



## VICKSBURG COMMUNITY SCHOOLS

### REQUEST FOR PROPOSALS

**PROJECT: SUNSET ELEMENTARY FLOOR REPLACEMENT**  
Bids Due by 1:30 p.m., May 13, 2010

**OWNER: Vicksburg Community Schools**  
301 South Kalamazoo Ave  
Vicksburg, Michigan 49097

#### INSTRUCTIONS AND PROCEDURES

1. A pre-proposal conference is scheduled for **3:30 p.m. on Thursday, May 6, 2010** at Sunset Elementary School located at 201 North Boulevard 49097. Floor plans and Bid packets will also be available at that time.
2. Bids for the Sunset floor replacement project, as described in these specifications, will be accepted until **Thursday, May 13, 2010 at 1:30 PM EDT**, at which time they will be opened and read.
3. Bids will be accepted by mail or by personal delivery to Vicksburg Community Schools Administration Building at 301 South Kalamazoo Ave, Vicksburg, Michigan 49097.
4. Should a vendor elect to hand deliver bids to the Vicksburg Community Schools Administration Building, it is the responsibility of the vendor to ensure that the bid is delivered to the reception desk of the business office at 301 South Kalamazoo Ave, Vicksburg, Michigan 49097.
5. All bids must be printed & in electronic format and placed in an opaque envelope with "SEALED BIDS SUNSET FLOOR REPLACEMENT PROJECT" clearly marked on the outside of the envelope.
6. All bids must be addressed to:  
  
Steve Goss, Assistant Superintendent , Finance  
Business Services  
Vicksburg Community Schools  
301 South Kalamazoo Ave  
Vicksburg, MI 49097
7. Bids received after **Thursday, May 13, 2010 at 1:30 PM EDT**, and bids sent by fax or electronic mail will not be accepted.

8. It is the sole responsibility of the vendor to ensure that the bids are delivered to the Vicksburg Community School District by the stated date and time.
9. All bids must be submitted with the BID RESPONSE FORM (Attachment B) and must be signed by an authorized representative of the vendor.
10. Bids not submitted with the BID RESPONSE FORM or bids not signed and/or dated will not be considered and will be determined to be a non-bid.
11. A notarized copy of Public Act 232 of 2004, Familial Relationship Disclosure, (Attachment C) must accompany all bids. Bids submitted without the notarized Public Act 232 of 2004, Familial Relationship Disclosure, will be determined to be a non-bid.
12. **5% Bid Bond:** A certified check or bank draft payable to Vicksburg Community Schools, or a satisfactory bid bond executed by the bidder and a surety company in the amount equal to not less than five percent of the maximum bid amount shall be submitted with each proposal.
13. The Vicksburg Community School District reserves the right to withdraw this Request for Bid at any time and for any reason and to issue such clarifications, modifications and/or amendments as it may deem appropriate.
14. The Vicksburg Community School District Board of Education reserves the right to accept any bid, reject any part or all bids, or to waive any information in the bids should they deem it to be in the best interest of the school district.
15. Any questions regarding the specifications or bid process should contact JR Rice, Director of Facilities and General Operations, at (269) 321-1026 at the address stated above.

## Part II

### Specifications

See Attachment A

### Bid Form

See Attachment B

### Familial Statement

See Attachment C

### Building Map

See Attachment D

### Room Schedule

See Attachment E

### Specifications Asbestos Abatement

See Attachment F

**VICKSBURG COMMUNITY SCHOOLS  
SPECIFICATIONS AND RESPONSE FORMS  
CARPET REPLACEMENT FOR SUNSET ELEMENTARY SCHOOL**

The Vicksburg Community Schools requests proposals from vendors for the selection of a company to provide flooring replacement for Sunset Elementary School located at 201 North Boulevard 49097. This project will include removal and disposal of existing carpet, VCT and cove base and installation of new carpet, VCT, rubber transition strips, and cove base where necessary. Estimated square footage for this building is 10484 square feet of VCT and 8379 square feet of carpet. Proposals are due on or before 1:30 PM Thursday, May 13, 2010 at 301 South Kalamazoo Ave, Vicksburg, MI 49097.

**Pre-Proposal Conference**

A pre-proposal conference is scheduled for 3:30 p.m. on Thursday, May 6, 2010 at Sunset Elementary School located at 201 North Boulevard 49097. Floor plans and Bid packets will be available at that time.

If you have any questions concerning the proposal, availability of floor plans, and location of this pre-proposal meeting please contact JR Rice, Director of Facilities and General Operations, at (269) 321-1026.

The contractor will meet the following criteria for all carpet or tile installations:

1. All of the contractor's employees must abide by the policies of the Vicksburg Community Schools. The District has a zero tolerance policy for the use of drugs, tobacco, and alcohol on District property. Failure to meet District policy requirements can lead to contract cancellation by the District.
2. All sub-contractors shall be held responsible for the accuracy of measurement and fit of components.
3. Skilled workmen, fully experienced in this type of work shall do the work specified herein.
4. The contractor shall be responsible for removing all debris from the site and properly disposing of it.
5. If any work is subcontracted, the contractor must notify the District of this fact and have subcontracted workers properly notified of District policy. The District will have the right to accept or reject subcontractors.
6. Carpet is Collins & Aikman Mohawk Commercial Stati-Tuft III with everset, Ultra Performance system Bloc backing, Color: #8568 (Aquarium)
7. Vinyl tile is The Mohawk Group Commercial VCT 12" x 12", Gauge 1/8" ASTM F 1056, Comp 1, Class2, Made by Congoleum.
8. Cost for floor preparation is to be included in the proposed.

**Liability Insurance - Installation of Flooring**

Contractor will furnish a Certificate of Insurance covering comprehensive general liability and comprehensive automobile liability for bodily injury and property damage in the amount of \$100,000 and Workmen's Compensation for the construction portion of this project. The contractor shall provide satisfactory evidence to the District of such insurance coverage before work begins. The contractor will furnish certificate of Workers' Compensation insurance covering all personnel working on VCS property. This applies to employees of the contractor, all subcontractors and/or temporary labor companies.

**Site Work**

Any modifications or changes necessary to complete the installation are the sole responsibility of the vendor. However, before any modifications or changes can be made to the site, it must be approved by JR Rice, the Director of Facilities and General Operations. The director may be contacted by calling (269) 321-1026. Changes for any major modifications, which might substantially affect the vendors bid price, should be explained in a separate letter, supplied with the proposal form. Failure to notify the owner of required modifications in a letter shall be deemed as acceptance of the project and the vendor will be held responsible for all work required for installation.

**Warranty**

Manufacturer shall warranty all materials for 20 years against excessive wear, delamination, edge ravel, zippering, resiliency loss, and static control problems.

Installation warranty shall cover defects and omissions made during installation.

For each installation, the contractor must supply a letter from the carpet manufacturer confirming that the installation meets the seam installation requirements and that the manufacturer's warranty is in full effect for the installation.

**Removal of Existing Flooring**

The costs for the removal and disposal of the existing carpet, VCT and base are to be included in the proposed cost. All debris will be removed and disposed by the contractor at the contractor's expense.

**Installation Schedule**

Work on this project shall begin no later than June 23, 2010 and be completed no later than August 6, 2010.

**SECTION 01300****SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, INFORMATION****PART 1 GENERAL**

*(Building Map and room schedule: See schedule D and E.)*

**1.1. SUMMARY**

- A. Submit to JR Rice, Director of Facilities and General Operations, 301 South Kalamazoo, Vicksburg MI. 49097, shop drawings, product data, and samples required by specification sections.
- B. Related Requirements Specified Elsewhere
  - 1. Construction Schedule
  - 2. Work will include take up and disposal of existing carpet and ribbon base in areas designated for new carpet.
  - 3. Work will include take up and disposal of existing VCT and ribbon base in areas designated for new VCT.
  - 4. Removal and disposal of ACM under carpet or VCT in areas designated.
- C. Prepare and submit, with construction schedule, a separate schedule listing dates for submission and review of shop drawings, product data, and samples.

**1.2 SHOP DRAWINGS**

- A. Three original drawings, prepared by Contractor, subcontractor, supplier, or distributor, which illustrate some portion of the work, showing fabrication, layout, setting, or erection details.
- B. Identify details by reference to sheet and detail numbers shown on contract drawings.

### 1.3 PRODUCT DATA

- A. Manufacturer's Standard Schematic Drawings
  - 1. Modify drawings to delete information not applicable to project.
- B. Manufacturer's Catalog Sheets, Brochures, Diagrams, Schedules, Performance Charts, Illustrations, and Other Descriptive Data
  - 1. Clearly mark each copy to identify the appropriate Specification Section.
  - 2. Clearly mark each copy to identify pertinent materials, products, or models.
  - 3. Show dimensions and clearances required.
  - 4. Show performance characteristics and capacities.

