S P E C I F I C A T I O N S

Oxford - USD 358

Demolition
Old 5-6 Building

2021

HANNEY & ASSOCIATES ARCHITECTS
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INDEX TO SPECIFICATIONS – USD #358 OXFORD

DEMOLITION OF OLD HIGH SCHOOL 5-6 BUILDING

ARCHITECTURAL

DIVISION 1 – GENERAL REQUIREMENTS

DIVISION 2 – DEMOLITION WORK

SECTION 00100

INVITATION TO BID & INSTRUCTIONS TO BIDDERS

1. SCOPE OF PROJECT

The Specifications and the accompanying drawings are intended to provide for all materials and labor necessary to complete the Demolition of the **Old High School Building most recently known as the Oxford 5-6 Building, USD 358, Oxford, Kansas.**

1.1 The bid shall include all labor and materials necessary for a complete and operational system. Including work necessary to restore the site, removing debris, after the project is complete.

2. CONTRACT DOCUMENTS

2.1 The General Contractor may obtain electronic plans and specifications from the office of the Architects, **HANNEY & ASSOCIATES ARCHITECTS**, 1726 South Hillside, Wichita, Kansas 67211, (316) 683-8965 Phone. Plans will be available in a drop box folder. Addenda information will be posted on our website.

2.3 Contract Documents are on file and may be viewed at the office of the Architect, and;

2.3.1 Kansas Construction News, 230 Laura, Wichita, Kansas.

3. PRE-BID WALK-THROUGH

3.1 PRE-BID WALK-THROUGH (Non-Mandatory)

3.1.1 A Pre-Bid Walk-Through will be held at the school on Friday, April 2, 2021 at 2:00 p.m. Meet on-site, at the old high school building.

3.1.2 Attendance is not required, but encouraged.

4. PROPOSAL PROCEDURE

4.1 BID DATE

4.1.1 Sealed proposal for this project will be received by the Owner, Oxford Unified School District 358, 319 E. College, Oxford, Kansas, 67119, on **Monday, April 12, 2021, up to and until 2:00 p.m.**

4.1.2 At which time proposals received will be opened **public**. Any proposals received after closing time will be returned unopened.

4.2 Should a proposer find discrepancies in, or omissions from the drawings or documents, or should he be in doubt as to their meaning, he shall at once notify the Architect, who will send written instructions to all proposers. Neither Owner nor Architect will be responsible for any oral instructions.

4.3 Proposals shall be made upon the PROPOSAL FORM or exact copy thereof bound into the specifications.

4.4 Fill in all blanks on the PROPOSAL FORM clearly with ink. Erasures or other changes in a proposal must be explained or noted over the signature of the proposer. Signatures shall be in longhand by a principal duly authorized to sign contracts, and if proposal is by a corporation, the signature shall be accompanied by the corporate seal impression. Proposals shall contain neither alterations nor recapitulation of work to be done.

4.5 Should the Contractor fail to complete all of the work required by the Contract Documents on or before the date bid by this contractor for substantial completion, the Contractor shall pay as liquidated damages, the sum **of two hundred dollars ($200.00)** for each consecutive calendar day thereafter, Sundays and holidays excluded.

4.6 Each proposer is required to bid all alternates included in the Proposal Form except that should he desire not to bid an alternate he may insert the words "no bid" in the space provided for prices for such alternate. In such case, if it is determined to use such alternate, the fact that the cost of the type or method bid in the proposal may be lower than that chosen shall not constitute the basis of a claim by the proposer that the contract shall be awarded to him. If an alternate price called for involves no change in price, proposer shall so indicate by writing the words "no change" in the space provided.

4.7 No oral or telephonic proposals or modifications will be considered. No telegraphic proposals will be considered, but modification by telegraph of proposals already submitted will be considered if received prior to time set for proposal opening.

4.8 Before submitting his proposal, each proposer shall carefully examine all documents pertaining to the work, visit the site of work, and fully inform themselves as to all existing conditions under which the work will be performed. Submission of a proposal will be considered presumptive evidence that the proposer is fully aware of the Contract Documents, pertinent state and markets, and has made allowances in his proposal for all work and all contingencies.

4.9 Any addenda issued during the time of preparation of proposals are to be acknowledged in the Proposal Form and in closing a contract, they will become a part thereof.

4.10 Enclose the proposal along with the required Proposal Security, in an opaque envelope: Proposal For: (State category of the work)

Oxford 5-6 Building Demolition Project

Oxford Unified School District 358

319 E. College

Oxford, Kansas 67119

Name of Bidder.

5. PROPOSAL SECURITY

5.1 Proposal Security, consisting of a bid bond, certified check or cashier's check on a solvent bank, must be enclosed with each proposal for at least five percent (5%) of the Base Proposal.

5.2 Proposal Security shall be made payable, without condition to **Oxford Unified School District 358** as a guarantee that the bidder, if awarded the contract, will promptly execute the formal contract in accordance with the proposal and as required by the other Contract Documents, and that he will furnish good and sufficient bonds for the faithful performance in each category of work will be retained until the contract is awarded or other disposition is made thereof. Deposit checks shall be refunded if bidding documents are returned to the Architect in satisfactory condition within sixty (60) days after awarding the contract.

If bidding documents are not returned, applicable deposit checks shall be returned to the Owner and deposited into the/his account. The successful contractor's deposit shall be returned after the award of the contract.

5.3 Performance Bond and Statutory Bond will be required in an amount of 100% of the contract amount. Such bonds shall be in such form as indicated in the Revisions in the General Conditions and registered at the **Sumner County District Court**.

6. PROPOSAL WITHDRAWAL

A Proposal may be withdrawn on written or telegraphic request received from proposer prior to time for proposal opening. No proposal may be altered or withdrawn for a period of at least thirty (30) days after opening of proposals.

7. SUBSTITUTIONS

7.1.1 The materials, products and equipment described in the bidding documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

7.1.2 No substitution will be considered unless written request for approval has been submitted by the bidder and has been received by the architect at least ten (10) days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a completed description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changed in other materials, equipment or work which incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Architect's decision of approval disapproval of a proposed substitute shall be final.

7.1.3 If the Architect approves any proposed substitute, such approval will be set fort in an addendum. Bidders shall not rely upon approvals made in any other manner.

8. AWARD OF CONTRACT

Contract will be awarded to the responsible proposer submitting the lowest responsible proposal (i.e. combination of Base Proposal and accepted alternates, with due consideration to unit prices), provided:

8.1.1 Evidence of the experience, qualifications and financial responsibility of the bidder and his subcontractors, and the time of completion are all-acceptable to the Owner.

8.1.2 Manufacturer's Guarantee, Service Warranty and financial responsibility of manufacturer.

8.1.3 The total of acceptable proposals is within the financial budget for the project.

8.1.4 The Owner reserves the right to reject any or all proposals, to accept or reject alternate proposals and unit prices, and to waive all technicalities concerning the proposals received when it may be in his best interest to do so.

End of Section 00100

SECTION 00150

GENERAL PROPOSAL

FOR

DEMOLITION OF THE OLD HIGH SCHOOL BUILDING

MOST RECENTLY KNOWN AS THE OXFORD 5-8 BUILDING

USD # 358 OXFORD, KANSAS

Oxford Elementary School
Unified School District 358

Date: _____

The undersigned, in compliance with your invitation for bids for the **Demolition of the Old High School Building most recently known as the Oxford 5-6 Building, USD # 358, Oxford, Kansas**, having examined the site of the work, and being familiar with all the conditions surrounding the work, hereby propose to furnish all labor, materials and supplies and do all work necessary for the project in accordance with the contract documents at the price stated below. These prices are to cover all expenses incurred in performing the required work under the Contract Documents, of which this Proposal is a part.

BASE PROPOSAL – DEMOLITION OF THE OLD HIGH SCHOOL BUILDING MOST RECENTLY KNOWN AS THE OXFORD 5-6 BUILDING, USD # 358, OXFORD, KANSAS:
For all the work described in the specifications and shown on the plans for the Demolition of the Old High School Building most recently known as the Oxford 5-6 Building, USD # 358, Oxford, Kansas; I or (we) agree to perform all the work and furnish all materials including the Supervision and Coordination of the Owners sub-contractors, complete for the sum of:

_____

_____ Dollars ($).

TIME OF COMPLETION
The undersigned agrees, if awarded the Contract; to Complete all work by _____.
The undersigned further agrees that, from the compensation otherwise to be paid; the Owner may retain the sum of Two Hundred Dollars ($200.00) for each consecutive calendar day thereafter, Sundays and Holidays excluded, that the Contract remains incomplete, which sum is agreed upon as the proper measure of liquidated damages which the Owner will sustain per diem by the failure of the undersigned to complete the work at the time stipulated. This amount is not to be construed as in any sense of penalty.

UNIT PRICE #1 – Palletization of 500 Bricks
This unit price shall be to add the cleaning and palletization of 500 bricks from the existing building – to be salvaged prior to demolition, then cleaned and stacked onto a pallet, and stored for owner, as directed by the owner.

DECLARATION

The undersigned declares that he has carefully examined and understands all Bid Documents, including Invitation to Bid, instructions to Bidders, Drawings, Specifications, and Addenda, that he has visited the location of the work and familiarized himself with all conditions under which the work is to be performed, including all pertinent codes and the conditions of labor and material markets, that he has checked quantities and prices, that he has made allowance in his bid for all work and all contingencies, and understands that in signing this bid he waives all right to plead any misunderstanding regarding the same.

The undersigned acknowledges receipt of the following Addenda to the Drawings and/or Specifications.

(Give number and date of each.)

_____	_____
_____	_____
_____	_____
_____	_____
Respectfully Submitted,	(legal name of bidder)
_____	_____
(Title)	(Address of bidder)
_____	
(Signed by authorized officer)	Seal (If bid is by a corporation)

End of Section 00150

SECTION 00300

SPECIAL CONDITIONS

1. EXISTING CONDITIONS

1.1 This project is the demolition of the Old High School Building most recently known as the Oxford 5-6 Building, USD # 358, in Oxford, Kansas.

1.2 During the school year the contractor is to coordinate with the District to minimize interference.

1.3 This Contractor shall review proposed the locations for trash, material storage and staging with the USD #358 grounds manager prior to utilization.

1.5 The Contractor shall provide their own trash and waste receptacles.

2. WORK INCLUDED

These Specifications and the accompanying Drawings are intended to provide for all materials and labor necessary for the **demolition of the Old High School Building most recently known as the Oxford 5-6 Building, USD # 358, in Oxford, Kansas.**

2.1 For this project, all references to "General Contractor" shall also mean "Demolition Contractor".

3. CONTRACT DOCUMENTS

The Contract Documents consist of: The Agreement, the conditions of the Contract (General Conditions, Revisions in General Conditions and Supplementary General Conditions), the Drawings, the Specifications, all Addenda issued prior to the execution of the Agreement, and Change Orders thereafter.

4. CHANGES

It is understood that the Owner shall have the right during the progress of construction to make any alterations, additions, or omissions that he may desire to work, or material herein specified or shown on the Drawings. The same shall be carried into effect by the Contractor without in any way violating the Contract, but if such changes are made, the value of same must be agreed upon in writing between Owner, Architect, and Contractor. No omissions will be allowed, or extra work paid for unless ordered in writing by the Architect.

5. PERMITS

The Contractor shall obtain and pay for all permits, surveys, and inspector's fees required by **Sumner County and the City of Oxford, Kansas.**

6. SPECIAL TESTING

6.1 The Contractor is responsible for testing on all lifts, and backfill during placement; testing shall be performed by a licensed and certified geotechnical engineer to verify compliance.

6.2 The Contractor is responsible for all required special testing, including, but not limited to air sampling/air quality testing, and asbestos testing.

7. SPECIAL WORK NOT INCLUDED

The Owner reserves the right to have special work, not included in the Contract, done during the course of the work herein included.

8. RESPONSIBILITY FOR ACCIDENTS

The Contractor must bear all loss of damage from accident which may occur to any person or persons, by or on account of the execution of the work, until possession is taken by the Owner. The Contractor must provide all legal and necessary guard railing, lights, warning signs, etc., during the progress of the work.

9. DETAIL AND WORKING DRAWINGS

Additional detail and working drawings will be furnished in amplification of the Contract Drawings as they may be required; all such additional drawings are to be considered of equal force with those which accompany these specifications. A complete set of the drawings and specifications must be kept in the building at all times during the progress of the work.

10. DIMENSIONS

This is an existing facility. Field verify any and all required dimensions.

11. FOREMAN

The Contractor must have at the building from start to finish one responsible foreman throughout the entire job; in addition, the Contractor must give the work his personal supervision; the foreman must be on duty during all working hours. Any instructions for notices given to him shall have the same force as if given to the Contractor in person.

12. MATERIALS AND WORKMANSHIP

All materials and workmanship are to be the best of their several kinds, unless specified to the contrary. The Contractor is to furnish all accessories needed, such as scaffolding, forms, protection, and all other temporary work, unless otherwise specified distinctly.

13. DEFECTIVE OR IMPROPER WORK

Any work or materials not conforming to the specifications must be removed by the Contractor and replaced by approved materials or work without extra compensation. All condemned material must be removed from the premises immediately.

14. PROTECTION

All materials in or designed for the work shall be at all times suitably housed or protected, particular care being taken of all finished parts.

15. PRIVY

The General Contractor is to provide a temporary privy.

16. DISRUPTION OF SERVICES

Before digging or trenching commences, each Contractor shall verify with Public Service Companies all known plumbing, gas and underground electrical lines.

17. GUARANTEE

The Contractor shall be responsible for and shall make good any defects due to faults in labor and materials, which may arise or be discovered within one (1) year after the completion of the work and its acceptance by the Architect.

18. WRITTEN WORDS IN PROPOSAL

In case of a difference between words and figures in a proposal, the amount stated in written words shall govern.

19. TRASH AND DEBRIS

The Contractor shall coordinate with School District.

20. TEMPORARY LIGHTING & POWER

The Contractor shall coordinate with School District to access power from the High School.

21. CONSTRUCTION FENCE

The General Contractor shall provide and maintain a 6' high construction fence to secure the construction area for the duration of the project. Access gates (number and location shall be determined by the General Contractor.

22. TEMPORARY ROADS AND PAVED AREAS

22.1 Construct and maintain temporary roads and paved areas adequate to support loads and to withstand exposure to traffic during construction period. Locate temporary roads and paved areas in same location as permanent roads and paved areas. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.

22.2 Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.

