations - Asbestos Abatement: describes applicable federal, state and local regulations.

DESCRIPTION OF THE WORK:

This section describes the disposal of asbestos-containing materials. Disposal includes packaging of asbestos-containing waste materials. Disposal is to be accomplished by landfilling in accordance with 40 CFR 61.150.

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.

Copy of state or local license for Waste Hauler.

Name and address of landfill where asbestos-containing waste materials are to be buried. Include contact person and telephone number.

Chain of custody form and form of waste shipment records.

Post Job Submittal: Submit copies of all waste shipment record to Owner or Owner's Representative with final invoice for payment at 100% job completion. Final payment will be withheld until all waste shipment records are received.

Release of Lien: Submit copies of Release of Lien from any subcontractors used during the project.

PART 2 - PRODUCTS:

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. Published November 21, 1986 and revised February 17, 1987:

RQ HAZARDOUS
SUBSTANCE,
SOLID, NOS,
ORM-E, NA 9188
(ASBESTOS)

Fourth Label: Label all asbestos-containing waste materials with the name of the waste generators, and location at which the waste was generated.

PART 3 - EXECUTION

Comply with the following sections during all phases of this work:

Section 01560 Worker Protection - Asbestos Abatement

Section 01562 Respiratory Protection

GENERAL:

All waste is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction.

Load all asbestos-containing waste material in disposal bags or leak-tight drums. All materials are to be contained in one of the following

Two 6 mil disposal bags or

Two 6 mil disposal bags and a fiberboard drum or

Sealed steel drum with no bag.

One 6 mil disposal bag (dry, encapsulated poly at teardown)

Protect interior of truck or dumpster with Critical and Primary Barriers as described in Section 01526 Temporary Enclosures.

Carefully load containerized waste in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Mark vehicle used for transport asbestos-containing waste material during the loading and unloading of waste so that signs are visible. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.

Do not store containerized materials outside of the work area. Take containers from the work area directly to a sealed truck or dumpster.

Do not transport disposal bagged materials on open trucks. Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with this specification.

Advise the landfill operator at least ten days in advance of transport, of the quantity of material to be delivered.

At disposal site unload containerized waste:

At a disposal site, sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to Work Site for rebagging. Clean entire truck and contents using procedures set forth in section 01711 Project Decontamination.

Retain receipts from landfill for materials disposed of.

At completion of hauling and disposal of each load submit copy of waste manifest, chain of custody form, and landfill receipt to Owner's Representative.

END OF SECTION - 02084

SECTION 02085 - REMOVAL OF INTERIOR NON-FRIABLE ACM

PART I - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Division - 1 Specification sections, apply to work of this section.

RELATED WORK SPECIFIED ELSEWHERE:

Installation of Temporary Pressure Differential and Air Circulation System is specified in Section 01513.

Installation of Critical and Primary Barriers, and work area isolation procedures are set forth in Section 01526.

Project Decontamination procedures after removal of the secondary barrier are specified in Section 01711.

Decontamination Units are specified in Section 01563.

Disposal of asbestos-containing waste is specified in Section 02084.

Respiratory protection is specified in Section 01562.

Worker protection is specified in Section 01560.

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 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, encapsulating material and solvent 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.

Tile Adhesive Removal Solvent: Provided a slow drying solvent intended to remove tile adhesive. Provide material that is not flammable, does not create combustible vapors and has no significant inhalation hazard.

Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of asbestos-containing waste material.

PART 3 - EXECUTION

Asbestos-Containing Resilient Floor Covering: Carry out all asbestos-containing resilient floor covering removal in a manner that will minimize pulverizing, breaking or abrading of tiles, adhesive or felt backings.

Saturate Floor Covering with amended water or removal encapsulant so that entire surface is wet. Do not allow to puddle or run off to other areas. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Cover with sheet polyethylene to allow humidity to release tile from floor. Allow time for humidity and water or removal encapsulant to loosen tiles prior to removal. Keep floor continuously wet throughout removal operation.