### 1.4 SAMPLES

- A. Physical examples to illustrate materials, equipment, or workmanship and to establish standards by which completed work is judged.
- B. Office Samples: Of sufficient size and quantity illustrate:
  - 1. Functional characteristics of product or material
  - 2. Full range of color samples.

### 1.5 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data, and samples prior to submission.
- B. Verify
  - 1. Field measurements
  - 2. Field construction criteria
  - 3. Catalog numbers and similar data
- C. Coordinate submittals with requirements of work and contract documents

### 1.6 SUBMISSION REQUIREMENTS

- A. The Contractor shall submit the number of copies of product data and samples that the Contractor and his subcontractors need for their use plus two additional sets for the Owner. Where shop drawings are involved, submit one high quality reproducible transparency and one opaque print of the shop drawing for the Owner. The reproducible transparency will be marked by the Owner to the Contractor for his use, distribution, correction or submittal as required. The marked up prints will be retained by the Owner. After final review and correction of the submittal, the Contractor shall send the Owner copies for two corrected sets.
- B. Submit three samples

- C. Accompany submittals with response form, in duplicate, containing
  - 1. Date
  - 2. Project Title and Number
  - 3. Contractor's name and address
  - 4. The number of each shop drawing, project data, and sample submitted.
  - 5. Notification of Deviations from Contract Documents
  - 6. Other pertinent data
  
- D. Submittals shall include
  - 1. Date and revision dates
  - 2. Project title and number
  - 3. The name of:
    - a. Owner
    - b. Supplier
    - c. Manufacturer
    - d. Separate detailer when pertinent
  - 4. Identification of product or material
  - 5. Relation to adjacent structure or materials
  - 6. Field dimensions, clearly identified
  - 7. Specification section number
  - 8. Applicable standards, such as ASTM or Federal Specification
  - 9. Identification of deviations from Contract Documents.

SECTION 09688  
CARPET/VINYL TILE – GLUE DOWN

PART I GENERAL

1.1 SECTION INCLUDES

- A. Installation and purchase of carpet using the glue down method
- B. Installation and purchase of vinyl tile using the glue down method
- C. Accessories as required for complete assembly

1.2 REFERENCES

- A. ASTM D2859 – Test Method for Flammability of Finished Floor Covering Materials
- B. ASTM E84 – Surface Burning Characteristics of Building Materials
- C. ASTM E648 – Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
- D. NFPA 253 – Test for Critical Radiant Flux of Floor Covering Systems

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics and method of installation.
- D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

1.4 QUALIFICATIONS

- A. Installer: Company specializing in installing Carpet/Tile with minimum three years documented experience.

## 1.5 REGULATORY REQUIREMENTS

- A. Conform to ASTM E648 Class I for flooring radiant panel test.
- B. Conform to ASTM D2859 for surface flammability ignition test.

## 1.6 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for 3 days prior to installation in area of installation to achieve temperature stability.
- B. Maintain minimum 70°F ambient temperature 3 days prior to, during, and 24 hours after installation.

## 1.7 MAINTENANCE DATA

- A. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

## 1.8 EXTRA MATERIAL

- A. Provide 10% square yards/Feet of carpeting/VCT of each type, color, and pattern specified.

## PART 2 PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURER

- A. Collins & Aikman Mohawk Commercial.
  - 1. With Everset
  - 2. Ultra Performance system Bloc backing
  - 3. Series: Stati-Tuft III
  - 4. Color: #8568 (Aquarium)
- B. VCT 12" x 12", Gauge 1/8" ASTM F 1056, Comp 1, Class2, Made by Congoleum.  
Color AL-15 Heathered Rose Standard Grade
- C. Or equivalent

### 2.2 ACCESSORIES

- A. Sub-Floor Filler: White premix latex, type recommended by adhesive material manufacturer
- B. Adhesive: Recommended and approved by carpet/vct manufacturer
- C. Roppe wall base P174 Smoke. ASTM type TS RP174 1/8" vulcanized SBR rubber. Replace all existing with new.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that surfaces are smooth and flat with maximum variation of ¼ inch in 10ft. and are ready to receive work.
- B. Verify concrete floors are dry to a maximum moisture content of 7 percent and exhibit negative alkalinity, carbonization, or dusting.

### 3.2 PREPARATION

- A. Remove sub- floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.

### 3.3 INSTALLATION

- A. Apply carpet/vct and adhesive in accordance with manufacturer's instructions.
- B. Verify carpet/vct match before cutting to ensure minimal variation between dye lots.
- C. Make cuts straight, true, and unfrayed. Edge seam carpet/vct at public areas.
- D. Locate seams in area of least traffic.
- E. Form seams straight, not overlapped or peaked, and free of gaps.
- F. Lay carpet/vct tight and flat on sub-floor, well fastened, with a uniform appearance. Provide monolithic color, pattern, and texture match within any one area.
- G. Do not change run of pile in any room where carpet is continuous through a wall opening into another room. Locate change of color or pattern between rooms under door centerline.
- H. Cut and fit carpet/vct around interruptions.
- I. Fit carpet/vct tight to intersection with vertical surfaces without gaps.
- J. Where wall bases are scheduled, cut carpet/vct tight to walls. Fit carpet tight to vertical interruptions, leaving no gaps.

- K. Where floor transitions occur, new rubber transition strips must be installed.
- L. All rooms subject to have water applied to the floor during normal use (ie. Bathrooms, sinks) shall have caulk applied to edges, along walls or fixtures to provide a water tight seal. If wall base is used then water tight seal needs to be applied before base is installed.
- M. Manufacturer's technical representative to visit project site once carpet installation has begun and shall provide letter indicating that carpet installation is in accordance with manufacturer's recommendations.
- N. Manufacturer's representative shall provide training session with Owner's maintenance personnel regarding care and cleaning procedures for completed carpet installation.

### 3.4 PROTECTION

- A. Protect carpet after installation until substantial completion with plastic sheeting or mats.

### 3.5 CLEANING

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces. Any carpet that has become soiled or stained will be professionally cleaned as recommended by the carpet manufacturer. Carpet that cannot be restored to new conditions will be replaced at no additional cost to the Owner.

## PART 4 INFORMATION-ASBESTOS REMOVAL

### 4.1 SEE ATTACHMENT F

Vendor: \_\_\_\_\_

**VICKSBURG COMMUNITY SCHOOLS  
PROPOSAL RESPONSE FORM  
CARPET REPLACEMENT FOR SUNSET ELEMENTARY SCHOOL**

A. Cost

Contingency \$ 10,000.00

Floor Prep Allowance \$ \_\_\_\_\_

Carpet and Rubber Base cost including removal and installation \$ \_\_\_\_\_

Vinyl Tile and Rubber Base cost including removal and installation \$ \_\_\_\_\_

Total Proposal \$ \_\_\_\_\_

[Use a separate proposal form for each product you desire to offer.]

Carpet name/type: \_\_\_\_\_

Vinyl tile name/type: \_\_\_\_\_

Base name/type: \_\_\_\_\_

NOTE: Contingency is to be authorized by Owner only. Any unused contingency will be returned completely to Owner at end of construction.

**5% Bid Bond:** A certified check or bank draft payable to Vicksburg Community Schools, or a satisfactory bid bond executed by the bidder and a surety company in the amount equal to not less than five percent of the maximum bid amount shall be submitted with each proposal.

Vendor: \_\_\_\_\_

**VICKSBURG COMMUNITY SCHOOLS  
PROPOSAL RESPONSE FORM  
CARPET REPLACEMENT FOR SUNSET ELEMENTARY SCHOOL**

B. References

The following references are provided which may be contacted by the Owner as needed:

Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Project Description: \_\_\_\_\_

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Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Project Description: \_\_\_\_\_

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Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Project Description: \_\_\_\_\_

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Vendor: \_\_\_\_\_

**VICKSBURG COMMUNITY SCHOOLS  
PROPOSAL RESPONSE FORM  
CARPET REPLACEMENT FOR SUNSET ELEMENTARY SCHOOL**

C. Deviations

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D. List adhesive products to be used in this installation.

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E. Provide warranty information concerning installation and maintenance.