22.3 Recondition base after temporary use, including removing contaminated material, regrading, proof-rolling, compacting, and testing. This applies to any area that will not be paved.

22.4 Delay installation of final course of permanent hot-mix asphalt pavement until immediately before substantial completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Division 2- Section "Hot-Mix Asphalt Paving".

23. TEMPORARY WATER and SEWER

23.1 The General Contractor is responsible for all costs of water to bring water to the site during construction for use by all trades.

23.2 The existing sewer shall be properly capped.

24. SALES TAX EXEMPTION

24.1 Materials and equipment incorporated into this project are exempt from payment of Kansas Sales Tax and such Sales Tax shall be excluded from bidder's proposal.

24.2 The Owner will provide the Contractor with a proper exemption certificate number within ten (10) days of Contract date. Upon issuance of a proper exemption certificate number to the Contractor, the Contractor shall assume full responsibility for his own proper use of the certificate number and shall pay all costs of any legally assessed penalties relating to the Contractor's improper use of the exemption certificate number.

24.3 Should the Owner fail to provide a proper exemption certificate number, the amount of the Sales Tax for the project shall be allowed as an extra to the Contract amount.

25. TAXES

The Contractor shall make all necessary forms for and shall pay for all taxes on labor and materials, such as Sales Tax, Social Security Tax, Withholding Tax, etc., without additional cost to the Owner, where such taxes are required by the State and Federal Laws.

26. OMISSIONS

26.1 The Drawings and Specifications are intended to cooperate anything shown on the Drawings but not mentioned in the Specifications or vice versa, or anything not expressly set forth in either, but which is reasonable implied, shall be furnished as though specifically shown and mentioned in both, without any charge.

26.2 Should anything be omitted from the Drawings, necessary to the proper construction of the work herein described, it shall be the duty of the Contractor to so notify the Architect before signing the Contract and in the event of the Contractor failing to give such notice, he shall make good any damages of defects in his work caused thereby without extra charge.

27. PROTECTION OF WORK AND PROPERTY

The General Contractor shall take charge of and assume general responsibility for proper protection of the building during construction. He shall further provide substantial enclosures at all openings as necessary for protection, including doors and locks. Each Contractor shall assume responsibility for his materials stored on the premises.

28. EQUAL EMPLOYMENT OPPORTUNITY

Sections 1 through 5 of K.S.A. 44-1030 (as follows) shall be included in this Contract except those sub-contractors, vendors or suppliers whose cumulative dollar total in any fiscal year is $5,000 or less, or who have fewer than four (4) employees:

28.1 The contractor shall observe the provisions of the Kansas Act against discrimination and shall not discriminate against any person in the performance of work under the present Contract because of race, religion, color, sex, physical handicap unrelated to such person's ability to engage in the particular work, national origin or ancestry;

28.2 In all solicitations or advertisements for employees, the contractor shall include the phrase, “equal opportunity employer,” or a similar phrase to be approved by the commission;

28.3 If the contractor fails to comply with the manner in which the contractor reports to the commission in accordance with the provisions of K.S.A. 1976 Supp. 44-1030, as amended, he shall be deemed to have breached the present Contract and it may be cancelled, terminated or suspended, in whole or in part, by the contracting agency;

28.4 If the contractor is found guilty of a violation of the Kansas Act against discrimination under a decision or order of the commission which has become final, the contractor shall be deemed to have breached the present Contract and it may be cancelled, terminated or suspended, in whole or in part, by the contracting agency;

28.5 The contractor shall include the provisions of Paragraphs (1) through (4) inclusively of this Subsection (a) in every subcontract or purchase order so that such provisions will be binding upon such subcontractor or vendor.

29. LAWS AND ORDINANCES

The Contractor is required to familiarize himself with and observe all laws, ordinances and regulations relating to the work, and such laws, ordinances and regulations are hereby incorporated in and made a part of these specifications and the Contract for this work. All work shall comply with the Americans with Disabilities Act.

30. COMMENCE WORK
Work may commence with Owner's approval.

31. Company's approved equals to the original specified suppliers are required to meet all requirements of the plans, specifications, and standards of performance and construction as established by the first named originally specified manufacturers product.

32. CLAIMS FOR ADDITIONAL TIME DUE TO ADVERSE WEATHER CONDITIONS

32.1 Bad weather day means a day that a contractor is unable to proceed with the stage or stages of the Work that is scheduled for that day due to weather conditions.

32.2 If adverse weather conditions are the basis for a claim for additional time, such claim shall be documented by data substantiating that weather conditions were abnormal for a period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

32.3 The average number of bad weather days reasonably anticipated for each month are as follows: January (10), February (5), March (4), April (5), May (8), June (8), July (6), August (5), September (6), October (5), November (3), December (8).

32.4 The contractor will provide the Architect with a monthly bad weather day report within 5 days of the end of a month. If the contractor fails to report bad weather days 5 days from the end of the month, then it will be assumed that there were no bad weather days for the month.

End of Section 00300

SECTION 00400

INSURANCE REQUIREMENTS

1. GENERAL

1.1 The General Conditions of the Contract for Construction as issued by the American Institute of Architects, A.I.A. Document A201, 2017 Edition, shall be considered as a part of these specifications, as if included herein, subject to the following additions:

1.2 The Contractor shall not commence work under this contract until he has obtained all Surety Bonds and Insurance Certificates submitted as required under these specifications and the General Conditions of the Contract, and such Bonds, insurance and coverage has been approved by the Owner, and his Attorney, and his insurance carrier.

2. INSURANCE COVERAGE AND LIMITS

The Contractor shall purchase and maintain coverages required by the General Conditions of the Contract, Paragraph 11.1 and these Specifications in the following minimum amounts, and provide the Owner, through the Architect, three copies of a Certificate of Insurance on A.I.A. form G705.

	KIND OF INSURANCE	LIMITS OF LIABILITY
2.1	(1) Workmen's Compensation	Statutory Workmen's Comp.
	(2) Employer's Liability	
	Bodily injury by Accident	$100,000.00 each occurrence
	Bodily Injury by Disease	$500,000.00 each employee
	Bodily Injury by Disease Aggregate Disease	$500,000.00 policy limit

2.2 Commercial General Liability

Include premises and operations, independent contractors, products/completed operations (maintain completed operations coverage for two years after substantial completion), broad form property damage, blanket contractual liability and explosion, collapse, and underground (XCU) coverage:

Bodily Injury and Property Damage	$1,000,000 Each Occurrence
Personal and Advertising Injury	$1,000,000 Each Occurrence
General Aggregate (other than products/completed operations)	$2,000,000 Aggregate
Products/Completed Operations	$2,000,000 Aggregate

2.3 Automotive Liability

Bodily Injury and Property Damage	$750,000 Combined single limit
$500,000 Each Occurrence	Independent Contractors
$500,000 Each Occurrence	Completed Operations

	$500,000 Each Occurrence $500,000 Aggregate	Contractual Operations, Independent Contractor Products & Contractual
2.4	Umbrella Liability	$2,000,000 over primary limits; $10,000 retention

3. CONTRACT PROPERTY INSURANCE

3.1 Builders Risk Insurance shall be carried and paid for by the Contractor. Builders Risk will carry special extended coverage's endorsement (All-Risks Builders Risk including transit and storage) in addition to the normal fire, vandalism and extended coverage. The Contractor shall be responsible for any deductible.

3.2 Builders Risk to be carried for the completed value of the work for the insurable value of the work completed in the names of the Owner, the Contractor and all Sub-contractors as their interest may appear.

3.3 Completed products coverage to extend at least one year after final completion of the job.

3.4 The Contractor will provide his own Liability Insurance.

3.5 All rights of subrogation of the Insurance Company must be waived on all insurance's coverages involved under this contract to all parties including Owner.

3.6 Contractors' and Sub-contractors' equipment will not be covered by any insurance provided by the Owner.

End of Section 00400

SECTION 01040

UNIT PRICES

1. GENERAL

For changing quantities of work items from those indicated in the Contract Documents, upon written instruction, the unit prices stated shall be applied in accordance with Article 12 of the General Condition of the Contract. Include labor, materials, equipment, and services, overhead, profit, insurance and other incidental expenses to cover the finished work specified.

2. UNIT PRICES

2.1 **UNIT PRICE NO. ONE**

Palletization of 500 Bricks

This unit price shall be to add the cleaning and palletization of 500 bricks from the existing building – to be salvaged prior to demolition, then cleaned and stacked onto a pallet, and stored for owner, as directed by the owner.

End of Section 01040

SECTION 02221

BUILDING DEMOLITION

PART 1 – GENERAL

1. RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

2. SUMMARY

This Section includes the following:

2.1 Demolition and removal of the Old High School Building most recently known as the Oxford 5-6 Building, USD 358, Oxford, Kansas.

2.2 Demolition and removal of site improvements adjacent to a building or structure to be demolished.

2.3 Disconnecting, capping, or sealing, and removing site utilities.

2.4 Backfill, grading, and clean-up.

3. DEFINITIONS

3.1 REMOVAL

Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or recycled.

3.2 ITEMS TO BE SALVAGED

Detach items from existing construction and deliver them to Owner, ready for reuse.

3.3 EXISTING TO REMAIN

Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed, and salvaged, or recycled.

4. DESCRIPTION OF WORK

Remove and properly dispose of all structures, trash, rubbish, basement walls, floors, foundations, sidewalks, steps, and driveways from the demolition site in compliance with Federal, State, and local regulations.

4.1 Submit a management plan to remove and legally dispose of any asbestos, if asbestos is discovered. Refer to Section 02820.

4.2 Remove any fuel tanks, outdoor toilets and septic tanks, cisterns, meter pits.

4.3 Plug or abandon wells.

4.4 Remove and legally dispose of mercury-containing materials including fluorescent, high-pressure sodium, mercury vapor, metal halide light bulbs, and thermostats containing a liquid filled capsule. PCB-containing materials include capacitors, ballasts, and

transformers where the component is contained within a metal jacket and does not have a specific, legible label stating no PCBs are present.

4.5 Perform site clearance, grading, and restoration.

4.6 Complete the demolition work in accordance with the plans and these technical specifications and any special provisions included in the Contract Documents.

5. MATERIALS OWNERSHIP

Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during building demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner. Refer to Drawings.

6. SUBMITTALS

6.1 SCHEDULE OF BUILDING DEMOLITION ACTIVITIES

6.1.1 Detailed sequence of demolition and removal work, with starting and ending dates for each activity.

6.1.2 Interruption of utility services to the rest of the campus.

6.1.3 Coordination for shutoff, capping, and continuation of utility services.

6.2 PRE-DEMOLITION

Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by building demolition operations. Submit before Work begins.

6.3 LANDFILL RECORDS

Indicated receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

6.4 STATEMENT OF REFRIGERANT RECOVERY

Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

7. QUALITY ASSURANCE

7.1 DEMOLITION FIRM QUALIFICATIONS

An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

7.2 REGULATORY REQUIREMENTS

7.2.1 The Contractor shall comply with all applicable current Federal, State, and local safety and health regulations.

7.2.2 Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

7.2.3 Comply with ANSI A10.6 and NFPA 241.

7.3 PRE-DEMOLITION CONFERENCE
Conduct conference at Project site to coordinate work reviewing methods and procedures related to building demolition including, but not limited to, the following:
7.3.1 Inspect and discuss condition of construction to be demolished.

7.3.2 Review and finalize building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.

7.3.3 Review and finalize protection requirements.

7.4 Upon completion of fill, an approved, qualified Geotechnical consultant shall confirm that fill was correctly installed. Geotechnical consultant services shall be provided by G.C.

8. PROJECT CONDITIONS

8.1 Buildings to be demolished will be vacated and their us discontinued before start of Work.

8.2 Owner occupies occupy other buildings immediately adjacent to demolition area. Conduct building demolition so Owner's operations will not be disrupted.
8.2.1 Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

8.2.2 Maintain access to existing walkways, exits, and other adjacent occupied or used facilities. Do not close or obstruct walkways, exits, or other occupied or used facilities without written permission from authorities having jurisdiction.

8.3 Owner assumes no responsibility for buildings and structures to be demolished. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

8.4 HAZARDOUS MATERIALS (Other than asbestos)
It is not expected that hazardous materials, other than asbestos, will be encountered in the Work.
8.4.1 Hazardous materials, other than asbestos, will be removed by the Owner before start of the Work.

8.4.2 If materials suspected of containing other hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Some hazardous materials may be removed by Owner under a separate contract.

8.5 Storage or sale of removed items or materials on-site is not permitted.

PART 2 – PRODUCTS

9. SOIL MATERIALS

Soil materials for infill must meet applicable standards for satisfactory soils.

PART 3 – EXECUTION

10. EXAMINATION

10.1 Survey existing conditions and correlate with requirements indicated to determine extent of building demolition required.

10.2 The Contractor shall accept the site in its present condition and shall inspect the site for its character and the type of structures to be demolished. The Owner assumes no responsibility for the condition of existing buildings, structures, and other property within the demolition area, or the condition of the property before or after the solicitation for proposals.

10.3 Review Project Record Documents of existing construction provided by USD 358 – Owner. Owner does not guarantee that existing conditions are the same as those indicated in the Project Record Documents.

10.4 Inventory and record the condition of items to be removed and salvaged.

10.5 When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element. Promptly submit a written report to Architect.

11. PREPARATION

11.1 PERMITS AND FEES

The Contractor shall obtain all the necessary permits and pay all permit fees that are required by the Jurisdiction in conjunction with the demolition work.

11.2 UTILITIES

11.2.1 Locate and identify which utilities will remain and which will be removed prior to demolition.

11.2.2 Existing Utilities to Remain

Maintain utility services indicated to remain and protect them against damage during demolition operations. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

11.2.3 Utilities to be Disconnected or Removed

Disconnect all utility services before demolition. Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished. Do not begin demolition work until utility disconnecting and sealing have been completed and verified.

11.3 REMOVAL OF REFRIGERANTS

Remove and recycle refrigerant from air-conditioning equipment before start of demolition. Remove and dispose of appliances and other items that may contain refrigerants in accordance with 40 CFR, Part 82. Appliances and other items that may contain

refrigerants include, but are not limited to, refrigerators, freezers, dehumidifiers and portable or central air conditioners. Refrigerant Recovery must be performed by a certified, EPA-approved technician.

12. PROTECTION

12.1 EXISTING FACILITIES

Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations.

12.2 TEMPORARY PROTECTION

12.2.1 The Contractor shall furnish and place a safety fence around the site of the work adequate to secure the demolition site, including any resulting debris or excavation, and to prevent pedestrian access. The fencing, including all materials, shall be considered incidental to the demolition. The safety fence shall remain in place until the demolished materials are removed from the site and all holes or excavated areas are backfilled.