Manually remove tiles in full pieces if possible. Pry tiles from substrate with hand tools. Do not use electric or pneumatic chippers. If visible dust is produced at any point in the operation immediately stop work and mist area with amended water. Do not restart work until authorized

by the Project Consultant.

Pick Up tiles in whole pieces wherever possible. Pick up small pieces and debris with a HEPA filtered vacuum designed for use with wet material or wet sweep into scoop shovels. Dispose of in disposal bags or drums as required by Section 02084 Disposal of Asbestos-Containing Waste Material.

Clean Floor after completion of removal of asbestos-containing materials. Lightly encapsulate walls and ceiling only. Following teardown, wash the floors with hot water and Tri-Sodium Phosphate mixed according to manufacturer's instructions.

Cement Asbestos Board: Carry out all cement asbestos board removal in a manner that will minimize pulverizing, breaking or abrading of involved materials. Wet area of fasteners with amended water or removal encapsulant and back out fasteners. Use caution to prevent breakage of cement asbestos board. Hold cement asbestos board in place until all fasteners are removed. Take down and wrap in two layers of 6 mil sheet plastic or a double disposal bag. Dispose of as required by Section 02084 Disposal of Asbestos Containing Waste Material. HEPA vacuum all surfaces in contact with cement board and encapsulate surface in accordance with Section 09805.

Ceramic Flue: Remove in a manner similar to cement asbestos board.

HVAC Duct Mastic or Insulation (Metal or Fiberglass Duct): Use barrier tape to isolate Work Area from adjacent building occupants. If the removal can be accomplished in a manner which maintains the mastic in a non-friable condition, Sections 01513, 01526 and 01711 do not apply. In this instance, place two layers of 6 mil poly under entire area where removal is to be done.

Remove insulation and/or duct in an intact condition. Place removed section in bags or wrap in 6 mil poly and dispose of as specified in Section 02084.

HVAC Pipe Wrap: Use barrier tape to isolate Work Area from adjacent building occupants. If the removal can be accomplished in a manner which maintains the pipe wrap in a non-friable condition, Sections 01513, 01526 and 01711 do not apply. In this instance, place two layers of 6 mil poly under entire area where removal is to be done.

Spray mist pipe insulation with amended water. Slice insulation along length of pipe. Remove in sections small enough to fit into disposal bag. Dispose of in accordance with Section 02084.

END OF SECTION - 02085

SECTION 02086 - REMOVAL OF EXTERIOR ASBESTOS-CONTAINING MATERIALS:

PART I - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Special Conditions and Division - 1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

The work includes the removal and disposal of asbestos-containing cement materials.

The work includes the removal of asbestos-containing built-up roof and flashing.

The work includes the removal of exterior HVAC duct mastic.

The work includes the removal of exterior HVAC pipe wrap.

RELATED WORK SPECIFIED ELSEWHERE:

Remote Decontamination Units are specified in Section 01563.

Disposal of asbestos-containing waste is specified in Section 02084.

Respiratory protection is specified in Section 01562.

Worker protection is specified in Section 01560.

SUBMITTALS:

Before Start of Work: Submit the following to the Project Consultant for review. Do not start work until these submittals are returned with Project Consultant'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 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, encapsulating material and solvent 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.

Disposal Bags: Provide 6 mil thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of asbestos-containing waste material.

PART 3 - EXECUTION

Removal of Cement Board Panels: Remove cement board panels using the following procedure:

Cement Asbestos Board: Carry out all cement asbestos board removal in a manner that will minimize pulverizing, breaking or abrading of involved materials. Place a layer of 6 mil sheet plastic on the ground extending five (5) feet beyond the area of removal. Wet area of fasteners with amended water or removal encapsulant and back out fasteners. Use caution to prevent breakage of cement asbestos board. Hold cement asbestos board in place until all fasteners are removed. Take down and wrap in two layers of 6 mil sheet plastic or a double disposal bag. Encapsulate all surfaces in accordance with Section 09805. Dispose of as required by Section 02084 Disposal of Asbestos Containing Waste Material.