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F. How long will your prices be in effect? \_\_\_\_\_

G. If contract is awarded on May 17, 2010 when can installation begin? \_\_\_\_\_

**FAMILIAL RELATIONSHIP DISCLOSURE STATEMENT**

***Important: This disclosure statement must be included with your bid as required by state law (Public Act 232 of 2004).***

*As required by Public Act 232 of 2004, all bids shall be accompanied by a sworn and notarized statement disclosing any familial relationship that exists between the owner or any employee of the bidder and any member of the Vicksburg Community Schools Board of Education or the Superintendent of Schools. The Board of Education shall not accept a bid that does not include this sworn and notarized disclosure statement.*

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The undersigned, the owner or authorized officer of \_\_\_\_\_ (the "Bidder"), pursuant to the familial disclosure requirement provided in the Vicksburg Community Schools invitation to bid, hereby represent and warrant, except as provided below, that no familial relationships exist between the owner(s) or any employee of the company and any member of the Vicksburg Community Schools Board of Education or the Superintendent of Schools. (Listing of names follows.) If such a relationship exists, please explain:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_ (bidder' signature)

Name: \_\_\_\_\_ (type or print)

Date: \_\_\_\_\_

**Subscribed and Sworn to Before Me:**

**This \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_ A.D., in and for the County of \_\_\_\_\_, Michigan. My commission expires \_\_\_\_\_**

\_\_\_\_\_  
**Signature of Notary**

# SUNSET ELEMENTARY SCHOOL



## SUNSET FLOOR REPLACEMENT

AREA	REPLACE TYPE	FLOOR NOTES	VCT AMT	CARPET AMT	BASE AMT	NOTES
Replace Cor, 1	Marmoleum	ACM?	800		N/A	
Replace Cor, 2	Marmoleum	ACM?	1362		N/A	
Replace Cor, 3	Marmoleum	ACM?	1134		N/A	
Replace Cor, 4	Marmoleum	ACM?	1362		N/A	
Replace Cor, 6	Terrazzo/ Marmoleum	ACM?	200		N/A	
Replace Cor, 9	Terrazzo/ Marmoleum	ACM?	200		N/A	
Replace Floor, 100	Marmoleum/ Carpet	ACM?	120	326	52	
Replace Floor, 101	Marmoleum/ Carpet		49	700	28	Has sink
Replace Floor, 102	Carpet			246	32	
Replace Floor, 103	Marmoleum/ Carpet			351	40	
Replace Floor, 105	Marmoleum/ Carpet			351	40	
Replace Floor, 107	Marmoleum/ Carpet		49	700	96	Has sink
Replace Floor, 109	Carpet		49	700	96	Has sink
Replace Floor, 110	Carpet			235	60	
Replace Floor, 111	Part Marmoleum		148		96	Has new Carpet
Replace Floor, 112	Carpet			389	80	
Replace Floor, 113	Marmoleum/ Carpet	ACM?	39	659	48	
Replace Floor, 113R	Marmoleum	ACM?	17		16	
Replace Floor, 115	Marmoleum/ Carpet	ACM?	39	659	48	
Replace Floor, 115R	Marmoleum	ACM?	17		16	
Replace Floor, 202	Marmoleum	ACM?	316		76	
Replace Floor, 250R	Marmoleum	ACM?	43		24	
Replace Floor, 206	Carpet			233	60	
Replace Floor, 208	Marmoleum/ Carpet	ACM?	33	700	48	
Replace Floor, 210	Marmoleum/ Carpet	ACM?	33	707	48	Has sink
Replace Floor, 210R	Marmoleum	ACM?	17		16	
Replace Floor, 212	Marmoleum/ Carpet	ACM?	33	707	48	Has sink
Replace Floor, 212R	Marmoleum	ACM?	17		16	
Replace Floor, 214	Marmoleum/ Carpet	ACM?	210	716	88	
Replace Floor, 214R	Marmoleum	ACM?	17		16	
Replace Floor, 314	Marmoleum	ACM?	4180		N/A	Includes 314A

**Carpet specifications are as follows:**

## SUNSET FLOOR REPLACEMENT

AREA	REPLACE TYPE	FLOOR NOTES	VCT AMT	CARPET AMT	BASE AMT	NOTES
						Mohawk Commercial Surreal Stati-Tuft III with everset and ultra performance system Bloc backing. Carpet color will be #8568 (Aquarium)

**Vinyl cove base specifications are as follows:**

Roppe wall base P174 (Smoke). ASTM type TS RP174 1/8" vulcanized SBR rubber.

**Vinyl Tile specifications are as follows:**

VCT 12" x 12", Gauge 1/8" ASTM F 1056, Comp 1, Class2, Made by Congoleum. Color AL-15 (Heathered Rose) Standard Grade

# **TECHNICAL SPECIFICATIONS FOR ASBESTOS ABATEMENT - GENERAL ABATEMENT PROCEDURES -**

The following are technical specifications which shall be strictly enforced by **Vicksburg Community School**, hereafter referred to as the "Owner" or "Building Owner". The Asbestos Abatement Contractor will hereinafter be referred to as the "Contractor" for the asbestos abatement project and the Project Managers/Air Monitors will hereinafter be referred to as the "Owner's Consultant" or "Owners Representative".

## **I. INITIAL REQUIREMENTS**

### **1 General Terms**

- 1.1 By submitting a bid, the Contractor acknowledges that he has investigated and satisfied himself as to:
  - 1.1.1 The conditions affecting the work, including but not limited to the physical conditions of the site which may bear upon site access, handling and storage of tools and materials, access to water, electricity or other utilities that otherwise may affect performance of required activities;
  - 1.1.2 The character and quantity of all surface and sub-surface material or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the Building Owner or a designated Consultant, as well as information presented in drawings and specifications included with this specification. Any failure by the Contractor to acquaint himself with available information will not relieve him of the responsibility of determining properly the difficulty, safety concerns or cost of successfully performing the work. The Building Owner and/or the Owner's Consultant is not responsible for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Building Owner and/or the Owner's Consultant.
  - 1.1.3 The methods and procedures detailed within the technical specifications of this bid package are merely illustrative of the procedures to be utilized on the asbestos abatement projects for the Owner. Other procedures, which are the equivalent of those described, are encouraged at the option of the Contractor but are always subject to the Owner and/or the Owner's Consultant approval.
- 1.2 The Contractor shall furnish all labor, materials, services, insurance, and equipment necessary to perform the asbestos abatement activities contemplated by this specification.
- 1.3 Additional work in the form of change orders, written or verbal agreements must also be completed in accordance with these Technical Specifications for Asbestos Abatement as well as all other sections of this specification document.

### **2 Pre-Start Meeting**

- 2.1 Prior to commencement of work, the Contractor shall meet with the Owner and/or Owner's Consultant to present and review the items listed below. At that time, the Contractor shall designate at least one "competent" (as described by OSHA 1926.1101 {o}) individual who shall be on-site throughout the project with full authority to act on the Contractor's behalf and this person shall attend the pre-start job meeting. This meeting is arranged to discuss and set procedures to be followed throughout the performance of the contract. At this meeting and to be included in the logbook, the Contractor shall provide:
  - 2.1.1 Proof of Contractor licensing to conduct asbestos abatement activities in the State of Michigan in accordance with Act 135 P.A. 1986, as amended, (Asbestos Abatement Licensing Act) and any subsequent State of Michigan Acts.

- 2.1.2 A list of all employees who will participate in the project, including delineation of experience and assigned responsibilities (including subcontractors' employees who may enter the work area).
- 2.1.3 Proof that the “competent person” to be responsible for the execution of this project has had Contractor/Supervisor training and accreditation in accordance with Michigan Public Act 440 of 1988. THIS PERSON SHALL BE ON SITE AT ALL TIMES.
- 2.1.4 Employees who will work on this project have had a minimum of thirty-two (32) hours of worker training and accreditation in accordance with Michigan Public Act 440 of 1988.
- 2.1.5 Proof those employees who work on this project have had proper medical screening as required by OSHA 29 CFR, Part 1926.1101 (M) (1) (2) (3) (4) and (N) (3), 29 CFR 1910.20 and 29 CFR 1910.134.
- 2.1.6 Proof those employees who work on this project have had proper respirator fit testing for all personnel who wear tight fitting face to face piece seal respirators.
- 2.1.7 Copies of all workers’ Michigan State Accreditation “Cards” must be provided to the Owner's Consultant prior to being allowed within the project area. For any employee(s) who have approval but do not yet have cards in their possession; the Contractor must provide a signed statement (on company letterhead) stating that state approval has been given to that/those employee(s). This statement must include the name of the state employee who granted verbal approval. In addition to this letter, the Contractor must provide a copy of the employee's training certificate, appropriate fit test(s) and doctor's written opinion.
- 2.1.8 A detailed written explanation of the following items:
  - 2.1.8.1 Preparation of the work area.
  - 2.1.8.2 Decontamination procedure for personnel, work area and equipment.
  - 2.1.8.3 Abatement methods and procedures to be utilized.
  - 2.1.8.4 Procedures for handling and disposing of waste materials including the name and address of the landfill to be used.
  - 2.1.8.5 Emergency Planning Procedures (see Section 8.0 of these specifications).
  - 2.1.8.6 A sequence of work and a performance schedule.