12.2.2 Protect existing site improvements, appurtenances, and landscaping to remain.

12.2.3 Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.

12.2.4 Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

12.2.5 The Contractor shall not damage or cause to be damaged any public right-of-way, structures, parking lots, drives, streets, sidewalks, utilities, lawns, or any other property adjacent future demolition. The Contractor shall provide such sheeting and shoring as required to protect adjacent property during demolition. Care must also be taken to prevent the spread of dust and flying particles.

The Contractor shall restore existing agricultural drain tiles or roadway subdrains that are cut or removed to parcels released for demolition whether or not the property is scheduled for, including drainable backfill, to original condition. Repairs shall be subject to approval by the property owner where applicable, and by the Engineer.

13. DEMOLITION GENERAL

13.1 GENERAL

Demolish indicated existing building completely, as shown on Drawings. Use methods required to complete the Work within limitations of governing regulations as follows:

13.1.1 Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.

13.1.2 Maintain adequate ventilation when using cutting torches.

13.1.3 Located building demolition equipment and remove debris and materials, so as not to impose excessive loads on supporting walls, floors, or framing.

13.2 SITE ACCESS AND TEMPORARY CONTROLS

Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

13.2.1 Do not close or obstruct streets, walks, walkways, or other adjacent or used facilities without permission from Owner.

13.2.2 Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

14. DEMOLITION

14.1 STRUCTURAL PARTS OF BUILDINGS

14.1.1 No wall or part thereof shall be permitted to fall outwardly from any building except through chutes or by other controlled means or methods, which will ensure safety and minimize dust, noise, and other nuisance.

14.1.2 Subject to site restrictions, outside chimneys or outside portions of chimneys shall be raised in advance of general demolition of each building. Any portion of a chimney inside a building shall be razed as soon as it becomes unsupported by reason of removal of other parts of the building.

14.1.3 Any part of a building, whether structural, collateral, or accessory, which has become unstable through removal of other parts, shall be removed as soon as practicable, and no such unstable part shall be left free-standing or inadequately braced against all reasonably possible causes of collapse at the end of any working day.

14.2 BASEMENTS AND FOUNDATION WALLS

All basement floors, footings, and foundations shall be completely removed from the site. The basement area is to be inspected and approved by the Engineer before backfilling is started.

14.3 CONCRETE SLABS

The Contractor shall remove all concrete slabs, asphalt, surface obstructions, masonry slabs, and appurtenances.

14.4 RETAINING WALLS

Retaining walls or curbs near the perimeter of parcels shall be removed unless otherwise indicated in the Contract. The Contractor shall employ hand labor or other suitable tools and equipment necessary to complete the work without damage to adjacent public or private property. Where such retaining walls or curbs are removed, the embankment shall be graded to a slope of not greater than 3:1 horizontal: vertical or as directed by the Engineer. The cost of any tree or brush removal due to the removal and grading out of the retaining wall shall be considered incidental and shall be included in the lump sum bid for demolition.

14.5 FENCES

Fences, guardrails, bumpers, signs, clotheslines, and similar facilities shall be completely removed from the site, except fences on the apparent boundary between a contract parcel and an improved non-contract parcel shall not be removed unless specifically stated in the special provisions. All posts for support shall be pulled out or dug up, so as to be entirely removed.

14.6 PARTIALLY BURIED OBJECTS

All piping, posts, reinforcing bars, anchor bolts, railings and all other partly buried objects protruding from the ground shall be removed. The remaining void shall be filled with soil and compacted in accordance with these specifications.

14.7 VEGETATION

The Contractor shall remove all dead trees, trees identified for removal, stumps, all trees which are not an asset to the property, bushes, vegetation, brush, and weeds, whether standing or fallen, unless specifically stated otherwise by the Engineer. The Contractor shall protect all trees not removed from damage by the demolition operation. In the event that the Contractor damages a tree, it shall be repaired or removed by the Contractor as directed by the Engineer.

14.8 FUEL TANKS

Fuel tanks, above or below ground, shall be carefully removed and disposed of in a safe manner in accordance with the State Fire Marshal's regulations and any other applicable regulations.

14.8.1 Fuel tanks, above or below the ground, or tanks which have been used for storage of gasoline, kerosene, benzene, oils, or similar volatile materials shall be carefully removed and disposed of in a safe manner. The time, place and manner of disposal will be as set forth in the Contract documents.

14.8.2 All other tanks or receptacles shall be pumped out or emptied in a safe manner, and then shall be flushed out immediately with water, carbon dioxide or nitrogen gas until they are gas-free when checked with a “Explosimeter” or another equally efficient instrument, before the work of removal is begun. Checking with the “Explosimeter” shall be done in the presence of the Engineer by competent personnel.

14.9 OUTDOOR TOILETS AND SEPTIC TANKS

Outdoor toilets and septic tanks shall be pumped out by a licensed company. The toilet building or septic tank shall be demolished and removed from the site. The excavation or pit shall be backfilled and compacted in accordance with these specifications. Septic tanks shall be broken up and removed from the site and the excavation filled in accordance with the requirements of the Jurisdiction.

14.10 CISTERNS AND METER PITS

Cisterns and meter pits shall be demolished and removed. The excavations shall be backfilled and compacted in accordance with these specifications.

14.11 WELL PLUGGING AND ABANDONMENT

All wells shall be plugged and abandoned in accordance with all applicable regulations. Required records shall be filed upon completion of the well abandonment.

15. EXPLOSIVE DEMOLITION

Use of explosives is not permitted.

16. DISPOSAL OF DEMOLITION DEBRIS AND SOLID WASTE

16.1 GENERAL

Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill. All materials, rubbish, and trash shall be removed from the demolition area leaving the demolition area free of debris. Any cost incurred by the Owner in cleaning up such materials and debris left behind shall be deducted from funds due the Contractor under this contract.

16.1.1 Do not allow demolished materials to accumulate on-site.

16.1.2 Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

16.1.3 All debris and solid waste shall be delivered by the Contractor to an approved disposal facility licensed in accordance with state and/or local regulations, laws, and zoning.

The Contractor shall be responsible to pay all fees for waste disposal. The Contractor shall submit to the Owner/Architect copies of all disposal tickets for each structure demolished, where available, which identify the specific address of the origin of the debris associated with each ticket. The cost of all disposal fees shall be considered incidental to the demolition.

16.2 TIRES

The Contractor shall visit the site to determine the number of tires that have been abandoned on site. If any additional tires are found on site prior to commencing demolition activity, the Contractor shall immediately notify the Engineer of the quantity of additional tires found on site so a change order can be prepared for additional removal.

16.3 PCB AND MERCURY REMOVAL AND DISPOSAL

The handling of any fluorescent lighting fixtures and ballasts containing PCB or mercury is subject to all applicable state and federal mandates and regulations. The Contractor shall be responsible for the removal and disposal of the material in accordance with applicable regulations. All costs associated with said removal and disposal shall be considered incidental and shall be included in the lump sum bid for demolition.

16.4 STRUCTURES WITH TRANSITE SIDING

Privately owned properties containing transite siding shall be listed in the Contract Documents, and all demolition debris from these structures shall be disposed of at an approved landfill. The Contractor shall be responsible for notifying said landfill prior to commencing demolition on these structures to allow for authorization to dispose of material at the landfill. The Contractor shall assume responsibility for the landfill fees for disposing of the demolition debris. All structures with transite siding shall be thoroughly sprayed with water during the execution of the demolition to contain airborne particles. All debris shall be thoroughly wetted prior to transporting to the landfill.

16.5 BURNING
Do not burn demolished materials.

17. REPAIRS

Promptly repair damage to adjacent construction caused by building demolition operations.

17.1 Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

17.2 Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

18. SITE RESTORATION – BACKFILL, GRADING, AND CLEAN UP

18.1 BELOW-GRADE AREAS

18.1.1 Completely fill below-grade areas and voids resulting from building demolition operations with compacted satisfactory soil materials.

18.1.2 Once basement and footings have been removed, fill the basement hole in with maximum 6" lifts to 95% compaction. Fill can be sand or clay. Clay, if used, should have liquid limit less than 50. If clay is within 4 feet of the bottom of the floor slab or 18 inches below the bottom of the pavement, it should be placed at least 2% wet of optimum. Also, would need at least 18 inches of LVC below the floor slab if clay is used.

18.1.3 Tests should be performed on lifts during fill placement, by a licensed and certified geotechnical engineer, to verify compliance.

18.2 BACKFILL

When site conditions permit, as determined by the geotechnical engineer, on-site soil shall be used as backfill material. The top 9 to 12 inches of topsoil shall be stripped and stockpiled on site for use as final topsoil and grading material. If adequate topsoil, as defined by Section 2010, is not available on site, the Contractor shall bring in enough topsoil from off-site to place a minimum 8 inch cover on the entire site. Excess excavation materials shall be removed from the site. Topsoil material shall not be permitted as deep fill material.
Any borrow or fill material shall be approved by the geotechnical engineer before and during the placing of the material. All depressions on the property shall be filled, compacted, and graded to a uniform slope with adequate drainage.

18.3 COMPACTION

All excavations shall be backfilled with acceptable material and compacted as follows:

18.3.1 Standard Demolition Compaction: If required in the Contract Documents, all excavations associated with the demolition shall be backfilled and compacted in accordance with applicable regulations.

18.3.2 Special Demolition Compaction: If required, all excavations associated with the demolition shall be backfilled and compacted according to the requirements of applicable regulations. The Contractor shall notify the geotechnical engineer 24 hours in advance of placing any backfill or original backfill material so a soil sample can be obtained. It shall be the responsibility of the Contractor, to run a density test during and after the placement of the backfill material.

18.4 ADDITIONAL FILL MATERIAL

All additional fill material shall be of equal quality to the soil adjacent to the excavation. Soil clumps shall be pea-sized or smaller, and free of rubble or organic matter. Additional fill material shall be acceptable fill material that meets the requirements of applicable regulations. The Contractor shall provide for a minimum depth of 8 inches of topsoil over the excavated area. There shall be no payment for additional fill material, which shall be considered a component of to the demolition bid price.

18.6 GRADING

The site shall be graded to conform to all surrounding areas and shall be finished to have a uniform surface that shall not permit ponding of water. The Contractor shall grade and shape the site to drain, complete fine grading.

On demolition sites where seeding will be delayed because of the allowable seeding dates, the Contractor shall complete fine grading and shaping of the site to leave the site in a neat and presentable condition subject to the approval of the Owner/Architect.

18.7 SEEDING

Unless seeding is not possible due to allowable seeding dates, the Contractor shall provide materials and labor for seeding. Seeding shall include preparation of the seedbed, furnishing and installing seed, fertilizer and mulch, maintenance, and guarantee for completed seeded areas, as specified in the Contract Documents.

18.8 ADJACENT AREAS

Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

18.9 FINAL CLEANING UP

Before acceptance of the demolition work, the Contractor shall remove all unused material and rubbish from the site of the work, remedy any objectionable conditions the Contractor may have created on private property, and leave the right-of-way in a neat and presentable condition. The Contractor shall not make agreements that allow salvaged or unused material to remain on private property. All ground occupied by the Contractor in connection with the work shall be restored.

End of Section 02221

SECTION 02820

ASBESTOS REMOVAL – NONFRIABLE ASBESTOS

PART 1 – GENERAL

1. RELATED DOCUMENTS

1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 Refer to the ASBESTOS REPORT at the end of this Section.

2. DESCRIPTION OF WORK

2.1 The Contractor and shall furnish all labor, materials, equipment, tools, and any other resources necessary to complete any required asbestos remediation work in accordance with regulatory requirements and project contract documents, using the best available technology and industry standard methods and procedures.

2.1.1 All work shall be performed in strict accordance with all current Federal, State and Local regulations, including requirements from the U.S. Environmental Protection Agency (EPA), Occupational Health and Safety (OSHA), the 2019 National Emission Standards for Hazardous Air Pollutants for Asbestos (NESHAP), the Kansas Department of Health (KDHE), and any other applicable state and local regulations.

2.1.2 The Contractor shall assume full responsibility and liability for compliance with all applicable laws, rules, and regulations pertaining to asbestos handling and disposal, work practices, protection of workers, authorized visitors to the site, persons, and property adjacent to the work. Where conflicts occur between the project documents and applicable codes, rules, and regulations, the more stringent requirement shall apply.

2.2 The Contractor shall be aware of all conditions of the project, and is responsible for verifying quantities and locations of asbestos removal work to be performed. Failure to do so shall not relieve the Contractor of its obligation to furnish all labor, equipment, and materials necessary to perform the asbestos removal work.

3. DEFINITIONS

Nonfriable asbestos-containing building material means surfacing asbestos-containing material, or miscellaneous asbestos-containing material that is found in or on the interior structural members or other parts of a building and that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. (40 CFR part 763.83).

4. ASBESTOS ABATEMENT PROCEDURES

The asbestos abatement contractor shall:

4.1 Provide inspections of the work, practices, and procedures, including temporary protection requirements, for compliance with all regulations and project specifications including provisions required by variances, the Workplace Safety Plan and Asbestos Work Permit.

4.2 If asbestos-containing materials are found to be nonfriable, then removal of those materials shall be performed in accordance with standards and regulations for nonfriable asbestos-containing materials.

4.3 If asbestos-containing materials are found to be friable, then removal of those materials shall be performed in accordance with standards and regulations for friable asbestos-containing materials.

4.4 Provide verification that all workers used in the performance of the project are certified by the appropriate regulatory agency, if applicable.

4.5 Monitor, verify, and document all waste load-out operations.

4.6 VINYL ASBESTOS FLOOR TILES

4.6.1 Vinyl asbestos floor tiles must be removed, handled, and disposed of in a manner that keeps the material intact to be considered nonfriable. The method of removal cannot crumble, pulverize, or reduce the material to dust. Sanding, sawing, grinding, chipping or the use of power tools is not allowed.

4.6.2 The following procedure will be utilized for removing nonfriable asbestos vinyl floor tiles:

A. Use six-mil plastic sheeting to isolate doorways and cover floor registers, vents and other surfaces to prevent contamination from asbestos fibers.

B. Tiles shall be kept adequately wet during removal. Wetting minimizes asbestos fibers from being released. The tiles must remain adequately wet during removal, packaging, and until waste disposal occurs.

C. Use a wide putty knife or flat floor scraper and gently pry up the tiles. Keep the tiles in whole pieces, do not break material on purpose, do not step on material, and do not drop material. Once the material has been removed, do not break it to fit it into the required packaging.