Removal of Built-Up Roofing and Flashing: Remove roofing and associated materials using the following procedure:

Built-Up Roofing and Flashing: Perform all removal work when outside temperatures are warm enough that the bitumen in the roofing is above the phase changes (glass) point. Carry out all roofing removal in a manner that will minimize pulverizing, breaking or abrading of involved materials. Wet surface of roof with amended water. Use sufficient water to completely wet surface but not cause ponding or running of water. Cut roof membrane into sections able to fit in disposal boxes. The roof shall be cut/removed using manual methods whenever possible. All power cutting tools shall be equipped with HEPA filtered dust collectors unless wet methods sufficient to control dust emissions can be achieved. Lift sections from insulation and place in disposal boxes. Bag and dispose of as required by Section 02084 Disposal of Asbestos-Containing Waste Material. Remove residue from roof deck utilizing HEPA filtered vacuum.

HVAC Duct Mastic, Insulation or Pipe Wrap: Remove HVAC duct mastic, insulation or pipe wrap using the following procedure:

HVAC Duct Mastic, Piping and Insulation: Erect barrier tape at perimeter of Work Area to prevent non-asbestos personnel from entering Work Area. Place two layers of 6 mil poly under material to be removed. Mist equipment with amended water. Remove material in sections which can be placed in a waste disposal bag or wrap in two layers of 6 mil poly and dispose of in accordance to Section 02084.

AIRBORNE FIBER COUNTS:

General: Use work procedures that result in airborne fiber counts less than action levels set forth in Section 01410 Test Laboratory Services. If airborne fiber counts exceed specified levels immediately mist the area with amended water to lower fiber counts and revise work procedures to maintain airborne fiber levels within the required limit. If Section 01410 requires that work be stopped also periodically mist work area sufficiently to keep all asbestos-containing materials continuously wet until authorized to recommence work.

END OF SECTION - 02086

SECTION 09805 - ENCAPSULATION OF ASBESTOS-CONTAINING MATERIALS

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Division-1 Specification sections, apply to work of this section.

DESCRIPTION OF WORK:

The Extent of encapsulation work is as herein specified.

The work includes the sealing of all scratch coat plaster from which asbestos-containing finish plaster has been removed with two (2) coats of penetrating encapsulant.

The work includes the sealing of all wood grounds, blocking, etc. that have been in contact with asbestos-containing plaster materials, and cannot be removed for structural or other reasons; with one (1) coat of penetrating encapsulant.

The work includes the sealing of pipe insulation ends at walls on the perimeter of work areas with two (2) coats of penetrating encapsulant and one (1) coat of bridging encapsulant.

The work includes the sealing of pipe and fittings from which asbestos-containing materials have been removed.

The work includes the encapsulation of soil.

The work includes the sealing of all substrates within the work areas from which asbestos-containing materials have been removed.

SUBMITTALS:

Product Data: Submit manufacturer's technical information including label analysis and application instructions for each material proposed for use.

Installation Instructions: Submit manufacturer's installation instructions with specific project requirements noted.

Performance Warrantee: Submit manufacturer's performance guarantee.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.

DELIVERY AND STORAGE:

Deliver materials to the job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

Name or title of material
Manufacturer's stock number and date of manufacture
Manufacturer's name
Thinning Instructions
Application instructions

Deliver materials together with a copy of the OSHA Material Safety Data Sheet for the material.

JOB CONDITIONS:

Apply encapsulating materials only when environmental conditions in the work area are as required by the manufacturer's instructions.

PART 2 - PRODUCTS

Encapsulants: Provide penetrating or bridging type encapsulants specifically designed for application to asbestos-containing material.

Draft Standards: Product shall be rated as acceptable for use intended when field tested in accordance with ASTM Proposed Specification P-189 "Specification for Encapsulants for Friable Asbestos-Containing Building Materials".

Fire Safety: Use only materials that have a flame spread index of less than 25, when dry, when tested in accordance with ASTM E-84.

MANUFACTURERS:

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

Penetrating Encapsulants: Material shall be A-B-C CONCENTRATE as manufactured by Fiberlock Technologies, Inc., 630 Putnam Avenue, Cambridge, MA 02139 or BWE 3000 as manufactured by Better Working Environments, 3716 Scripps Way, Las Vegas, NV 89103.