The items discussed in this section must be presented at the Pre-Start Meeting and a copy must also be kept in a log book which will be in view at the job site at all times. The items listed in the “Regulations” section of this specification must also be included in this logbook. Proof of Contractor Licensing and Emergency Procedures as outlined above must also be posted in view near the decontamination chamber entrance as well as the notification addressed in Item 5 and the sign-in sheet addressed in Item 10 of these specifications.

- 2.2 At this meeting, the Contractor and Owner shall agree on the existing conditions of the work area and the areas immediately surrounding this area.

### **3 Log Book/Regulations**

- 3.1 The Contractor shall have the following items in view at the job site at all times. These items must be kept in a log book (three, 3, ring binder) as described in the “Pre-Start Meeting” section and include all items stated in section 2.1.
  - 3.1.1 OSHA Regulation 29 CFR, Part 1926.1101 and MIOSHA R 325.51301
  - 3.1.2 Environmental Protection Agency 40 CFR, Part 61 Subpart M: (National Emission Standard for Hazardous Air Pollutants).
  - 3.1.3 Environmental Protection Agency 40 CFR, Part 763.
  - 3.1.4 A complete set of these specifications.
  - 3.1.5 Appropriate MSDSs.

- 3.2 Whenever during the course of this contract the Contractor, his subcontractor or his employees encounter asbestos, the Contractor shall handle, remove, and dispose of the asbestos strictly in accordance with the rules, guidelines, and regulations specified by EPA, OSHA, the Michigan Department of Consumer & Industry Services, the Department of Environmental Health, and all other applicable regulatory agencies. The most recent edition or revision of any relevant regulation, standard, document or code shall be controlling. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall be utilized.

#### **4 Submittals to Owner's Representative/Consultant**

- 4.1 The following shall be submitted for all employees who will participate in the project, to the Owner's Representative before project begins.
- 4.1.1 Copy of Employee Training Certificates.
  - 4.1.2 Copy of MDPH accreditation cards or letter by Contractor with verbal acceptance from MDPH (see section 2.1.7).
  - 4.1.3 Copy of dated fit test.
  - 4.1.4 Copy of doctors/PLHCP written opinion.

#### **5 Notification Procedures**

- 5.1 The Contractor will make all necessary notifications to the appropriate federal, state and local agencies.
- 5.2 The National Emission Standards for Hazardous Air Pollutants (NESHAP), Asbestos regulation 40 CFR 61, Subpart M, requires that in a facility being renovated, if the combined amount of regulated asbestos containing materials being removed is at least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or is at least 1 cubic meter (35 cubic feet) off of facility components where the length or area could not be measured previously, a ten (10) working day notification must be submitted to the EPA and the Michigan Department of Environmental Quality. All the requirements of 40 CFR 61.145 apply, including but not limited to the following:
- 5.2.1 An indication of whether the notice is an original or a revised notification.
  - 5.2.2 Name, address, and telephone number of the facility Owner and operator and the Owner or operator of the asbestos removal firm.
  - 5.2.3 Type of operation: demolition or renovation.
  - 5.2.4 Facility description including at least the following:
    - 5.2.4.1 Size (square meters or square feet and number of floors).
    - 5.2.4.2 Age.
    - 5.2.4.3 Present and prior uses.
  - 5.2.5 Procedure, including analytical methods, employed to detect the presence of asbestos-containing material. The inspector's name and accreditation # shall be documented.
  - 5.2.6 Estimate of the approximate amount of regulated asbestos-containing material to strip using the appropriate units, either linear meters (linear feet) for pipes, square meters (square feet) for other facility components, or cubic meters (cubic feet), if the asbestos-containing material will be stripped from the facility components without being measured.
  - 5.2.7 Estimate of the amount of Category I and Category II non-friable asbestos-containing materials in the affected part of the facility that will not be removed before demolition.

- 5.2.8 Location and address, including building number or name and floor or room number, if appropriate, street address, city, county, and state of the facility being demolished or renovated.
- 5.2.9 Scheduled starting and completion dates of asbestos removal work (or any other activity, such as site preparation that would break up, dislodge, or similarly disturb asbestos material) in a demolition (with the exception of government ordered demolitions) or renovation, and scheduled starting and completion dates of the demolition or renovation.
- 5.2.10 The beginning and ending dates of the report period for planned renovation operations involving individual non-scheduled operations.
- 5.2.11 Description of planned demolition or renovation work including the demolition and renovation techniques to be used and description of the affected facility components.
- 5.2.12 Description of work practices and engineering controls to be used to comply with the requirements of this standard.
- 5.2.13 Name and location of the waste disposal site where the asbestos-containing waste material will be deposited.
- 5.2.14 Description of procedures for handling the finding of unexpected regulated asbestos-containing material or Category I and II non-friable asbestos-containing material that has been crumbled, pulverized, or reduced to powder.
- 5.2.15 For government ordered demolitions, include the name, title, and authority of the government representative ordering the demolition, the date the order was issued, and the date the demolition was ordered to begin by the State or local government representative. Attach a copy of the order to the notification.
- 5.2.16 For emergency renovations a description of the event, including the date and hour the emergency occurred, and an explanation of how the event has caused unsafe conditions or would cause equipment damage or unreasonable financial burden.
- 5.2.17 Name, address, and telephone number of the waste transporter.
- 5.3 Section 220(1)(c) of Act 135 of the Public Acts of 1986, as amended, requires an asbestos abatement Contractor provide the Michigan Department of Consumer & Industry Services a minimum ten (10) day prior notification which includes items under 5.2 (above), in accordance with their requirements for any project that exceeds ten (10) linear feet or 15 square feet or both of friable asbestos-containing material.
- 5.4 All other agency notifications must be made on a timely basis as deemed necessary by those agencies.
- 5.5 Payments of all applicable regulatory required fees and/or charges are the sole responsibility of the Contractor.

## II. ABATEMENT REQUIREMENTS

### 6 Worker's Dress and Safety Equipment

- 6.1 Worker's clothing shall be provided by the Contractor as required by current OSHA/MIOSHA regulation. Rips and tears in the coveralls shall be repaired, or else the coveralls shall be replaced.
- 6.2 The Contractor shall provide protective clothing for the Owner's Consultant, and inspection personnel.
- 6.3 Worker's clothing shall consist of disposable full body coveralls (coveralls should be of disposable paper material), underwear, head covers, gloves, and boots. The Contractor shall supply whatever safety gear is necessary to protect those people authorized to enter the work site, including if necessary, hard hats and eye protection. OSHA approved footwear is mandatory while at the project site (inside and outside of the enclosure). No street clothing shall be worn under coveralls.
- 6.4 The Contractor shall have an appropriately rated fire extinguisher in the dirty room and clean room of each enclosure.
- 6.5 The Contractor shall adhere to all OSHA and other regulatory agency requirements regarding the safety of the employees, including but not limited to:
  - 6.5.1 Fire Safety
  - 6.5.2 Ladders
  - 6.5.3 Scaffolding
  - 6.5.4 Confined Spaces

### 7 Respiratory Protection

- 7.1 Respirator protection for workers shall be provided by the Contractor as required by current OSHA regulation.
- 7.2 Respiratory protection consisting of powered air-purifying respirators (P.A.P.R.) with full-face piece and HEPA filters will be provided and used by all asbestos abatement workers. Half-face cartridge respirators may be used for setting up, tearing down, Pre-cleaning and post cleaning work area(s) with the approval and/or at the discretion of the Owner's representative. Workers will always wear a respirator when in the work area. While wearing the respirator, workers will not pull the respirator away from his/her face to talk, smoke, eat, or drink. No workers will be permitted to wear a half-face respirator unless clean-shaven. A fit test for each employee engaged in this work must be completed. These fit tests must be completed in accordance with OSHA regulations.
- 7.3 Combination cartridges (Asbestos and Organic vapor) are required during the removal of mastic materials when chemical means of removal are utilized.
- 7.4 An adequate supply of cartridges and respirators must be on-site and available for workers (regardless of respirator type).
- 7.5 All negative pressure respirator cartridges utilized for asbestos work will be of a P-100 type filter and be certified by the National Institute of Occupational Safety and Health (NIOSH).

### 8 Emergency Planning

- 8.1 Emergency planning shall be developed prior to abatement initiation and agreed to by the Contractor and the Owner or Owner's Representative. All plans must be detailed in writing and posted at the job site (in view near the decontamination chamber entrance).