4.6.3 If the material cannot be removed without breaking, the Contractor must follow the requirements for abatement of friable asbestos-containing materials.

If the vinyl asbestos tile becomes damaged or is badly weathered, it is considered friable and may release asbestos fibers. If the vinyl asbestos floor tiles become friable, stop work immediately, adequately wet the material and cover with six-mil plastic or equivalent and promptly contact the geotechnical engineer. Friable asbestos materials must be removed by a licensed asbestos contractor using certified workers.

4.6.3 Disposal of Vinyl Asbestos Tile

Vinyl asbestos tile waste must be kept adequately wet and packaged in leak-tight containers such as two, six-mil plastic bags with the asbestos hazard label, or within similar leak-tight packaging.

A. Disposal shall be registered at an approved landfill, as required by Federal and State regulations.

5. INSPECTIONS

The following minimum inspections shall be conducted by the asbestos abatement contractor. Additional inspections shall be conducted as required by project conditions.

5.1 Pre-Construction Inspection: The purpose of this inspection is to verify the existing conditions of the work areas and to document these conditions.

5.2 Pre-Commencement Inspection: The purpose of this inspection is to verify the integrity of each containment system prior to disturbance of any asbestos containing material. This inspection shall take place only after the work area is fully prepped for removal.

5.3 Work Inspections: The purpose of this inspection is to monitor the work practices and procedures employed on the project and to monitor the continued integrity of the containment system. Inspections within the removal areas shall be conducted by the contractor's representative during all preparation, removal, and cleaning activities at least twice every work shift. Additional inspections shall be conducted as warranted.

5.4 Pre-Encapsulation Inspection: The Contractor will verify and ensure that: The removal of asbestos-containing materials from all surfaces in the work area prior to encapsulation has been completed.

5.5 Visual Clearance Inspection: The Contractor will verify and ensure that: All materials in the scope of work have been properly removed; no visible asbestos debris/residue remains; no pools of liquid or condensation remains; and all required cleanings are complete. At the completion of asbestos removal work, the Contractor shall inspect the entire work area for asbestos. If any suspect asbestos dust or debris is found, repeat final cleaning operation, until the visual inspection is satisfactory. This inspection shall be conducted before final air clearance testing, if air clearance testing will be performed.

5.6 Post-Clearance Inspection: The Contractor will verify and ensure that: The complete removal of asbestos-containing materials has been accomplished, including debris, from the work area after satisfactory final clearance sampling and removal of all isolation and critical barriers and equipment from the work area.

6. REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE)

The Contractor shall provide personnel utilized during the project with Personal Protective Equipment (PPE), as required, as follows:

6.1 RESPIRATORY EQUIPMENT

Contractors, subcontractors, employees, and workers shall wear the appropriate level of respiratory protection for removal of nonfriable asbestos-containing materials, in compliance with NIOSH, OSHA, and the Department of Health and Human Services.

6.1.1 Respirators must be equipped with HEPA filtered cartridges (color coded purple) or an N-100, P-100 or R-100 NIOSH rating. These cartridges are specific for filtering out asbestos fibers.

6.1.2 The Contractor shall provide and make available a sufficient quantity of respirator filters so that filter changes can be made as necessary during the work day. Filters shall be changed regularly to comply with OSHA.

6.1.3 Precautions must be taken to ensure that respirators fit properly. Facial hair, especially beards and goatees, will not allow the respirator to fit properly.

6.1.4 A storage area for respirators shall be provided by the Contractor in the clean room side of the personnel decontamination enclosure where they will be kept in a clean environment.

6.1.5 Any person found in the work area not wearing the required respiratory protection shall be removed from the project site.

6.2 EYEWEAR

Contractors, subcontractors, employees, and workers shall wear safety goggles or glasses protect for eye protection from any falling or flying debris. Eyewear should be used when removing materials from overhead and when cleaning with wire brushes. Eyewear is also recommended during floor tile removal.

6.2 DISPOSABLE COVERALLS

Contractors, subcontractors, employees, and workers shall wear disposable when removing asbestos-containing material. Several pairs of disposable coveralls with built in feet should be available during the removal work and clean up. It is recommended that two suits are worn at the same time. Every time an individual leaves the work area, once asbestos-containing material has been removed, the exterior suit should be removed inside the work area and be disposed of in a designated asbestos waste bag. This will help to ensure all asbestos debris remains in the work area. An optional method is to use old clothes and dispose of them as waste at the end of the project.

6.3 DISPOSABLE GLOVES

Durable, disposable plastic or rubber or cloth gloves shall be worn by each person in the work area. When work is completed, gloves should be disposed of in a designated asbestos waste bag. Cloth gloves may be worn inside the plastic or rubber for comfort, but shall not be used alone. Make sleeves secure at the wrists and make foot coverings secure at the ankles by the use of tape, or provide disposable coverings with elastic wrists or tops.

6.4 RUBBER BOOTS

Laceless, pull on rubber boots without fasteners are recommended. Rubber boots can be washed off at the end of the project and used again.

6.5 Authorized visitors shall be provided with suitable protective clothing, respiratory equipment, eye protection, and footwear whenever they enter the work area. Any visitor not wearing the required respiratory protection shall be removed from the project site.

7. MATERIALS

7.1 Store all materials at the job site in a suitable and designated area. Store materials subject to deterioration or damage away from wet or damp surfaces and under cover. Protect materials from unintended contamination and theft. Storage areas shall be kept clean and organized. Remove damaged or deteriorated materials from the job site. Materials contaminated with asbestos shall be disposed of as asbestos debris.

7.2 All materials shall be delivered to the job site in the original packages, containers, or bundles bearing the name of the manufacturer, the brand name and product technical description, with Safety Data Sheets (SDS's) as applicable.

7.3 No damaged or deteriorating materials shall be used. If material becomes contaminated the material shall be decontaminated or disposed of as asbestos-containing waste material. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.

7.4 TOOLS

The Contractor shall provide tools and equipment that are suitable for asbestos-related activities, and in good working order.

8.4.1 Decontamination: All equipment and tools should be washed prior to leaving the work area. Inspect all surfaces of your safety equipment to ensure no contamination is leaving the work area. Any equipment that cannot be cleaned must be disposed of as asbestos contaminated waste.

8. SIGNS AND LABELS

Contractor shall provide prominently posted warning signs at all entryways into the work area, and barrier tapes at all approaches to asbestos work areas. Signs shall be located at such distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide asbestos danger labels affixed to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Asbestos danger labels shall be of sufficient size to be clearly legible. Persons that do not have responsibilities directly related to the project shall not be allowed to occupy or pass through any asbestos removal work area.

9. PROTECTION OF SURFACES AND OBJECTS

The following requirements are in addition to, not in lieu of, indicated work area sealing requirements. Cover the following surfaces and objects as follows:

9.1 Protect all surfaces beneath all removal activity. Remove moveable objects from the work area, and cover fixed objects with impermeable drop cloths or plastic sheeting with edges securely sealed with tape.

9.2 Provide clean, fresh air to mechanical equipment, where required to maintain proper performance of equipment.

9.3 Fully pre-clean all covered surfaces with amended water and a HEPA vacuum.

9.4 Cover walls with not less than 2 layers of 6-mil polyethylene sheeting. Construct free-standing enclosure walls of not less than 6-mil polyethylene sheeting, with supports spaced not more than 3 feet on center. Cover floors with not less than 2 layers of 6-mil polyethylene sheeting. Avoid seams where possible. If seams are necessary, overlap not less than 12 inches and tape joints. Extend sheeting 12 inches up the side walls leaving no seams at the wall and floor joint. Immediately repair punctures and leaks, and clean up seepage.

10. CLEARANCE PROCEDURES

See paragraph 5.5. At the completion of asbestos removal work, the Contractor shall inspect the entire work area for asbestos. If any suspect asbestos dust or debris is found, repeat final cleaning operation, until the visual inspection is satisfactory.

11. WASTE DISPOSAL

All waste will be transported and disposed of in compliance with Kansas Department of Transportation (KDOT) requirements and all applicable Federal, State, and local regulations. Disposal must occur at an acceptable landfill accompanied by a waste manifest.

End of Section 02820

SECTION 02821

ASBESTOS REMOVAL – FRIABLE ASBESTOS

PART 1 – GENERAL

1. GENERAL REQUIREMENTS

1.1 All work shall be performed in accordance with this specification, contract documents, and in strict accordance with all current Federal, State and Local regulations, including requirements from the U.S. Environmental Protection Agency (EPA), Occupational Health and Safety (OSHA) (including but not limited to OSHA 1910.1001 and OSHA 1926.1101.), the 2019 National Emission Standards for Hazardous Air Pollutants (NESHAP) for Asbestos (including but not limited to 40 CFR Part 61, Subpart M), the Kansas Department of Health (KDHE), and in accordance with any and all applicable asbestos regulations, statutes, rules, etc. by any governing authority, and in compliance with all regulatory requirements.

1.2 The Contractor shall assume full responsibility and liability for compliance with all applicable laws, rules, and regulations pertaining to asbestos handling and disposal, work practices, protection of workers, authorized visitors to the site, persons, and property adjacent to the work. Where conflicts occur between the project documents and applicable codes, rules, and regulations, the more stringent requirement shall apply.

1.3 The Contractor shall be aware of all conditions of the project, and is responsible for verifying quantities and locations of asbestos removal work to be performed. Failure to do so shall not relieve the Contractor of its obligation to furnish all labor, equipment, and materials necessary to perform the asbestos removal work.

2. ABBREVIATIONS / DEFINITIONS

2.1 ACE: Asbestos Contaminated Element

2.2 ACM: Asbestos Containing Material

2.3 ACWM: Asbestos Contaminated Waste Material

2.4 AIHA: American Industrial Hygiene Association – The association for scientists and professionals committed to preserving and ensuring occupational and environmental health and safety in the workplace and community. Web: www.aiha.org

2.5 CAS: Compressed Air Systems

2.6 CFR: The Code of Federal Regulations. Web: www.ecfr.gov

2.7 CPIH: Competent Person / Industrial Hygienist

2.8 DOP: Dioctylphthalate particles

2.9 EDF: Equipment Decontamination Facilities

2.10 EPA: Environmental Protection Agency. Web: www.epa.gov

2.11 Friable Asbestos Containing Material:
Material that contains more than one percent (1%) asbestos by weight that can be crumbled, pulverized, or reduced to powder by hand pressure.

2.12 HEPA: High Efficiency Particulate Air

2.13 NEMA: An ANSI-accredited Standards Developing Organization. Web: www.nema.org.

2.14 NESHAP: National Emission Standards for Hazardous Air Pollutants.
Web: www.https://www.epa.gov/compliance/national-emission-standards-hazardous-air-pollutants-compliance-monitoring

2.15 NIOSH: The National Institute for Occupational Safety and Health.
Web: www. https://www.cdc.gov/niosh/index.htm

2.16 OSHA: Occupation Safety and Health Administration. Web: www.osha.gov

2.17 OFR: Office of the Federal Register. Web: www.ecfr.gov

2.18 PACM: OSHA acronym for "Presumed Asbestos Containing Material"

2.19 PAPR: Powered Air-Purifying Respirator

2.20 PAT Rounds: Proficiency Analytical Testing (PAT) Program, managed by AIHA

2.21 PCM: Phase Contrast Microscopy. Phase contrast microscopy uses a light microscope for the purpose of counting fibers.

2.22 PDF: Personnel Decontamination Facilities

2.23 SAR: Supplied Air Respirator

2.24 SCBA: Self Contained Breathing Apparatus

2.25 SOP: Standard Operating Procedures

2.26 TEM: Transmission Electron Microscopy. TEM is used for the purpose of fiber counting and has the analytical capacity of specifically identifying asbestos fibers.

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

3. RELATED DOCUMENTS

3.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

3.2 Refer to the ASBESTOS REPORT at the end of this Section.

3.3 CODES AND REGULATIONS

3.3.1 Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all current 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.

3.3.2 The contractor shall assume full responsibility and liability for compliance with all applicable federal, state, and local regulations pertaining to notifications, work practices, hauling and disposal of ACM and/or PACM, and/or ACE, and/or ACS 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 for workers as required by the applicable federal, state, and local regulations. The contractor shall hold the owner harmless for failure to comply with any applicable work, hauling, disposal, safety, health and/or other actions on the part of himself, his employees, or his subcontractors. The contractor incurs all costs including all sampling/analytical costs for sampling to comply with OSHA regulations. In addition, the abatement contractor shall determine the applicability of any process patent that may be used and be responsible for paying any fees, royalties, or licenses that may be required for the use of patented processes.

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

A. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA):
(1) Code of Federal Regulations Title 29 Part 1910 Section 1001
(2) Code of Federal Regulations Title 29 Part 1926 Section 1101
(3) Code of Federal Regulations Title 29 Part 1910 Section 134

B. U.S. Environmental Protection Agency (EPA):
(1) Code of Federal Regulations Title 40 Part 763 Subpart E
(2) Code of Federal Regulations Title 40 Part 61 Subpart A
(3) Code of Federal Regulations Title 40 Part 61 Subpart M

C. U.S. Department of Transportation
Code of Federal Regulations (applicable parts of) 49 CFR Parts 171-180

D. All state requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials shall apply.

E. All local requirements shall apply.

F. EPA guidance documents that discuss asbestos abatement work or hauling and disposal of asbestos waste materials are available on EPAs Web site www.epa.gov and are incorporated herein by reference.
(1) Guidance for Controlling Asbestos-Containing materials in Buildings (Purple Book) – EPA 560/5-85-024

(2) Asbestos Waste Management Guidance - EPA 530-SW-85-007

(3) A Guide to Respiratory Protection for the Asbestos Abatement Industry - EPA-560-OPTS-86-001.

4. SCOPE OF WORK

4.1 Materials identified as asbestos containing materials shall be removed. The Abatement Contractor (Contractor) shall furnish all tools, equipment, labor and materials for the proper removal and disposal of asbestos containing materials in accordance with all applicable asbestos regulations (See "General Requirements", this specification), using the best available technology and industry standard methods and procedures.

4.2 The abatement contractor shall include documentation that proves they are a State of Kansas licensed Asbestos Abatement Contractor registered with the Kansas Department of Health and Environment. The abatement contractor shall ensure that all personnel who perform work on this project will have appropriate asbestos certifications.

4.3 EXTENT OF WORK

Abatement of asbestos containing materials in accordance with the specific scope of work. Refer to Asbestos Report.