Bridging Encapsulants: Material shall be DECADEX FIRECHECK as manufactured by Pentagon Plastics, Inc., Railroad Avenue, West Palm Beach, Florida or PROTECTOR 32-32 as manufactured by Foster Products Divisions, Box 625, Springhouse, PA.

PART 3 - EXECUTION

GENERAL:

Prior to applying any encapsulating material, ensure that application of the sealer will not cause the base material to fail and allow the sealed material to fall of its own weight or separate from the substrate. Should Contractor doubt the ability of the installation to support the sealant, request direction from the Owner's Representative before proceeding with the encapsulating work.

Do Not Commence Application of encapsulating materials until all removal work within the work area has been completed.

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.

In addition to protective breathing equipment required by OSHA requirements or by this specification, use painting pre-filters on respirators to protect the dust filters when organic solvent based encapsulant are in use.

SEALING EXPOSED EDGES:

Seal edges of asbestos-containing material exposed by removals up to an inaccessible spot such as a sleeve, wall penetration, etc. with two (2) coats of encapsulant.

Prior to sealing, permit the exposed edges to dry completely to permit penetration of the sealer.

Comply with all manufacturer's instructions for particular conditions of installation in each case. Consult with manufacturer's technical representative for conditions not covered.

Encapsulate all surfaces, excluding floor tile removal projects, in full compliance with manufacturer's procedures.

At completion of Encapsulation and before removal of work area enclosures and negative pressure system decontaminate space in accordance with requirements of sections 01711 and 01714.

At completion of work submit manufacturer's record of inspection of completed work and Manufacturer's Performance Guarantee executed by both manufacturer and Contractor.

END OF SECTION - 09805

SECTION 15254 - REPAIR OF INSULATION AND LAGGING

PART 1 - GENERAL

RELATED DOCUMENTS:

General provisions of Contract, including General and Division-1 Specification sections apply to work of this Section.

DESCRIPTION OF WORK:

Repair of insulation on all piping upon which asbestos-containing insulation is to remain.

Repair of laggings on boilers, breechings and equipment upon which asbestos-containing lagging and/or insulation is to remain.

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.

Nonwoven Fibrous Glass Mat: Provide felt approximately 3/32" thick fabricated from glass fibers.

Open Weave Glass Fiber Mat: Provide cloth with approximately 1/4" openings in weave, fabricated from glass fibers twisted or braided into strands approximately 1/128" in diameter.

Bridging Type Encapsulant: is specified in section 09805.

Plastic Jackets:

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

Manufacturer: Subject to compliance with requirements, provide products of one of the Following:

H. B. Fuller Company 6107 Industrial Way Houston, Texas 77011 (800) 231-9541	Speedline 25/50	Smoke-Safe PVC

PART 3 - EXECUTION

GENERAL:

Piping: Remove any loose material with HEPA vacuum. No existing jacket material is to be removed.

Reinforced Bridging Encapsulant: Repair with reinforced bridging encapsulant:

Fill holes with mineral wool insulating cement and cover damaged areas with nonwoven fibrous glass mat completely saturated with bridging type encapsulant.

Wrap open joints with nonwoven 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.

Plastic Jackets: Repair by covering with plastic jackets.

Install in strict accordance with manufacturers instructions

Fittings: Remove any loose material with HEPA vacuum. No existing jacket material is to be removed.

Reinforced Bridging Encapsulant: Repair with reinforced bridging encapsulant:

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 nonwoven fibrous glass mat embedded in bridging type encapsulant. Stretch to conform to shape of 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.

Plastic Jackets: Repair by covering with plastic jackets.

Install in strict accordance with manufacturers instructions.

Fill holes and gapes in insulation with fibrous glass insulation prior to installing jacket.

Equipment Laggings: (Hot Water Tanks, Converters, Etc.) Fill damaged portion of lagging as required with mineral wool insulating cement and cover with nonwoven 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 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 of lagging with 1/4" minimum thickness of mineral wool insulating cement reinforced with open weave glass fiber mat. Trowel surface smooth finish.

END OF SECTION - 15254