- 8.2 Emergency planning shall include written procedures for the following emergencies:
- 8.2.1 The Contractor must explain his contingency plan for the possibility of the negative air filtration devices blowing a fuse, tripping a circuit breaker, or losing power.
  - 8.2.2 The Contractor must explain his contingency plan for the possibility that a disposal bag may break or leak.
  - 8.2.3 The Contractor must explain his contingency plan for the possibility of an injury.
  - 8.2.4 For non-life-threatening situations - employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers if necessary, before exiting the work place to obtain proper medical treatment
  - 8.2.5 For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove him/her from the work place and secure proper medical treatment.
- 8.3 The Contractor must detail emergency evacuation routes in case of fire, explosion, or toxic atmosphere, etc.
- 8.4 The Contractor shall take all necessary precautions and actions to protect his employees, subcontractors, Owner's Representatives, Owner's Consultants, government inspectors, public, and the building and structure from exposure to asbestos.

## **9 Preparation of Work Area for Asbestos Abatement**

- 9.1 The Owner shall attempt to furnish utility services for the Contractor's use, including electrical outlets (25 ampere) and water taps in or adjacent to the work area in sufficient quantities and located such that the Contractor can use them for equipment and abatement/decontamination practices. However, should such utility access not be available, the Contractor is solely responsible for the provision of the same. In the event of power failure (regardless of fault), the Contractor is responsible for continuing work using adequate generator power.
- 9.2 Danger signs will be posted at a distance sufficiently far enough from the asbestos abatement work area to permit an employee to read the sign and take necessary protective measures to avoid exposure. Signs shall be in accordance with EPA and OSHA regulations. All possible entrances to the work area shall be posted. Additional signs will be placed at areas designated by the Owner's Consultant.
- 9.3 The building personnel shall attempt to shut down and lock out all heating, cooling, and air conditioning system components that are in, supply, or pass through the work areas should building personnel be unavailable or unable to so do, it is the sole responsibility of the Contractor to do so. The Contractor will seal all intakes and exhaust vents in the work area with tape and 6-mil polyethylene, as well as any seams in system components that pass through the work area. All affected heating, ventilation and air conditioning system filters will be removed and placed in 6-mil polyethylene bags for disposal as asbestos waste.
- 9.4 The Contractor may be required to Pre-clean all movable objects within the work area using a HEPA filtered vacuum and/or wet cleaning methods. Pre-cleaning will be conducted by the Contractor as deemed necessary by the Owner or the Owner's Consultant. After cleaning, these objects shall be removed from the work area by the Contractor and carefully stored in an uncontaminated location as designated by the Owner's Consultant. (Carpeting, drapes, clothing, furniture, and other fabric items contaminated with asbestos may be required to be disposed of as asbestos contaminated waste.)

- 9.5 The Contractor may be required to Pre-clean all fixed objects in the work area using HEPA filtered vacuums and/or wet-cleaning methods. Pre-cleaning will be conducted by the Contractor as deemed necessary by the Owner or the Owner's Consultant. The extent of the Pre-cleaning will be determined by, but not limited to the following factors: the particular application of the asbestos-containing material, its present condition, friability, asbestos content, visible debris and the type of surface to which the material is applied
- 9.6 Where doors or other such building fixtures are removed by the Contractor prior to abatement activities, the Contractor is responsible for replacing doors and/or fixtures upon completion of abatement. Each door and/or fixture shall be sufficiently marked or otherwise identified by the Contractor to insure replacement in the proper location.
- 9.7 The Contractor shall seal all windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, skylights and all other openings between the work area and the areas outside the work area with, at a minimum, 4-mil polyethylene sheeting.
- 9.8 Walls will be covered with at least one layer of 4-mil polyethylene sheeting. Walls that are non-porous and will not be damaged by water, surfactant, or encapsulation do not necessarily need protection. They can be decontaminated using HEPA vacuums and wet cleaning techniques. The Owner or the Owner's Consultant will advise the method deemed most appropriate and the Contractor shall comply with the method chosen.
- 9.9 Floors shall be covered with at least three layers of 6-mil polyethylene sheeting.
- 9.10 Non-waterproof tape may not be used for attaching polyethylene sheeting or for sealing polyethylene leaks. High quality duct tape or its equivalent shall be used for this purpose.
- 9.11 The Owner or the Owner's Consultant must approve the decontamination chamber location, Contractor parking, dumpster location and entrances that the Contractor will use for the movement of supplies and personnel.
- 9.12 Equipment storage, bathroom usage designation, foreman's office and designated break areas (if available) will be determined by the Owner or the Owner's Consultant. Only project areas and designated areas are to be used.
- 9.13 No asbestos abatement shall begin until the Owner's Consultant has inspected and approved the enclosure built around the work area.

## **10 Decontamination**

- 10.1 The Contractor will construct decontamination facilities in a predesignated area which will house the clean room, shower room, dirty room, and, when feasible, an equipment room. This facility will be, at minimum, a three-chambered with an entrance airlock with shower facilities in its central chamber. The dimensions of these chambers will be adequate for the number of men needed for the project. At least two layers of 6-mil polyethylene will be placed on the floor of the entire decontamination chamber, to prevent leakage of water from the showers. The walls, floor, and ceiling covering of the airlock construction will be seamed to each other in a fashion making them air and water tight. One end of this construction will exit to the clean area outside the containment barrier walls. The other end of this construction will exit inside or at the containment barrier walls. Except for these doors, all three chambers will be partitioned from each other with air and watertight flaps made of 6-mil polyethylene. Four (4) flapped doors will be constructed with two (2) layers of 6-mil polyethylene. One door will be at the entrance of the clean room, one door at the entrance to the shower, one door at the entrance to the dirty room, and the last door at the entrance to the work area. Both layers will be attached to the side of the door that faces toward the work area. The first layer of polyethylene will be attached at the top, bottom, and sides of the door opening. It will be slit down the middle. The second layer of polyethylene will be attached only at the top of the door on the dirty side of the door opening. It will be wider than the slit made in the first layer and will hang like a flap. When air

is drawn from the clean side of the airlock into the work area it will cause the door flaps to lift. If air attempts to move from the work area end of the airlock toward the clean end or outside of the enclosure, it will force the flaps shut, closing the slit in the first polyethylene layer and thus stopping the air flow. All four (4) door openings or flaps will be constructed to allow clean air into the enclosure, but stopping air from exiting the enclosure. The central chamber will contain shower(s). Each shower stall will sit in a pan with at least six-inch sides. Suitable hoses will be used to supply hot and cold water to the showers. A sump pump or other suitable and safe device will be used to filter and dispose of the shower wastewater through a special HEPA filter. No water may leave the work area without undergoing HEPA filtration or being treated as asbestos waste. Black polyethylene sheeting may be used for privacy on the decontamination facility.

- 10.2 The Contractor may construct a two-chambered decontamination airlock to serve as a debris port. All asbestos waste will be moved out through this port or through the decontamination unit. The chamber will be constructed in the same manner as the main decontamination airlock, but excluding the shower facility. As each bag is filled, it will be set into the first room for temporary storage. Three workers will be needed to complete the waste decontamination process. A worker in the first room will wash and hand the bag to a worker in the second room where he/she will then double-bag the material. The second worker will then hand the double-bagged material to a third worker who loads the material on the transport vehicle (airlocks must exist between each room, as in the main decontamination facility). If a debris port is not possible, all precautions should be taken when hauling waste through the main decontamination facility, where all bags will go through the decontamination process. If a separate decontamination facility is constructed it shall be sealed while not in use.
- 10.3 All workers, without exception, will change street clothes in designated areas (clean room) prior to the start of each day's work. Lockers or acceptable substitutes will be provided by the Contractor for street and work clothes. After workers are properly dressed in protective gear, they will walk through the shower and dirty room into the work area.
- 10.4 At the end of the work shift, and anytime the worker leaves the work area, he/she will decontaminate by removing all contaminated work clothes in the dirty room, but leaving his/her respirator on. He/she will then proceed to the showers and properly wash. Respirators will be worn while showering and remain on until the respirator is clean of asbestos. The cartridges will then be removed and disposed of as asbestos waste and the respirator stored in the clean room. Workers will shower before breaks, lunch and at the end of each day's work. Hot water, towels, soap and hygienic conditions shall be provided by the Contractor.
- 10.5 Adequate toilet facilities may be located outside of the work area and decontamination for this purpose will be employed. Where such facilities do not exist, the Contractor will provide portable service.
- 10.6 No smoking, eating or drinking is to take place in the work area. Prior to smoking, eating, drinking or using toilet facilities, workers will fully decontaminate by showering. A new coverall will then be used to re-enter the work area.
- 10.7 Procedures developed for evacuation of injured workers (see 6.3, Emergency Planning) will be used. Aid for a seriously injured worker will not be delayed for reasons of decontamination.
- 10.8 Worker's footwear will remain inside the work area until the completion of the job.
- 10.9 All wastewater must be passed through a HEPA filter or collected in an airtight container and disposed of as asbestos waste.
- 10.10 All Contractor's tools and supplies, including large items such as ladders and scaffolding must be properly decontaminated when removing them from the project area.