4.3.1 The contractor will be responsible for the following:

A. Abatement activities, including the removal, clean-up, and disposal of ACM waste, recordkeeping, security, Occupational Safety and Health Administration (OSHA) Contractor personal air monitoring, and inspections.

Removal and disposal of all asbestos-containing materials, asbestos-containing waste, and proper generation and distribution of waste shipment records and waste disposal manifest(s).

B. Contractor shall provide a Work Plan for approval prior to beginning the work. Plan shall detail the contractors proposed plan of action to accomplish the guidelines of this specification, scope of work and laws and regulations.

C. Pre-abatement activities including pre-abatement meeting(s), inspection(s), notifications, permits, submittal approvals, regulated area preparations, preliminary procedures, and emergency procedures arrangements for asbestos abatement work.

D. Ensure that all persons engaged in the asbestos removal project hold valid asbestos worker certificates.

E. Maintain all project records for as many years as required by local, state and/or federal regulatory requirements.

F. Provide any build-back re-insulation if required.

G. Perform personnel monitoring as required by OSHA.

H. Cleaning and decontamination activities including final visual inspection, and certification of completion.

5. SITE CONDITIONS

The quantities (if indicated) and location of ACM, PACM, and ACE indicated in the Asbestos Report and/or on the drawings and the extent of work indicated, is only the best estimate. It is the Contractor's responsibility to notify the federal, state, and/or local regulators of the quantities to be removed. It is also the contractor's responsibility to notify the Owner of any newly discovered ACM and/or PACM within 24 hours of such discovery.

6. PRELIMINARY PROCEDURES

The contractor shall be responsible for preparing the entire work area for asbestos removal. This includes preliminary work area preparation, work area isolation and worker decontamination systems. Workers shall be fully protected with respirators and protective clothing during the preparation phase of the work area and immediately prior to the first disturbance of asbestos containing or asbestos contaminated materials and until clean-up is completed. Preliminary work area preparations are subject to the following procedures.

6.1 Items that or considered fixed or stationary, located in the abatement area, should be pre-cleaned using HEPA vacuuming and/or wet cleaning methods. Once cleaned, the items must be covered and sealed with at least two layers of six mil poly sheeting to protect and keep surfaces free from dust or water damage during the removal of ACM.

6.2 The abatement contractor shall set up work areas to contain and remove asbestos containing materials. The abatement contractor will ensure the work areas are properly contained utilizing negative pressure enclosures prior to any required demolition and removal of asbestos containing materials.

7. AUTHORITY TO STOP ASBESTOS REMOVAL

If the Owner presents a verbal and/or written "Stop Asbestos Removal" order, the Contractor will immediately stop all asbestos removal and initiate fiber reduction activities. The Contractor will not resume asbestos removal until authorized verbally and/or in writing by the owner. A "Stop Asbestos Removal" order will be issued at any time the owner determines abatement conditions are not within specification requirements. Stoppage will continue until conditions have been corrected. Standby time and cost required for corrective action is at the contractor's expense. The occurrence of the following events shall be reported in writing to the owner and shall require the contractor to automatically stop asbestos removal and initiate fiber reduction activities:

7.1 Excessive airborne fibers outside the containment area (0.1 f/cc or greater).

7.2 Any breach in containment barriers.

7.3 Loss of negative air pressure.

7.4 Serious injury on the job site.

7.5 Fire and/or safety emergency.

7.6 Respiratory system failure.

7.7 Power failure.

7.8 Excessive airborne fibers inside the containment (0.5 f/cc or greater when wet methods are employed.

8. CONTRACTOR LOGBOOK

The contractor shall maintain a logbook at the job site, which shall be available at all times to the owner. Complete copies shall be submitted to the owner within fifteen (15) days of project completion. The logbook serves as a ready reference for this project and may be used in legal proceedings, thus, care must be taken to assure its completeness and its documentation accuracy. The logbook shall contain the following information at a minimum and shall be maintained in a three (3) ring binder. Any deviation shall be confirmed in writing by the owner.

8.1 Date stamped copies of all federal, state and local project notifications and filings including waivers and copies of applicable regulations.

8.2 Copies of certification by a physician of each employee's capability to wear a respirator per the OSHA Respirator Standards (29 CFR 1910.134).

8.3 Copies of asbestos project notifications to the local fire, police and rescue services including telephone numbers.

8.4 Name and home telephone numbers of key personnel including the on the job supervisor's immediate supervisor, the buildings owner's representative, security personnel, and appropriate federal, state and local regulatory personnel.

8.5 Contractor's standard operating procedures and any deviations therefrom.

8.6 Project technical specification including plans and drawings and any deviations therefrom.

8.7 Sign-in and sign-out forms noting who entered the work area, their affiliation with the project, time and purpose of entry and departure time.

8.8 Records of pertinent daily events, checks of containment and equipment and all accidents and injuries occurring on the job.

8.9 Personal air sampling forms with results for final report inclusion.

8.10 EPA generator identification number, copy of waste disposal manifest, and name of disposal site used. If a subcontractor is used, all information required above must still be provided. All the above documentation including trip tickets and land fill invoices shall be provided to owner after project completion.

8.11 Reports of inspection by federal, state, and local authorities.

8.12 Detailed reports of any problems and incidents that arose, the date and time, and how they were handled. These reports must be signed by supervisory personnel.

8.13 Emergency procedures.

8.14 Copy of the project schedule and any deviations therefrom.

8.15 Organization of personnel at the job site including delineation of supervisory responsibility.

8.16 The contractor shall submit a copy of the valid state business entity license for an asbestos abatement contractor. All certificates for proposed workers, foremen, and supervisors must be presented. Any changes or substitutions must be approved by the owner.

8.17 In the event that glove bag removal techniques are used, the contractor shall submit a copy of the glove bag instructions.

9. STANDARD OPERATING PROCEDURES

The asbestos contractor shall have established Standard Operating Procedures (SOP) in printed form, on site, consisting of simplified diagrams, sketches and pictures that establish and explain clearly the ways and procedures to be followed during all phases of work. The SOP must be modified as necessary to address any specific requirements of the project and shall be submitted for review and approval prior to the start of any abatement work. The minimum topics and areas to be covered by the SOP are:

9.1 Minimum Personnel Qualifications
9.2 Contingency Plans
9.3 Security and Safety in the Workplace (including a worksite safety plan - see 1.15)
9.4 Respiratory Protection Systems and Training
9.5 Worker Protection, Medical Examinations, Record Keeping, Protective Clothing, Entering and Exiting Procedures
9.6 Work Area Limitations
9.7 Decontamination Facilities, Personal Contamination Facilities (PDF) and Equipment Contamination Facilities (EDF)
9.8 Negative Pressure Systems
9.9 Containment Barriers and Coverings of Work Area including mini-containments
9.10 Monitoring, Inspection, and Testing
9.11 Removal of ACM and/or PACM and/or ACE
9.12 Removal of ACS
9.13 Glove bag applications and their instructions
9.14 Enclosure of ACM and/or PACM
9.15 Encapsulation of ACM and/or PACM
9.16 Project close-out documents production and distribution
9.17 Project Decontamination
9.18 Work Area Clearance
9.19 Disposal of ACM and/or PACM and/or ACE Waste
9.20 Fire Protection, Emergency Evacuation, and Exit Plan

10. CONTRACTOR PRE-WORK SUBMITTAL

Submit before start of work the following:

10.1 Copies of current abatement contractor required licenses and insurance.

10.2 Product data for surfactants and/or removal encapsulants, lock back encapsulants or other hazardous materials, instruction for use and recommendations of manufacturer, and data substantiating compliance with requirements including MSDS's.

10.3 Certification from manufacturer that the wetting product will wet ACM as required by National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61, Subpart M.

10.4 The contractor shall prove they have an established asbestos abatement business for three (3) years. The abatement contractor shall have conducted within the last three (3) years, three (3) asbestos abatement projects of which are comparable in complexity and dollar value with this project. The abatement contractor shall not have been cited or has not been a defending party of any legal action for violation of asbestos regulations during the last three (3) years. Abatement contractor shall carry liability insurance for asbestos abatement work and be licensed in whatever states it is doing business in and has on file such records. Abatement contractor shall have an adequate number of qualified personnel available for this project and have an established written SOP for training, medical surveillance, entry and exit procedures, respiratory protection, safety, emergency and monitoring. Abatement contractor shall have available equipment, materials and supplies in adequate quantity, capacity and number to perform the work of this project.

11. WORK SITE SAFETY PLAN

Taking all emergency precautions and following all emergency procedures is the responsibility of the contractor and shall at minimum have a work site safety plan.

12. CODES AND REGULATIONS

12.1 NESHAP NOTIFICATION

The contractor shall send written notification prior to beginning work on abatement of asbestos containing materials as required by NESHAP, 40 CFR 61, Subpart M to the regional asbestos NESHAP contact or their designee.

12.1.1 Include, at a minimum, the following information in the notification sent to the NESHAP contact:

A. Name and address of owner's facility.
B. Description of the facility being demolished or renovated, including size, age, and prior use of facility.
C. Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area on other facility components.
D. Location of the facility being demolished or renovated.
E. Scheduled starting and completion dates of demolition or renovation.
F. Nature of planned demolition or renovation and method(s) to be used.
G. Procedures to be used to comply with the requirements of NESHAP 40 CFR 61 Subpart M.
H. Name and location of the waste disposal site where the friable asbestos waste material will be deposited.

12.1.2 If applicable, send written notification within required time-frames as required by state and local regulations prior to beginning removal of asbestos-containing materials.

12.1.3 Copies of NESHAP and other notifications shall be submitted to the owner for the facility's record in the same time-frame notification is given to the EPA, state, and local authorities.

12.1.4 An asbestos waster shipment document is required for transporting asbestos waste to a disposal site.

12.2 Maintain current licenses as required by applicable federal, state, and local jurisdictions for the removal, transporting, disposal or other regulated activities related to the work of this contract.

12.3 Maintain two (2) copies of applicable federal, state, and local regulations. Make available one (1) copy of each at the job site where workers will have easy access to the regulations. Keep on file in the contractor's office one (1) copy of each regulation.

13. PROJECT PERSONNEL

13.1 No individual person who has not been fully trained and qualified, as below, shall be employed to speed up completion of the work.

13.1.1 All personnel of the contractor involved with the asbestos abatement work must be trained, tested, and certified prior to any work and shall be familiar with the standard operating procedures of the contractor.

13.1.2 All workers and supervisors shall be thoroughly familiar with all applicable regulations and practices for asbestos abatement work and must possess valid state asbestos licenses.

13.1.3 All workers shall be trained in the use and care of respirators.

13.1.4 All workers shall have successfully completed training courses required for asbestos removal workers as required, recognized, sponsored, and supported by the United States Department of Labor, Occupational Safety and Health Administration, the United States Environmental Protection Agency, and all state and local regulatory agencies. Documentation of the successful completion of applicable courses is required with submittals and close-out report.

13.1.5 All workers shall have state and local certifications whenever state and local regulations require the workers to be certified and shall be available for owner inspection prior to work starting.

13.1.6 Any worker without the above qualifications shall not be allowed in the work area at any time.

13.2 The contractor and assigned personnel for this project shall meet the following minimum requirements:

13.2.1 The CPIH shall have at least three (3) years of experience monitoring and supervising abatement construction and have participated as CPIH in five (5) abatement projects, three (3) of which are of comparable complexity and dollar value with this project. CPIH shall have developed at least one (1) complete written standard operating procedure for abatement and has trained abatement workers for three (3) years. The CPIH shall have specialized training in asbestos abatement management, respiratory protection and training, asbestos waste disposal, abatement, personnel monitoring, inspection and testing and have the appropriate certifications and licenses where required by state and/or local government.

13.2.2 Abatement workers shall have specialized training in abatement, construction, OSHA and EPA regulations, the standard operating procedure of the company, asbestos hazards and respiratory protection and have the appropriate medical records and any other OSHA training requirements. The abatement workers shall have licenses where required by state and/or local government.

14. REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE)

The Contractor shall provide personnel utilized during the project with Personal Protective Equipment (PPE), as follows:

14.1 PROTECTIVE CLOTHING

The contractor shall provide all safety clothing and equipment required by OSHA for personal protection for all workers. These items might include, but are not limited to, steel-toed boots, hard hats, eye protection, hearing protection, gloves, etc. for all workers. The contractor is required to ensure all equipment is well-maintained and meets OSHA requirements for personal protection. Provide all persons entering the work area with disposable full body coveralls, disposable head covers and eighteen inch (18") boot type covers. Ensure that disposable clothing integrity will not be compromised by employees. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the disposable gloves but shall not be used alone. Use tape to secure sleeves at the wrists and to secure foot coverings at the ankle. Wear to layers of protective clothing to aid in decontamination.

14.2 EYEWEAR

Contractors, subcontractors, employees, and workers shall wear safety goggles or glasses protect for eye protection from any falling or flying debris. Eyewear should be used when removing materials from overhead and when cleaning with wire brushes. Eyewear is also recommended during floor tile removal.

14.3 RESPIRATORY PROTECTION

14.3.1 The contractor shall provide respiratory protection in accordance with this specification, the OSHA regulation 29 CFR 1910.1001, 29 CFR 1910.134 and 29 CFR, 1926.1101, EPA regulations 40 CFR 763.120 and 121, ANSI standards Z88.2, CGA Pamphlet G-7 and specification G-7.1, the NIOSH standards, and comply with all current state and local requirements. In case of conflict, the most stringent requirements are applicable for this project.

A. Respiratory Protection Program (RPP)

It is the responsibility of the contractor to develop, implement and maintain a respiratory protection program.

B. Written Statement of Company Policy

The contractor shall provide a written statement of intent to provide a safe and healthful work place for workers. This written statement shall include assignment of individual responsibility, accountability, enforcement procedures and authority for required activities.

14.3.2 Respirators for Abatement Operations
Where a person is or could reasonably be expected to be exposed during abatement operations to airborne asbestos, one of the following minimum levels of respiratory protection is required:
• NIOSH Approved
• Respiratory Protection
• Maximum Use
• Concentration
• Half-Mask Air Purifying with HEPA Filters 1 f/cc
• Full-Face piece Air Purifying with HEPA Filters 5 f/cc
• Powered Air Purifying (PAPR)
• Full Face piece with HEPA Filters 10 f/cc
• Full Face piece - Supplied Air
• Continuous Flow with HEPA Filters 10 f/cc
• Full Face piece - Supplied Air operated in
• Pressure Demand mode 100 f/cc

14.3.3 Type "C" Compressed Air (OSHA 1910.134(d)(1) and CAS Z275.3.09) shall comply with the following requirements:

A. The compressor shall be sized according to the respirator manufacturer's recommendation for supply capacity.

B. The receiver shall be of the capacity and a size for emergency escape using decontamination procedures for all workers.

C. The compressor shall be equipped with a visual and audible compressor failure alarm so that all workers may be alerted of compressor failure.

D. The compressor shall be equipped with a high temperature alarm with shut off capability.

E. The compressor shall be equipped with a carbon monoxide monitor. This monitor should be equipped with an alarm that can be heard or seen by all workers using the system.

F. The system shall include an in-line air purifying absorbent bed and filters.

G. The compressor shall provide Grade D or better quality breathing air.

14.3.4 The contractor shall demonstrate, prior to its use, the air system including receiver capacity, etc., to the owner for approval.

14.3.5 A belt must be provided for the air hose. The hose length shall not exceed 300 feet.

14.3.6 The contractor shall have available for authorized visitors, two (2) extra or spare air hoses and connectors to allow entry into the work area at any time without removing a worker from the work area.

14.3.7 Combination pressure-demand SAR/SCBA or pressure-demand SCBA shall be equipped with full face pieces. Full face pieces shall be worn with either a bonnet-type disposable head cover/hood or with a full head cover/hood which is part of a fully enclosed protective garment. When bonnet type head cover/hoods are used with full face pieces, the respirators shall always be donned with the head straps located under the hood. This allows removal of the head covering prior to showering without disturbing the respirator (which is worn into the shower).

14.3.8 Reserve air shall be provided per OSHA regulations 29 CFR 1910.134 as part of any supplied air system used with the above respirators.

14.3.9 Contractor shall provide formal instructions in the proper use of respirators to workers and supervisors. Supervisors shall have a more comprehensive training in addition to the basic worker training.

14.3.10 Respirator Fit Test

The appropriate fit test shall be performed for each respirator worn by an employee, worker, prior to the person's entry into the asbestos work area. No one shall enter the asbestos area, until the appropriate fit test has been passed, and there is no sign of leakage of air from the face piece.

A. Perform the appropriate fit test, either a quantitative fit test (QNFT) or qualitative fit test (QLFT) in accordance with OSHA regulations 29 CFR 1910.134 to determine satisfactory fit with any respirator which creates a negative pressure in the face piece, such as negative-pressure air-purifying respirators or a SAR fitted with an emergency HEPA filter back-up.

B. Routine donning of respirators with tight fitting face piece requires negative and positive pressure test to ensure adequate sealing. This shall be performed by the wearer prior to each entry into the work area.

C. For SCBA, SAR/SCBA, and SAR perform a negative pressure test. Block the end of the breathing tube with the palm of the hand(s) and for negative pressure air-purifying respirators close off the cartridge(s) or filter(s) by covering with the palms of the hands. The wearer shall inhale gently and hold breath for at least ten (10) seconds. The face piece shall collapse slightly without inward leakage of air into the face piece.

D. For SCBA, SAR/SCBA, and SAR perform a positive pressure test for negative pressure air-purifying respirators. The exhalation valve is closed off and wearer exhales gently for at least ten (10) seconds. A slightly positive pressure shall be built up inside the face piece without any outward leakage of air from the face piece.

14.3.11 Regular Program Evaluation and Special Problems of Use

The contractor shall periodically assess the effectiveness of the respiratory protection program during all phases of asbestos abatement operations. Contractor shall monitor supervisor and worker compliance with requirements of their program. In addition to general assessment of the overall respiratory protection program, specific evaluations of the respirator cleaning, inspection, maintenance, repair, storage, and use procedures shall be frequently conducted to ensure that the desired results of these operations are consistently achieved.

14.3.12 Proper Respirator Use Procedures

The Contractor shall establish a well-defined procedure for donning and doffing of respirators when entering and exiting the work area through the Personal Decontamination Facilities. Donning and doffing of respirators and work clothes shall be accomplished using the "buddy" system, involving two employees assisting each other to ensure full and satisfactory compliance with the establish procedures. The procedures described in this document for clean room (entry), shower room (entry), equipment room (entry),work area and equipment room (exit), shower room (exit) and clean room (exit) for pressure-demand SAR and pressure-demand SAR/SCBA are made, by reference, part of these specifications.

15. WORKER PROTECTION

15.1 MEDICAL EXAMINATION

An exposure assessment must be performed if workers are exposed to airborne asbestos fibers. Workers shall shower immediately after removal and proper disposal of work cloths. Glove bag workers shall wear full respiratory protection and protective clothing.

The contractor shall provide medical examination for all workers and any other employees entering the work area per OSHA 29 CFR 1926.1101 regardless of exposure level. In addition, the contractor's physician shall perform an evaluation of each individual's ability to work in heat stress environments.

15.2 The contractor shall ensure that workers do not eat, drink, smoke, chew gum or tobacco, or in any way break the protection of the respiratory protection system in the work area.

16. CONTAINMENT BARRIERS AND COVERINGS OF WORK AREAS

16.1 All project areas shall be vacated by the occupants prior to work area preparation and until full abatement has been achieved.

16.2 The project area shall be isolated by cordoning it off with barrier tape and shall be accessible through only one entrance/exit.

16.3 Caution signs shall be posted at any location and approaches to a location wherever airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted that permit a person to read the sign and take the necessary protective measures to avoid exposure.

16.4 PRE-ABATEMENT SETTLING PERIOD

Upon completion of the construction of all plastic barriers and decontamination systems, but prior to actual abatement activities, adequate time shall be allowed to ensure that barriers settle in-place and remain intact.

16.5 INSPECTION OF BARRIERS

All plastic barriers including decontamination facilities shall be inspected at least twice a day by the abatement supervisor with observations entered in the daily log. Repair any damage immediately.

16.6 TESTING OF BARRIERS

With the HEPA Units in operation, the abatement supervisor shall use smoke tubes to test work area barriers and enclosures. This shall be done prior to beginning abatement

and once a day thereafter until clearance has been obtained. Record findings in the daily log.

16.7 REGULATED AREAS

The contractor shall seal off the perimeter of the work area to completely isolate abatement areas and to contain all airborne asbestos contamination created by abatement work. Cover all surfaces of the work area to protect them from cross contamination, to facilitate more efficient clean-up, and to protect the finishes from the asbestos abatement work. Should the area beyond the seal off limits become contaminated as a consequence of the work, the contractor shall clean those areas in accordance with procedures described in this section at no additional cost to the owner.

16.8 PREPARATION PRIOR TO SEALING-OFF

Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to erection of temporary plastic sheeting enclosure. Remove all uncontaminated removable furniture, equipment, and/or supplies from the work area before commencing work, or completely cover with two layers of polyethylene sheeting at least six (6) millimeter thickness, secured in-place with duct tape. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached. Disable ventilating system or any other system bringing air into or out of the work area. Disable system utilizing positive means that will prevent accidental premature restarting of equipment, i.e., disconnecting wires, removing circuit breakers, lockable switch, etc. The environment of the work area shall be completely isolated from all other air flows in the building.

16.9 CONTROL ACCESS TO WORK AREA

16.9.1 The contractor shall ensure access to the work area is only through the Personal Decontamination Facilities. All other means of access shall be closed off and sealed and warning signs displayed on the clean side of the sealed access. Where the work area is immediately adjacent to or within view of occupied areas, provide a visual barrier of opaque or black polyethylene sheeting at least six (6) millimeter in thickness so that the work procedures are not visible to building occupants. Where the area adjacent to the work area is accessible to the public, construct a solid barrier on the public side with nominal two inch (2") x four inch (4") wood or metal studs on sixteen inch (16") centers, securely anchored to prevent movement, covered with minimum one half inch (1/2") plywood.

16.9.2 Provide warning signs at each visual and physical barrier per OSHA requirements.

16.10 CRITICAL BARRIERS

The contractor shall completely separate the work area from other portions of the building and the outside with sheet plastic critical barriers of at least one (1) layer of six (6) millimeter in thickness and sealed with duct tape. Individually, seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the work area with duct tape alone or with polyethylene sheeting of at least one (1) layer of six (6) millimeter in thickness, secured in-place with duct tape. Maintain seal until all work including project decontamination is completed. Take care in sealing off lighting fixtures to avoid melting or burning of plastic sheeting. Provide sheet plastic barriers at least six (6) millimeter 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 adhesive or additional means as necessary and with owner approval.

16.11 PRIMARY BARRIERS

The contractor shall clean all contaminated furniture, equipment and supplies when present with a HEPA vacuum cleaner or wet cleaning, as specified in this section, prior to being moved or covered. Clean all surfaces in work area with HEPA vacuum or by wet wiping prior to the installation of any sheet plastic.

A. The entire work area is enclosed with 2 of six (6) millimeter polyethylene sheeting. Cover floor of the work area with two (2) individual layers of clear polyethylene sheeting, each at least six (6) millimeters in thickness, turned up walls at least 12 inches (12"). 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 loosened or breached. Use both spray adhesive and duct tape on all seams in floor covering. Locate seams top layer at right angles to seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer. Cover carpets and wood floors with additional polyethylene as necessary. 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. Cover all walls in work area including critical barrier sheet plastic barriers with 2 layers of polyethylene sheeting, at least six (6) millimeters in thickness, mechanically supported and sealed with duct tape or spray adhesive in the same manner as "critical barrier" sheet plastic barriers. Tape all joints including those joining with the floor covering. It is the contractors responsibility to protect all surfaces, such as wood floors and carpets, from damage.

B. Elevator: Cover walls, floor and ceiling of elevator with two (2) layers of six (6) millimeter polyethylene. Arrange entry to work area so that the elevator door is in a positively pressurized space outside the clean room of the decontamination unit. At completion of work the elevator shall be cleaned as per this specification.

C. Stairs and Ramps: Where stairs or ramps are covered with plastic, provide three quarter inch (3/4") exterior grade plywood treads securely held in place over plastic. Do not cover stairs or ramps with unsecured sheet plastic. Do not cover rungs or rails with any type of protective materials.

16.12 EXTENSION OF WORK AREA

If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then, where possible, add the affected area to the work area. Enclose it as required by this section and decontaminate it as described elsewhere in this specification. If contaminated area cannot be added to the work area, decontamination measures shall start immediately after contamination is discovered and all abatement work will stop in the work area. Decontamination procedures will continue until exposure returns to background levels.

16.13 SECONDARY BARRIERS

If required, provide an additional layer of plastic as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work. Replace as necessary, but once a shift at a minimum.

17. DECONTAMINATION FACILITIES

Provide each work area with separate containment. Ensure that there is only one means of ingress and egress from the work area and that all equipment, bagged waste material and other material exit the work area only through the ingress/egress.

17.1 GENERAL REQUIREMENTS MINI-CONTAINMENT

All persons entering and exiting the work area shall follow the entry and exit procedures required by the applicable regulations and this specification. Construct walls and ceilings of each containment airtight with at least six (6) millimeter opaque polyethylene sheeting and attach to existing building components or to a temporary frame-work. Use a minimum of two (2) layers of reinforced six (6) millimeter polyethylene to cover floor. Construct doors from overlapping polyethylene sheets so that they overlap adjacent surfaces. Weigh sheets at bottom so that they quickly close after release. Put arrows on sheets showing direction of overlap and travel. If the building is partially occupied, construct solid barriers on the public side to protect sheeting. Construct rigid enclosures as indicated on drawings or when necessary.

17.2 PERSONNEL DECONTAMINATION FACILITIES (PDF)

Small Asbestos Projects (Mini-containment):

Enclosure requirements. A personal decontamination enclosure system shall consist of, at least, a shower room and a clean room separated from each other by an airlock and from the work area and other areas by curtained doors. All other provisions for large asbestos projects shall apply. Equipment storage, personal gross decontamination, and removal of clothing shall occur in the work area just prior to entering the shower.

NOTE: The full personal decontamination enclosure specified for large asbestos projects is recommended for mini-containments.

17.3 EQUIPMENT AND WASTE DECONTAMINATION FACILITIES (EDF)

In small asbestos projects where only one egress from the work area exists, the shower room may be used as a waste wash-room. In this instance, the clean room shall not be used for waste storage, but shall be used for waste transfers to carts, which shall be immediately removed from the clean room.

18. NEGATIVE PRESSURE FILTRATION

18.1 GENERAL NEGATIVE PRESSURE REQUIREMENTS

The contractor shall provide enough HEPA filtered negative air machines (HEPA Units) to completely exchange the work area air four (4) times per hour. The contractor shall demonstrate the number of HEPA Units needed per work area for four (4) room air changes by calculating the volume flow rate (cfm) delivered by each HEPA Unit under a two inch (2") pressure drop across filters. Provide at least one standby HEPA Unit in the event of a HEPA Unit failure or emergency such as contamination in surrounding non-work area. All large and small asbestos projects shall employ HEPA Unit equipment ventilation.

18.2 HEPA UNITS

18.2.1 The cabinet shall be constructed of steel or other durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than thirty (30) inches to fit through standard-size doors. The cabinet shall be factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance. Access to and replacement of all filters shall be from intake end. The unit shall be mounted on casters or wheels.

18.2.2 The rate capacity of the fan is the usable air-moving capacity under actual operating conditions. Use centrifugal-type fan.

18.2.3 The final filter shall be a HEPA type. The filter media (fold into closely pleated panels) must be completely sealed on all edges with a structurally rigid frame.

A. Locate a continuous rubber gasket between the filter and the filter housing to form a tight seal.

B. Each filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than ninety-nine point ninety-seven (99.97) percent when challenged with three (3.0) μm dioctylphthalate (DOP) particles. Each filter shall bear an appropriate label to indicate ability to perform under specified conditions.

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

18.2.4 Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. The first-stage pre-filter shall be a low-efficiency type for particles ten (10) μm and larger. The second-stage pre-filter shall have a medium efficiency effective for particles down to five (5) μm. Pre-filters shall be installed either on or in the intake grid of the unit and held in place with special housings or clamps.
Electrical components shall be approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each HEPA Unit shall be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet shall be grounded.

18.3 PRESSURE DIFFERENTIAL

The contractor shall provide a fully operational negative air system within the work area continuously maintaining a pressure differential across work area enclosures of 0.02 inches of water. Demonstrate to the owner the pressure differential by use of a pressure differential meter or a manometer before disturbance of any ACM.

18.4 AUXILIARY GENERATOR

When required, the contractor shall provide an auxiliary gasoline or diesel powered generator located outside of the building in a location protected from the weather. Arrange so that if a power failure occurs the generator automatically starts and supplies power to a minimum of fifty percent (50%) of the HEPA Units in operation.