## 11 Methods of Asbestos Abatement

NOTE: The use of supplies, equipment, tools, etc.; owned, rented or otherwise; in the possession of the Building Owner is strictly prohibited.

- 11.1 The asbestos material will be sprayed with either removal encapsulant or "amended water" (which contains an additive to enhance penetration). A fine spray of either solution will be applied to prevent fiber disturbance preceding the removal of the asbestos material. The asbestos will be sufficiently saturated to prevent emission of airborne fibers in excess of the exposure limits prescribed in the OSHA standards referenced in these specifications. The Contractor shall not allow excessive water to accumulate in the work area. If removal encapsulant water is not used, surrounding areas will be periodically sprayed and kept wet to facilitate removal with minimum fiber release. A high humidity will be maintained in the work area to assist in fiber settling. If at any time the Owner's Consultant determines the material is not kept adequately wet, misters and/or sprinklers will be mandatory.
- 11.2 Removal of asbestos material will be done in manageable sections with two-person teams (if needed). Material will be removed as intact sections or components whenever possible and carefully lowered to the floor.
- 11.3 The waste material will be packed in labeled 6-mil polyethylene bags (held within 55 gallon drums with the required EPA & OSHA labels where appropriate) before starting the next section to prevent the material from drying. Double bagging will always be used. Bags shall not be over-filled and will be securely taped or sealed at the top to prevent accidental opening or leakage during removal, storage and transport. All bags and/or drums shall have all appropriate warnings and labels attached to them.
- 11.4 Large components removed intact will be wrapped in two layers of 6-mil polyethylene sheeting secured with tape properly labeled for transport to the landfill. Such packaging shall have all appropriate warnings and labels attached to them.
- 11.5 When removal of building materials (electrical, light, duct work, etc.) is necessary, the Contractor shall develop drawings indicating existing materials and their exact locations.
- 11.6 Personnel knowledgeable and experienced in electrical work must be used when installing or making connections to any electrical components within the facility, as well as when removing and/or replacing lights.
- 11.7 All ceiling demolition, including but not limited to wires, hangers, steel bands, nails, screws, metal lath, tin sheeting, and other objects may be required to be treated as asbestos waste. These materials have sharp edged components that will tear the polyethylene bags and sheeting, thus, this waste must be placed into fiberglass or fiberboard drums for disposal and labeled appropriately.
- 11.8 No bags shall be thrown or dropped at any time.
- 11.9 All containerized asbestos waste that is stored on-site (if allowed) shall be properly labeled and placed in a locked or secured location until ready for final disposal. Labels shall be of sufficient size and contrast to be readily visible and legible. The sign shall read:

**DANGER ASBESTOS  
CANCER AND LUNG DISEASE HAZARD  
AUTHORIZED PERSONNEL ONLY  
RESPIRATORS AND PROTECTIVE  
CLOTHING ARE REQUIRED IN THIS AREA**

- 11.10 All asbestos abatement projects will be completed with the use of HEPA air filtration devices. Each unit must have three filters, including a HEPA filter capable of removing minute asbestos fibers. Each unit has ducts that must be exhausted to the outside air. Inlet and outlet ports of the air filtration devices must be covered with tape and 4-mil polyethylene sheeting when not in use. HEPA air filtration devices will be set up so that the air in the enclosure is drawn away from the abatement worker. Removal and cleaning operations will always move towards the air filtration devices. HEPA air filtration devices will be run until the completion of the project.
- 11.10.1 The Contractor will provide and maintain a pressure differential strip gauge. It will be activated prior to removal of any building material and continue operating until the final clearance results have been determined. Placement of the differential strip gauge is subject to the approval of the Owner's Consultant. The Owner's Consultant may, at their discretion, utilize additional pressure differential strip gauges or other devices to measure the pressure differential.
- 11.10.2 A minimum reading of negative 0.020 inches of water on a differential pressure gauge shall be maintained at all parts of the enclosure.
- 11.10.3 Sufficient negative pressure will be used in the enclosure to evacuate the air once every 15 minutes (minimum).
- 11.10.4 Smoke tubes shall be used daily by the Contractor to test for leaks and breeches in the containment.
- 11.11 All air filtration devices must be ducted to the outside of the building from a position that is securable. Flexible duct will be used and placed at a location approved by the Owner's Consultant.
- 11.12 All gross amounts of asbestos debris shall be cleaned up, bagged, and sealed at the end of each working day.
- 11.13 The Contractor shall transport materials to the ground via leak-tight chutes or such other containers if the material is being removed or stripped more than 50 feet above ground level and not removed as units or in sections.
- 11.14 A thick encapsulant such as "VIAC<sup>®</sup>" shall be applied to any exposed pipe insulation ends leading away from the enclosure area, regardless of material make-up.
- 11.15 Only vacuums and air filtration devices with "HEPA" filters will be allowed. No "shop-vacs", homemade hybrid vacuums or air filtration devices will be allowed on site.

## **12 Non-Friable Material**

- 12.1 Under certain circumstances, asbestos-containing materials may be removed in a non-friable state. The circumstances under which such removal will be allowed will be determined by and at the sole discretion of the Owner and/or the Owner's Consultant.
- 12.2 Non-friable asbestos-containing floor tile may be removed utilizing infra-red heat machines. The following procedures shall be strictly adhered to.
- 12.2.1 Critical barriers will be established over all vents, doors or other openings between the work area and other areas of the facility. These barriers shall be constructed in such a manner as to prevent any objectionable smoke or odor from penetrating outside the work area.

- 12.2.2 The removal of the asbestos-containing floor tile will be conducted with the use of HEPA air filtration devices. Each unit must have three filters including a HEPA filter. Each unit shall be exhausted to the outside air. Inlet and outlet ducts of the air filtration devices must be covered with tape and at least 4-mil polyethylene when not in use. The HEPA air filtration devices will be activated prior to any removal operations being commenced and will remain running 24 hours per day until the completion of the project.
- 12.2.3 All air filtration devices must be ducted to the outside of the building. The area where the duct leaves the building must be secured and protected from vandalism and the elements. Flexible ductwork will be used and shall be placed at locations approved by the Owner and/or the Owner's Representative.
- 12.2.4 The Contractor has sole responsibility to arrange for the arrival and placement of the infra-red heat machine(s) within the facility. Additionally, the Contractor shall have at least one individual experienced in electrical work who can make whatever electrical connections to power the machines. It is not the Owner's responsibility to make any electrical connections. Any involvement by the Owner's personnel will result in backcharges to the Contractor.
- 12.2.5 The Contractor is responsible for the provision of charged and suitably rated fire extinguishers within the work area(s). The number necessary shall be determined in part by the size of the work area and the number of infra-red heat machines in use. The Owner and/or the Owner's Consultant may require additional extinguishers at their sole discretion.
- 12.2.6 The Contractor shall take special care to ensure that the infra-red heat machine(s) are not left on one area of floor tile causing the floor tile to burn and give off excessive odor and smoke.
- 12.2.7 The floor tile shall be carefully scraped up off the underlying flooring utilizing non-mechanical methods. Special care should be taken to ensure that the floor tile is removed in whole pieces. Chipping the floor tile is strictly forbidden. The floor tile must remain in a non-friable state at all times.
- 12.2.8 As the floor tile is removed, the Contractor's personnel shall carefully place the tile into fiberboard barrels. Other types of materials for the barrels will be considered at the discretion of the Owner's Consultant. However, barrels shall be required to hold the tile being removed. Exceptions to this policy will not be considered or allowed
- 12.2.9 Each barrel shall be labeled and disposed of in strict compliance with all applicable requirements as set forth in Section 16 et. seq. of these Technical Specifications. The Owner and/or the Owner's Representative shall make the decision in its/their sole discretion whether a requirement is applicable.
- 12.3 Non-friable asbestos-containing transite material may be removed at times utilizing, at a minimum, the following procedures. The circumstances under which such removal will be allowed and exactly which procedures shall be utilized shall be determined by and at the sole discretion of the Owner and/or the Owner's Representative.
- 12.3.1 The transite must remain in a non-friable state throughout the removal process. Special care must be utilized when removing the material either from the underlying substrate or from whatever type of frame is holding the material.
- 12.3.2 The material should be wetted thoroughly. Special care should be taken with the edges and/or other protrusions through the material (i.e. screw holes, nail holes, etc.) as soon as they are exposed. The wetting process needs to be repeated as necessary to maintain the wetted condition and to prevent fibers from being released.