18.5 SUPPLEMENTAL MAKE-UP AIR INLETS

The contractor shall create, where required for proper air flow through the work area, make-up air inlets to allow air from outside the building into the work area. Locate auxiliary makeup air inlets as far as possible from the HEPA Unit (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 negative pressure system should shut down for any reason. Use spray adhesive on the flap and around the opening so that flap seals if it closes.

18.6 TESTING THE SYSTEM

The contractor shall test the negative pressure system before any ACM and/or PACM is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the exhaust machines(s) installed, start the HEPA Unit one at a time. Demonstrate operation and testing of negative pressure system. HEPA Units connected in series shall be considered a single HEPA Unit for the test. A minimum of one HEPA Unit, having a capacity at least equal to the primary unit, shall be used as back-up and for primary unit filter changes.

18.7 DEMONSTRATION OF NEGATIVE AIR SYSTEM OPERATION

The contractor shall demonstrate the operation of the negative pressure system to include, but not limited to, the following:

18.7.1 Plastic barriers and sheeting should move lightly in toward work area.

18.7.2 Curtain of decontamination units move lightly in toward work area.

19. USE OF SYSTEM DURING ABATEMENT OPERATIONS

19.1 Start HEPA Units before beginning work and before any ACM and/or PACM is disturbed. After abatement work has begun, run HEPA Units continuously to maintain a constant negative pressure until decontamination of the work area is complete. Do not turn off HEPA Units at the end of the work shift or when abatement operations temporarily stop.

19.2 Do not shut down negative air system during abatement operations procedures, unless authorized by the owner in writing.

19.3 Start abatement work at a location farthest from the HEPA Units and proceed toward them. If an electric power failure occurs, immediately stop all removal work and do not resume until power is restored and all HEPA Units are operating again.

19.4 At completion of abatement work, allow exhaust machines to run as specified under this specification or as required by regulation to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean air. HEPA Units may be required to run after decontamination if dry or only partially wetted asbestos material was encountered during any abatement work.

20. OPENINGS IN ENCLOSURE

Openings made in the enclosure system to accommodate these HEPA Units shall be made air-tight with tape and/or caulking. Where possible, only the intake and the filter access panel shall remain within the work area to permit filter changing, while minimizing HEPA Unit contamination and the likelihood of contamination of non-working areas.

20.1 INSTALLATION AND CARE

HEPA Units shall be exhausted to the outside of the building or structure and away from occupied areas. Proper installation, air monitoring and daily inspections shall be conducted to insure that the ducts do not release asbestos into uncontaminated areas. Fans, ducts and joints shall comply with the following:

20.1.1 Ducts of at least equivalent shape and dimensions as that of the HEPA Unit exhaust shall be used to exhaust to the outside of the building or structure.

20.1.2 All fans, ducts and joints shall be sealed, braced and supported to maintain an air-tight system.

20.2 EXHAUST LOCATION

At no time shall the HEPA Unit exhaust within 50 feet of air intake or adversely affect the air intake of the building or structure or other buildings or structures.

21. WORKER DECONTAMINATION

It is the contractor's responsibility to maintain the work area and decontamination systems. All plasticizing and sealing of work area, building of worker and equipment decontamination enclosure systems, preparation of the negative air system, and all equipment required for the project shall be completed, tested and properly stored.

21.1 CONTRACTOR'S WRITTEN DECONTAMINATION AND WORK PROCEDURES

The Personal Decontamination Facilities shall be provided outside the work area and attached where persons will enter or exit the work area. The contractor shall supply written decontamination and work procedures, to be posted in the clean room of the Personal Decontamination Facilities.

21.2 ENTERING WORK AREA

All personnel entering the work area shall adhere to the following procedures:

21.2.1 Personnel shall remove all clothes and put on protective disposable coveralls.

21.2.2 Personnel shall put on clean respirators.

21.2.3 Personnel then may enter the work area.

21.2.4 No clothing other than disposable coveralls shall be worn into the work area and subsequently be removed from the work area (i.e., all clothing worn into the work area shall be treated as asbestos waste.)

21.3 DECONTAMINATION PROCEDURES

Personal decontamination procedures shall be followed by all personnel (workers and visitors) each time they leave the work area. Refer to "Decontamination Procedures," this Section.

21.4 ACTIVITIES NOT PERMITTED

Workers and visitors shall not eat, drink, smoke or chew gum or tobacco in the clean room. The clean room shall not be used for equipment or tool storage or as an office.

21.5 FIRST DISTURBANCES
Workers shall be fully protected with respirators and protective clothing during the preparation phase of the work area and immediately prior to the first disturbance of asbestos-containing or asbestos contaminated materials and until clean-up is completed.

22. SIGNS AND LABELS

Contractor shall provide prominently posted warning signs at all entryways into the work area, and barrier tapes at all approaches to asbestos work areas. Signs shall be located at such distance that personnel may read the sign and take the necessary protective steps required before entering the area. Provide asbestos danger labels affixed to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Asbestos danger labels shall be of sufficient size to be clearly legible. Persons that do not have responsibilities directly related to the project shall not be allowed to occupy or pass through any asbestos removal work area. Signs shall be posted at all entrances to the work area including all sealed entrances.

22.1 The entrance of the clean room should have a lockable door that has a sign in English, Spanish, and any/all other appropriate languages that may be required that reads:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY

23. PROTECTION OF SURFACES AND OBJECTS

The following requirements are in addition to, not in lieu of, indicated work area sealing requirements. Cover the following surfaces and objects as follows:

23.1 Protect all surfaces beneath all removal activity. Remove moveable objects from the work area, and cover fixed objects with impermeable drop cloths or plastic sheeting with edges securely sealed with tape.

23.2 Provide clean, fresh air to mechanical equipment, where required to maintain proper performance of equipment.

23.3 Fully pre-clean all covered surfaces with amended water and a HEPA vacuum.

24. DECONTAMINATION PROCEDURES

The contractor shall ensure that all workers adhere to the following personal decontamination procedures whenever they leave the work area:

24.1 Before exiting the work area, remove gross contamination from clothing using a HEPA vacuum.

24.2 Remove outer layer of disposable coveralls, turning clothing inside out when removed. Remove gross contamination from inner layer of clothing using a HEPA vacuum. Place both layers in a disposal bag.

24.3 Carefully wash face piece 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 the 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 the battery.

25. MATERIALS

It is the contractor's responsibility to furnish all materials and equipment to complete the asbestos removal project and all materials used for this project are subject to the following general requirements.

25.1 All materials delivered to the job site must be in the original packages, containers or bundles bearing the name of the manufacturer, the brand name and product technical description, with Safety Data Sheets (SDS's), as applicable. Replacement insulation/materials must be equivalent to those removed and in conformance with all acceptable codes, including installation.

25.2 The contractor shall store all materials at the job site, in a suitable and designated area. Materials shall be stored in such a way to prevent unintended contamination and theft. Materials that are subject to deterioration or damage shall be stored away from wet or damp surfaces and under sufficient cover, to prevent damage or contamination. Storage areas shall be kept clean and organized. Damaged or deteriorated materials shall be removed from the job site. No damaged or deteriorating materials shall be used. If material becomes contaminated the material shall be decontaminated or disposed of as asbestos-containing waste material, in accordance with all applicable regulations and procedures herein. The cost to decontaminate and dispose of this material shall be at the expense of the Contractor.

25.3 The Contractor shall provide plastic sheeting of 6 and 12 millimeter thickness in widths large enough to minimize the frequency of joints.

25.4 The tape used for sealing of adjacent sheets of plastic sheeting and for attachment of plastic sheets to finished and unfinished surfaces of dissimilar material must be capable of adhering under dry and wet conditions including use of amended water.

25.5 The surfactant (wetting agent) to be used consists of 50% polyoxyethylene ether and 50% polyoxyethylene/polyglycol ester or the equivalent. This shall be mixed with water to provide a concentration of one (1) ounce surfactant to five (5) gallons of water or to the manufacturer's recommendation. The Contractor shall have available a sufficient quantity of equipment to mix and spray the wetting agent.

25.6 The contractor shall supply a sufficient number of appropriately labeled six (6) millimeter clear plastic bags or other approved containers suitable to receive and retain any asbestos containing or asbestos contaminated materials until disposal at an approved site. These bags and/or containers must be both air and water tight.

25.6.1 These containers shall be labeled at a minimum in accordance with OSHA Regulation 1910.1001 and 1926.1101, and DOT Regulation 49 CFR Parts 171 & 172, Hazardous Substance: Final Rule.

25.6.2 Labeled asbestos bags shall not be turned inside-out for the disposal of non-asbestos containing materials. Any material placed in a labeled asbestos bag whether insideout or not shall be treated as ACWM.

25.7 The contractor shall supply all warning signs and labels as required by OSHA regulation 29 CFR 1910.1001 and 1926.1101.

25.8 The contractor shall provide (if required) an encapsulant of the bridging and/or penetrating type.

25.8.1 The encapsulant selected should be able to withstand most impact or abrasion and protect the encapsulated surface.

25.8.2 The encapsulant selected for use by the contractor shall be one of the types demonstrating probable effective performance in tests conducted by an independent testing laboratory.

25.8.3 The encapsulant shall have high flame retarding characteristics and a low toxic fume and smoke emission rating. Ratings shall be as follows:
ASTM 84 Flame Spread Class A

25.8.4 The encapsulant selected should not be noxious or toxic to application workers or to subsequent users of the building.

25.8.5 The encapsulant selected should have acceptable weathering and aging characteristics.

25.8.6 The encapsulant selected should be capable of adhering to the surfaces exposed during this removal project.

25.1 The contractor shall provide all other materials such as lumber, nails, hardware, etc., which may be required to construct and dismantle the decontamination area and the barriers that isolate the work area.

26. TOOLS AND EQUIPMENT

26.1 The Contractor shall provide tools and equipment that are suitable for asbestos-related activities, that are in good working order. The contractor shall provide suitable tools for the stripping, removal, encapsulation and/or disposal activities including but not limited to: hand-held scrapers, nylon brushes, sponges, rounded edge shovels, brooms, carts, etc.

26.2 The contractor shall provide scaffolding as required to accomplish the specified work and shall meet all applicable safety regulations concerning the use of scaffolding and any open structural members on scaffolding shall be sealed to prevent incursion of asbestos.

26.3 The contractor shall also have on-site industrial dry/wet vacuums equipped with High Efficiency Particulate Air (HEPA) filtration approved for asbestos removal. Power tools used to drill, cut into, or otherwise disturb asbestos material shall be equipped with HEPA filtered local exhaust ventilation. These HEPA filters must be capable of 99.97% efficiency at 0.3 microns or larger.

26.4 The contractor shall have available HEPA Units capable of filtering asbestos fibers of 0.3 microns or larger at 99.97% efficiency.

The contractor shall take whatever action necessary, including the installation of additional circuit breaker panel boards, if required, to ensure adequate circuits of sufficient amperage capable of powering HEPA Units uninterrupted for the duration of the project.

26.5 HEPA Units shall be maintained as per manufacturer's requirements. The contractor shall produce evidence of proper maintenance and periodic testing if requested by owner.

26.6 The contractor shall have equipment of sufficient size and capacity to remove contaminated gravel/soil when required.

26.7 DECONTAMINATION
All equipment and tools shall be washed prior to leaving the work area. All surfaces of safety equipment shall be inspected to ensure no contamination is leaving the work area. Any equipment that cannot be cleaned must be disposed of as asbestos contaminated waste.

27. REMOVAL OF ACM/PACM

27.1 COMPETENT PERSON SUPERVISION
All Class I and II Work (as defined by OSHA), including installation and operation shall be supervised by a competent person as defined in 29 CFR 1926.1101.

27.1 WETTING MATERIALS

27.1.1 Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACM and/or PACM and retardation of fiber release during disturbance of the material.

27.1.2 Provide a penetrating type encapsulant designed specifically for removal of ACM and/or PACM. Use a product which results in encapsulating of the ACM and/or PACM and retardation of fiber release during disturbance of the material.

27.1.3 During removal procedures involving amosite/crocidolite, special care must be taken to ensure proper wetting.

27.2 WET REMOVAL OF ACM AND/OR PACM

27.2.1 Thoroughly wet ACM and/or PACM to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Use a fine spray (mist) of amended water or penetrating encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping and/or pooling. Allow time for water or penetrating 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 penetrating encapsulant is used, apply in strict accordance with manufacturer's written instructions. Perforate outer covering of any insulation which has been painted and/or jacketed in order to allow penetration of amended water or penetrating encapsulant, or where necessary, carefully strip away while simultaneously spraying amended water or penetrating encapsulant on the installation to minimize dispersal of asbestos fibers into the air.

27.2.2 If ACM and/or PACM does not wet well with amended water because it is coated or thick, remove as follows:

A. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.

B. Remove saturated ACM and/or PACM 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 wash down station adjacent to material decontamination facility.

C. Spray drywall with a fine mist of amended water or penetrating encapsulant. Allow time for materials to saturate to substrate. Do not over saturate causing excess dripping. Cut out and remove pieces as directed. Remove materials in manageable quantities and control the descent to staging or floor below. If over ten feet (10'), use drop chute to contain material through descent. Remove residue remaining on scratch coat after scraping using stiff nylon bristled hand brush. If a penetrating encapsulant is used remove residue completely before encapsulant dries. Keep residue wet until completely removed.

D. Spray fireproofing or architectural finish on wire lath with a fine mist of amended water or penetrating encapsulant. Allow time 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 penetrating encapsulant from above. If entire ceiling system is to be removed, cut wire lath into two feet by six feet (2' x 6') sections and cut hanger wires. Roll up complete with ACM and/or PACM and hand place in disposal bag. Do not drop on floor. After removal of lath and ACM and/or PACM, remove any over spray on decking and structure above using stiff nylon bristled brush. Depending on hardness of over-spray, scrapers may be necessary to remove over-spray.

E. Remove outer layer of pipe wrap while spraying amended water in order to saturate ACM and/or PACM. Spray with a fine mist of amended water or penetrating encapsulate. Allow time to saturate material to substrate. Cut bands holding performed pipe insulation, silt 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 or scraper/wire brush. In locations where pipe fitting insulation is removed from pipe insulated with non-asbestos containing material, remove approximately 6 inches (6") of the non-asbestos containing material adjacent to ACM removed.