- 12.3.3 Polyethylene drop cloths should be utilized whenever possible to enable material to be more easily cleaned.
- 12.3.4 Any items removed from the transite material shall be disposed of as asbestos waste. Such items would include but not be limited to screws, nails and other such fasteners
- 12.3.5 The material shall be wrapped in 6-mil plastic and securely sealed with waterproofed duct tape. This wrapped "package" shall then be wrapped again and securely sealed.
- 12.3.6 Certain transite materials may be more economically wrapped by utilizing 6-mil polyethylene asbestos disposal bags. In such instances, the material shall be double-bagged with each bag being sealed individually with high quality duct tape.
- 12.3.7 Any polyethylene drop cloths or other plastic shall be wrapped and sealed as indicated in Section 12.3.6 of these Technical Specifications.
- 12.3.8 Should the removal of the transite material be conducted within the confines of a facility, critical barriers may have to be established over all vents, doors or other openings between the work area and other areas of the facility.
- 12.3.9 The Contractor shall ensure that its employees strictly comply with Sections 6, 7, and 8 of this Technical Specification regarding worker protection, respiratory protection, and emergency planning. Should additional steps need to be taken to prevent the exposure of asbestos fibers for the facility, facility occupants or other workers at the site; the Contractor shall promptly comply with the requests of the Owner and/or the Owner's Representative. The decision to require any additional measures to be taken will be at the sole discretion of the Owner and/or the Owner's Representative.
- 12.3.10 Each "package", bag or other container with transite material within shall be labeled and disposed of in strict compliance with all applicable requirements as set forth in Section 16 et. seq. of these Technical Specifications. The Owner and/or the Owner's Representative shall make the decision in its/theirs sole discretion whether a particular requirement is applicable.
- 12.3.11 Any areas that may be exposed between the outside and inside of the facility or any areas within the facility shall be sealed by plywood or such other material so as to secure the building both from the elements and vandalism. The Contractor shall be responsible for the security of the area where the work was performed or is being performed.

### **13 Glove Bag Technique**

- 13.1 A solution of amended water shall be prepared (according to manufacturer's instructions) for the air-less sprayer.
- 13.2 The glove bag should be fitted to the size of the pipe by cutting the top and the topsides of the glove bag. A polyethylene drop cloth shall be placed under the glove bag work area.
- 13.3 The following tools and supplies at a minimum shall be placed inside the glove bag in the tool pouch: utility knife, wire brush, rags, container with thick encapsulate (such as Childer's VIAC®). Additional items or tools shall be placed inside dependent on the particular job.
- 13.4 The glove bag is then attached to the pipe by folding the open edges together (making a top seam above the pipe) and securely sealing them with duct tape, as well as sealing both cut sides around the pipe.

- 13.5 The bottom seam of the glove bag may be sealed with duct tape to prevent any leakage from a defective bag.
- 13.6 Insert the wand of the airless sprayer through the glove bag by making a small hole in a location that allows the wand to move freely in the bag, and tape the polyethylene tightly. (There may be a prefabricated hole, especially for the sprayer.)
- 13.7 Insert the nozzle of the HEPA vacuum through the appropriate opening (prefabricated hole) and tape the polyethylene tightly around the nozzle. The vacuum (turned on), in association with a flap, will be used throughout the duration of the glove bag removal project in order to establish proper negative pressure within the glove bag.
- 13.8 Place your arms into the glove bag appendages and thoroughly wet the pipe insulation.
- 13.9 Using the knife, cut through the asbestos at each end of the section to be removed. The section to be removed is then slit from end to end (keeping material wet while cutting).
- 13.10 The insulation is then lifted off the pipe and lowered carefully to the bottom of the glove bag.
- 13.11 Using the wire brush, towels and water, the pipe shall be thoroughly cleaned.
- 13.12 Wet the entire inside of the bag with specific attention to the polyethylene around the pipe and the arms and sockets.
- 13.13 Following a visual by the Owner's Consultant, the exposed end of the insulation remaining on the pipe shall be encapsulated, as well as the bare pipe.
- 13.14 Put all tools and supplies into wet cleaned arm socket by pulling socket inside out.
- 13.15 Tape the flap and collapse the bag by sucking all of the air out of the bag using the HEPA vacuum.
- 13.16 Tape the arm close to the tools (tape it in two locations with a one-inch space between the taped spots). Cut between the taped spots and put the enclosed tools into a bucket of water.
- 13.17 Remove the sprayer wand and seal the opening.
- 13.18 Remove the vacuum nozzle and seal the opening.
- 13.19 The glove bag should be squeezed tightly (as close to the top as possible) twisted, and sealed with duct tape.
- 13.20 Cut the bag off the pipe above the taped area and put the glove bag and drop cloth into an asbestos disposal bag, as well as the remaining portion of the bag on the pipe.
- 13.21 Clean the tools in the bucket of water and dispose of the water and glove bag remains in the asbestos disposal bag. The clean tools should be placed inside a polyethylene bag for future use.

#### UNACCEPTABLE PRACTICE USING THE GLOVE BAG TECHNIQUE

- 13.22 Glove bags shall not be slid down the length of the pipe. Only insulation within the dimensions of the glove bag may be removed.
- 13.23 The Owner's Consultant shall determine when the glove bag technique to be used is acceptable.

#### **14 Post Abatement Clean-Up**

#### Specifications Attachment F

- 14.1 After completion of all removal and stripping, all surfaces within the work area will be wire-brushed and/or wet-wiped to remove all visible residue.
- 14.2 All visible accumulations of asbestos-containing materials and asbestos-contaminated debris will be removed and containerized. Durable plastic shovels must be used in place of metal shovels in order to minimize damage to floor sheeting.
- 14.3 Tools will be decontaminated by removing any gross amounts of asbestos from them in the work area. Following this, they will be wiped off in the dirty room and then sprayed down with water in the shower area. All hand tools will then be sealed in plastic bags. Workers will wear protective equipment throughout this process. (Where space allows, a separate equipment room will be built inside the enclosure. This will eliminate the accumulation of gross asbestos on tools and equipment and will facilitate decontamination of these items.) No tools or equipment will be allowed to leave the work area without being decontaminated.
- 14.4 Following the cleanup of visible accumulations, the polyethylene sheeting will be removed from the walls and ceiling, and the interior layer will be removed from floors. At this point, any asbestos that has fallen behind the polyethylene will be cleaned up. However, all barriers to doors, windows, and other critical barriers to clean areas will be left in place until final air checks are completed.
- 14.5 Following clean up of visible accumulations of asbestos waste; the entire area will be wet-wiped. During setting/drying periods no entry, activity, or ventilation into the work area will be allowed. However, the HEPA air filtration devices will continue to operate.
- 14.6 All removed polyethylene, tape, cleaning material, and contaminated clothing will be placed in 6-mil polyethylene bags or polyethylene lined drums, sealed and labeled as described above for disposal as asbestos waste material.
- 14.7 Only clear drying encapsulants and amended solutions may be used.
- 14.8 Prior to final clearance sampling, all items will be removed from the dirty room.

## **15 Acceptance Criteria for Area Re-Occupancy**

- 15.1 The Contractor will clean all work site surfaces in a proper manner with appropriate equipment in accordance with Item 13 of these specifications.
- 15.2 After completion of the cleaning operations, the following activities shall be performed:
  - 15.2.1 A complete visual inspection to insure dust free conditions. The Owner's Consultant(s) shall tour and inspect the entire work area, including but not limited to: ventilation openings, doorways, windows, and other openings; he/she shall look for debris from any sources, residue on surfaces, or any other matter. If any debris or residue is found, repeat the final cleaning until visual inspection is passed. It shall be the right of the Owner's Consultant(s) to inspect and determine if additional cleaning is necessary.
  - 15.2.2 A clear drying encapsulant will be used to seal all surfaces of the work area. Non-clear drying encapsulants can only be used upon approval by the Owner and/or Owner's Consultant.
- 15.3 Air samples will be collected following completion of all cleaning operations as specified in 14.1 - 14.7, following encapsulation as specified in 15.2.2, and after the work area is completely dry.
- 15.4 Post-abatement air samples collected from an area in which less than or equal to 160 square feet, or 260 linear feet of ACM have been removed, enclosed or encapsulated, may be analyzed using Phase Contrast

Microscopy (PCM). If more than 160 square feet or 260 linear feet of ACBM are removed or encapsulated, the post-abatement air samples collected must be analyzed by Transmission Electron Microscopy (TEM).

15.4.2 Transmission Electron Microscopy (TEM) Clearance

When the work site has become completely dry, the Owner's Consultant shall collect at least thirteen (13) post-abatement air samples according to 40 CFR, Part 763 (AHERA Regulations). At least five samples shall be taken in the abatement site; and five samples shall be taken at locations representative of air entering the abatement site. A minimum of 1,200 liters per air sample and a maximum of 1,800 liters per air sample shall be collected using aggressive sampling techniques. If the post-abatement test reveals fiber levels in excess of 0.01 fibers/cc, an average of the five inside the regulated work area samples yield concentrations greater than 70 asbestos structures per millimeter squared and/or if the Z-Test analysis in accordance with AHERA does not pass, the cleaning and measurement operations specified in Sections 13 and 14 of these specifications will be repeated until the area is in compliance. Performing the Z-Test analysis is solely at the discretion of the Owner's Consultant.

15.4.3 Phase Contrast Microscopy (PCM) Clearance

When the work site has become completely dry, the Owner's Consultant shall collect at least five post-abatement air samples according to 40 CFR, Part 763 (AHERA Regulations). Five samples shall be taken in the abatement site. A minimum of 2,000 liters per air sample shall be collected using aggressive sampling techniques. If the post-abatement test reveals fiber levels in excess of 0.01 fibers/cc, the cleaning and measurement operations specified in Sections 13 and 14 of these specifications will be repeated until the area is in compliance.

- 15.5 After the work area is found to be in compliance, all entrances and exits are unsealed, and the polyethylene sheeting, tape and any other trash and debris shall be placed in double sealed polyethylene bags (6-mil minimum) or barrels lined with one polyethylene bag (6-mil minimum), and properly labeled and disposed of.

## **16 Disposal of Asbestos Material and Related Debris**

- 16.2 All asbestos materials and miscellaneous debris in properly labeled polyethylene bags (double bagged) or other containers will be transported to the predesignated disposal site in accordance with the guidelines of the U.S. Environmental Protection Agency and the Department of Environmental Quality. Asbestos disposal forms will be completed to document proper disposal of asbestos waste. (These must be submitted before final payment will be made.)
- 16.3 All containers bagged or wrapped materials with asbestos-containing materials shall be labeled with the name and address at which the waste was generated, prior to materials being transported off the facility site.
- 16.4 Workers unloading the polyethylene bags and machinery operators will wear respirators when handling material at the disposal site.
- 16.5 All pertinent DOT rules and regulations will be followed when transporting asbestos.
- 16.6 All containers or wrapped materials shall be posted with Class 9 hazardous waste signs.
- 16.7 All asbestos-containing materials shall be transported in covered vehicles.
- 16.8 All dumpsters, trucks or other containers used to transport asbestos contained materials shall be properly labeled during the loading of waste.

## **17 Submittals Prior To Contractor Release & Final Payment**

- 17.2 Damages: The Contractor shall promptly repair any and all damages caused to facilities at no cost to the Owner.
- 17.3 The following must be submitted prior to final payment:
- 17.3.2 Copies of Disposal receipts of all asbestos contaminated material, plus copies of all transport manifests, trip tickets, or other disposal documentation.
- 17.3.3 All documentation requested in Submittals to Owner's Representative, Section 4.1.

### III. WORK/CONDUCT REQUIREMENTS

#### 18 Supervision, Personnel and Misconduct

- 18.2 A "competent person" as defined in 29 CFR 1926.1101 must be on-site at all times throughout the duration of the project(s). This competent person, as designated prior to the start of said project(s) must remain the same throughout the duration of the project(s).
- 18.3 The Owner's Consultant IS NOT THE CONTRACTOR'S OUT-MAN. The Contractor must provide one out-man for each enclosure (unless the decontamination chambers are within "talking" distance of each other). The out-man must always remain within talking distance of the enclosure to which he/she is assigned.
- 18.4 A Foreman with competent-person training must remain within the enclosure at all times during the project.
- 18.5 Contractors employees are subject to immediate dismissal if any of the following, but not limited to the following, occurs:
- 18.5.2 Failure to follow proper abatement procedures, including but not limited to respiratory protection and the throwing of asbestos disposal bags outside of the enclosure.
- 18.5.3 Physical threats and violence to the Owner's Consultant or any other person.
- 18.5.4 Property damage or theft.
- 18.5.5 Reckless driving on Owner's property.
- 18.5.6 Discourteous and ill-mannered statements made to the Owner, Owner's employees or Owner's Consultant.
- 18.5.7 Consumption of alcohol on Owner's premises.

#### 19 Site Security/Site Cleanliness

- 19.2 The work area is restricted to only authorized, trained and protected personnel. These personnel may include the Contractor's employees, employees of subcontractors, Owner's employees and Representatives, state and local inspectors, and any other designated individuals. The list of employees who will participate in the project as defined in 2.1.2 of these specifications will be the only employees allowed to enter the work area. Additional employees assigned to this project **must** be cleared through the Owner or the Owner's Consultant. Documentation of all training, medical, and other pertinent requirements are needed before the employees participation.
- 19.2.2 An employee shall not remain on the Owner's premises if he/she is prohibited from participating in the project as a result of insufficient paperwork or if the Owner's Consultant determines the

employee, in any manner, is detrimental to the safe completion of the project.

- 19.2.3 The Contractor shall record the names and social security numbers of all people on a sign-in sheet who enter the work site, and maintain this record for thirty years.
- 19.3 Entry into the work area by unauthorized individuals shall be strictly prohibited.
- 19.4 Access to the work area shall be through a single worker decontamination system. All other means of access (doors, windows, hallways, etc.) shall be blocked or locked so as to prevent entry to or exit from the work area. The only exceptions for this rule are the waste pass-out airlock which shall be sealed except during the removal of containerized asbestos waste from the work area, and emergency exits in case of fire or accident. Emergency exits shall not be locked from the inside; instead, they shall be sealed with polyethylene sheeting and tape until needed.
- 19.5 The Contractor shall designate one worker to remain outside each enclosure throughout the duration of the project in order to regulate ingress and egress to the work areas as well as to provide needed supplies and equipment. The worker outside the enclosure will be within hearing range at all times. At least one person, at all times, inside the enclosure must have had "competent person" training.
- 19.6 All areas occupied or used in any way by the Contractor (all employees), outside the enclosure(s) but within the building shall be kept in an acceptable condition and thoroughly cleaned at the end of each day, to the satisfaction of the Owner's Consultant. If at any time, food containers or debris is found not properly disposed of, eating on premises shall be terminated.
- 19.7 The Contractor is responsible for maintaining areas outside the building in a condition acceptable to the Owner or the Owner's Consultant. This includes but is not limited to: sanitation, supplies and equipment, and employee driving and substance abuse.

## **20 Stop Work Orders**

- 20.2 If at any time, the Owner or the Owner's Consultant decide that work practices are in violation of the contract specifications or endangering workers, he/she or they will immediately notify the Contractor's on-site Representative of such and operations are to cease until corrective action is taken.
- 20.3 The Contractor shall cooperate fully with the Owner and Owner's Consultant.

## **IV. AIR MONITORING**

### **21 Sampling Requirements**

- 21.2 The Owner's Consultant shall conduct all air sampling for the Owner throughout all phases of the contract.
- 21.3 All non-post-abatement air samples shall be analyzed using the NIOSH 7400 Method. All post-abatement air samples collected in situations involving removal, repair, enclosure, or encapsulation of more than 160 square feet or 260 linear feet of ACBM shall be analyzed under the "Mandatory Transmission Electron Microscopy Method" defined in 40 CFR, Part 763 (ASHERA rules). Post abatement air samples collected in situations involving removal, repair, enclosure, or encapsulation of less than 160 square feet or 260 linear feet of ACBM shall be analyzed using the NIOSH 7400 Method, at the discretion of the Owner and/or the Owner's Consultant.

## 22 Sampling Types

- 22.2 Throughout the abatement and cleaning operations, air sampling will be conducted to ensure that the Contractor is complying with all codes, regulations, and ordinances. The following are representative sampling which may take place at the discretion of the Owner and the Owner's Consultant.
- 22.2.2 Baseline - Collected in various/numerous locations prior to abatement to determine ambient interior fiber levels.
  - 22.2.3 Contiguous - Collected in various/numerous locations outside of the work area in order to detect elevated fiber levels during abatement.
  - 22.2.4 Work Area - Collected in various locations inside the work area to insure compliance with proper procedures and specifications.
  - 22.2.5 Personal - Collected in the breathing zone of the asbestos abatement personnel according to 1926.1101, Appendix A, as amended, of the OSHA regulations. These samples will be placed on employees who are exposed to representative concentrations of airborne asbestos fibers. Personal sampling will ensure that the workmen performing the asbestos abatement projects are not exposed to asbestos contamination exceeding STEL (short term excursion limit) requirements and levels which exceed their respirator protection or otherwise endanger their health. Personal air samples will be collected on individuals as designated by the Owner's Consultant.
  - 22.2.6 Post Abatement - Collected inside and/or outside the work area after the project is completed and the area has been cleaned and dried. This will determine if the job has been done correctly and whether the cleanup process must be repeated. Quantities are determined by all applicable regulations.
  - 22.2.7 Field Blanks - Field blanks are collected to ensure that contamination of cassettes has not occurred. Each set of samples collected will include ten percent (10%) blanks or a minimum of two blanks.