27.3 LIMITED REMOVAL OF ACM AND/OR PACM WITH GLOVE BAG

27.3.1 If any conflict between the below supplied information and OSHA 1926.1101 arises, OSHA 1926.1101 shall apply. In using the glove bag method for removing pipe insulation, decontamination procedures may not be required. However, disposable

clothing, respirators, critical barriers, and negative air may be required. Discard the clothing in accordance with applicable regulations. Glove bags will be utilized in work areas specified in Section 2 of the bid document.

A. The negative air requirement may be satisfied in either of two ways:
   (1) Create negative air in the glove bag, relative to the room; or
   (2) Create negative air in a "mini containment" relative to outside the "mini containment."

B. The former can be accomplished using a powered HEPA vacuum source. Caution: If too much vacuum is achieved, the glove bag may collapse.

27.3.2 Procedures are as follows:

A. Prior to any glove bag ACM and/or PACM removal:
   (1) Turn off heating, ventilation and air conditioning systems in work area. Provide temporary heating and cooling as required. Critical barrier all openings and cover entrance with a polyethylene flap.
   (2) Polyethylene sheets (10' x 10' - 6 millimeter minimum) shall be used as drop cloths on the floor or platform under glove bag removal.
   (3) Purchase or fabricate bags of 6 millimeter (minimum) thick clear plastic material. Have present in the work area all materials and equipment for installation of glove bags and the removal and disposal of asbestos.
   (4) Have for each individual project both an emergency bag repair and an emergency "spill" plan for the entire work area.

B. Install the glove bag according to the manufacturer's recommendations. At completion of the installation, conduct a smoke test to confirm that there are no leaks at any of the seals.

C. Cut the material covering along the top seam and begin wetting the material. Cut covering all around the section to be removed. Remove ACM and/or PACM in small sections. Lower the material gradually into the glove bag. Do not permit material to drop. Dropping material is more likely to cause loss of glove bag seal.

D. Remove approximately 6 inches (6") of the non-asbestos containing material adjacent to ACM removed. Wash pipe clean.

E. Provide HEPA filter vacuum. Run vacuum during cutting, removal and to clean area after removal.

F. When ACM covered piping and fittings are to demolished and removed from the work area, wet the section of piping and pipe fitting(s) to be removed, wrap with 6 millimeter polyethylene sheets, cut out the entire pipe section including pipe fitting(s) in such a way to minimize damage, seal the cut ends and place in labeled container for transporting to approved disposal site.

G. Where piping and/or fitting(s) are to remain, remove the asbestos from the pipe fitting and pipe section with a 6 millimeter plastic glove bag, as follows:
   (1) Spray asbestos with amended water to enhance penetration.

(2) Remove saturated asbestos material in small sections with tools in bag by teams, on staging platforms, if needed.

(3) Spray exposed pipe with amended water and clean with a nylon brush to ensure that no insulation materials remain on the pipe or joint.

(4) Spray the inside of the glove bag with water to ensure that there are no airborne asbestos fibers.

(5) Following removal of the ACM and/or PACM insulation, ensure that all visible material is inside the glove bag.

(6) Spray all tools in the glove bag with amended water while it is still attached.

(7) Pull one of the gloves inside out to the outside of the glove bag and place cleaned tools in the glove.

(8) Twist and tie off the glove in two places to facilitate keeping both the tools and the glove bag sealed as the glove is cut between the ties to remove the glove.

(9) Immerse the glove holding the tools in water. Remove the tools from the immersed glove and re-clean the tools.

(10) Evacuate the glove bag with a portable HEPA vacuum and while the bag is collapsed, squeeze bag below tool pouch, and twist bag. Seal bag with tape or locking ties, separating the waste from the removal area.

(11) Vacuum the inside of the top of the glove bag and unsealed portion of the glove bag below. Keep HEPA vacuum connected until the glove bag is removed.

a. Cut the glove bag along the top and sides, then remove from the pipe. Wet pipe and wash the removal area thoroughly. Dispose of glove bag, material and disposable equipment at an approved disposal site.

(12) Packed and sealed containers with the required labeling shall be delivered, by the contractor, to an approved disposal site. Labels and all necessary signs shall be in accordance with EPA and OSHA regulations.

27.3.3 FINAL CLEARANCE AND REMOVAL

A. Encapsulate surfaces formerly covered with ACM and/or PACM using a colored encapsulant that will be readily visible when dry.

B. Following this encapsulation, the immediate area around the removal location, including all poly sheets, shall be wet wiped with amended water and HEPA vacuumed.

C. Critical barriers at a given work area may only be removed after air-clearance is achieved in the work area as determined by either PCM or TEM air clearance methods. Utilize the appropriate, required clearance methods for each work area.

D. In the event that air clearance fails, re-cleaning is required using HEPA vacuuming and wet wipe cleaning the work area and re-taking air clearance sampling. These steps must be repeated alternately until the air clearance is achieved. Only then can critical barriers be removed.

27.3.4 PERSONNEL DECONTAMINATION UNIT

The following describes use of dry decontamination procedures typically used in glove bag operations.

A. Require all persons, without exception, to pass through this decontamination sequence for exiting from the work area for any purpose.

B. Workers enter the work area wearing disposable coveralls and respirator.

C. One worker or supervisor shall use the brush attachment on the HEPA vacuum to vacuum another worker or supervisor who will then reciprocate in kind.

D. While still wearing respiratory protection, each worker or supervisor shall remove their coverall suit, turning it inside out while removing it. Roll up the suit, pack it in the hood and place the suit in a disposal bag. Then HEPA vacuum one another a second time.

E. After each worker or supervisor has disposed of their coverall suit, HEPA evacuate the air from the disposal bag and twist the bag shut forming a neck. Triple wrap the bag with duct tape. Bend the neck back into itself (goose neck it) and seal the bag with a triple wrap of duct tape.

F. If using PAPR, shut down by first capping inlets to filter cartridges. Then turn off the blower unit. Thoroughly wash the blower unit and hoses. Carefully wash the battery pack with a wet rag. Be extremely cautious to avoid getting water in the battery pack, as that would cause the pack to short out and would destroy the battery. Wash the respirator facepiece inside and out. At the completion of these steps, thoroughly wash face and hands with soap and water.

27.4 "LOCK-BACK" ENCAPSULANT

27.4.1 Lock-back encapsulant is an integral part of ACM and/or PACM removal. At the conclusion of ACM and/or PACM removal and before removal of the primary barriers all surfaces shall be encapsulated with a bridging type encapsulant. When dry, lock-back encapsulant shall be of such color that it can be easily seen.

27.4.2 Deliver encapsulant to the job site in original, new and unopened packages and containers bearing the manufacturer's name and label, thinning instructions and application instructions. A copy of the OSHA material safety data sheet (MSDS) for the encapsulant is required to accompany the encapsulant.

27.4.3 Before beginning work read the encapsulant MSDS and 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 encapsulants are in use.

27.4.4 Apply two (2) coats of encapsulant to the exposed surfaces after all ACM and/or PACM has been removed. Apply in strict accordance with the manufacturer's printed instructions for use of the encapsulant.

27.4.5 Apply encapsulant by hand wiping methods. Apply the first coat encapsulant while the material is still damp from the asbestos removal procedures.

27.4.6 Seal edges of ACM and/or PACM exposed by removal at inaccessible ports 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 encapsulant.

28. INSPECTIONS

28.1 The contractor shall perform throughout abatement work monitoring, inspection and testing inside the work area in accordance with OSHA requirements and this specification. The CPIH shall periodically inspect and oversee the performance of the contractor's workers. The CPIH shall continuously inspect and monitor conditions inside the work area to ensure compliance with this specification. In addition, the CPIH shall personally manage air sample collection, analysis and evaluation for personnel samples to satisfy OSHA requirements.

28.1.1 The demolition contractor will employ an independent industrial hygienist to perform various consulting services on behalf of the owner. The independent industrial hygienist will perform monitoring, inspection, testing, and other support services to ensure that the abatement work proceeds in accordance with this specification and that the abated areas have been successfully decontaminated. The work of the independent industrial hygienist will in no way relieve the abatement contractor from their responsibility to perform their work in accordance with contract documents, to perform continuous inspection, monitoring and testing for the safety of their employees, and to perform other such services as specified in this specification. The cost of the independent industrial hygienist and his services will be the responsibility of the demolition contractor.

28.1.2 If fibers counted by the independent industrial hygienist during abatement work <u>outside</u> the work area utilizing NIOSH 7400 air monitoring methods exceed the specified respective limits (i.e. permissible exposure limit), then the Contractor shall stop work. The Asbestos Contractor may request confirmation of above results by analysis of samples with TEM. Request must be in writing and submitted to the owner. Cost for the TEM confirmation of results will be borne by the contractor for both the collection and analysis of samples, and for the time delay that may result, for this confirmation.

28.2 <u>MONITORING, INSPECTION AND TESTING BY ABATEMENT CONTRACTOR</u>

28.2.1 The CPIH ("Competent Person Industrial Hygienist", the independent industrial hygienist) is responsible for managing all personnel monitoring, inspecting and

testing required by this specification, the OSHA regulation 29 CFR 1926.1101, and for continuous monitoring of all sub-systems and procedures affecting the safety of the Contractor's employees. Safety of the Contractor's employees and providing safe conditions inside and outside the work area shall be the primary concern of the CPIH.

28.2.2 The analytical laboratory that will be used by the contractor to analyze the personal air samples shall participate in the PAT rounds, at a minimum. Keep a daily log of personal samples taken and analyzed and make such log available to the owner. The daily log for personnel shall contain information on the person sampled, the date of sample collection the time of sample start and finish, flow rate, sample volume and fiber/cc. Collect and analyze personal samples for at least twenty percent (20%) of the workers on each shift.

29. PROJECT DECONTAMINATION / CLEARANCE PROCEDURES

29.1 WORK AREA CLEARANCE

Air testing and other requirements which must be met before release of the Contractor and re-occupancy of the work area are specified elsewhere in this specification.

29.2 WORK DESCRIPTION

29.2.1 The work of decontamination includes the decontamination of the air within the Work Area and the decontamination and removal of project equipment and temporary facilities installed prior to abatement work including primary and critical barriers, Decontamination facilities (PDF and EDF) and negative pressure systems.

29.2.2 The work of decontamination includes the cleaning, and decontamination of all surfaces, including, but not limited to: ceilings, walls, floor, etc. of the work area, and all equipment in the work area.

29.3 PRE-DECONTAMINATION CONDITIONS

29.3.1 Before decontamination work starts, all ACM and/or PACM, ACE, secondary barriers (drop cloths) of polyethylene sheeting, and ACWM shall be removed and disposed along with any gross debris generated by the work.

29.3.2 At the start of work for decontamination, the following will be in place:

A. Primary barrier consisting of two (2) layers of polyethylene sheeting on floor and 2 layers on walls.

B. Critical barriers which forms the sole barrier between the work area and other portions of the building or the outside.

C. Critical barrier sheeting over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.

D. Decontamination facilities for personnel and equipment and negative air pressure system are operating.

29.4 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 a HEPA filtered vacuum. Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as ACWM. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces. Replace pre-filters in HEPA unit(s) and dispose of as ACWM. If two (2) wall layers of poly are used, the cleaned, exposed layer of poly shall be removed from walls and floors and disposed of ACWM. If only one layer of wall poly is used, it shall remain in place until after the second cleaning. Use oscillating fans as necessary to assure circulation of air in all parts of the work area during this period.

29.4.1 PRE-CLEARANCE INSPECTION AND TESTING

The owner will perform a thorough and detailed visual inspection at the end of the first cleaning to determine whether there are any signs of visible ACM and/or PACM or dust in the work area. If the visual inspection is satisfactory, the owner will notify the Contractor that the work area is ready for lock-back encapsulation. The owner reserves the right to utilize their own independent industrial hygienist to perform a pre-clearance inspection and air sampling for verification.

29.4.2 LOCK-BACK ENCAPSULATION

With the express permissions of the owner, perform a lock-back encapsulation of all surfaces from which ACM and/or PACM was removed. Execute in accordance with provisions specified elsewhere in this specification. Maintain negative pressure in work area during encapsulation work. Wait 24 hours to allow HEPA Units to clean air of airborne fibers after lock-back encapsulation has been applied.

29.5 SECOND CLEANING

Following the lock-back encapsulation and after the required waiting period, perform a thorough cleaning of all surfaces of the work area in the same manner as the first

cleaning. Immediately following the second cleaning, remove all primary barrier sheeting and Equipment Contamination Facilities, leaving only:

29.5.1 Critical barrier which forms the sole barrier between the work area and other portions of the building or the outside.

29.5.2 Critical barrier sheeting over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.

29.5.3 Decontamination facilities for personnel in operating condition.

29.5.4 Negative pressure system in continuous operation.

29.5.5 Allow 24 hours to elapse after the second cleaning to allow HEPA Units to clean the air of fibers.

29.6 AGGRESSIVE AIR CLEANING

After the required waiting period which follows the second cleaning, an air stream from a high-speed leaf blower or equivalent device shall be swept across all surfaces within the work area for a period of not less than five (5) minutes for each 1,000 square feet of surface area. Allow 24 hours to elapse after the aggressive air cleaning to allow HEPA Units to clean the air of fibers. Final clearance sampling may be conducted in accordance with this specification.

29.7 ADDITIONAL CLEANING AND WAITING PERIODS

29.7.1 If final air clearance fails, carry out a third cleaning of all surfaces in the work area in the same manner as the first cleaning. The cleaning is now being applied to existing room surfaces. Take care to avoid water marks or other damage to surfaces. The HEPA Units shall be in continuous operation and critical barriers and the decontamination units remain in place and operational.

29.7.2 Federal, state, and local regulations may require waiting periods after a failed clearance and before re-sampling of air. The most stringent regulations apply. Use oscillating fans as necessary to assure circulation of air in all parts of work area during the waiting period. Maintain negative pressure system in operation. Where waiting periods are not required by federal, state, or local regulations or by contract, the owner and contractor may agree to shorten waiting periods. However, the contractor is responsible for the results of final air clearance regardless of the amount of waiting period selected.

29.8 FINAL CLEAN-UP

29.8.1 All accumulations of ACWM shall be containerized and removed from the work area.

29.8.2 All decontaminated tools and equipment shall be removed from the work area.

29.8.3 All containerized waste shall be removed from the work area and the holding area.

29.8.4 All surfaces in the work area shall be wet cleaned using rags, mops and sponges. HEPA vacuums shall be used to clean all surfaces after gross clean-up. The work area should be ready for re-occupancy.

29.8.5 Clearance air monitoring shall be satisfactory as specified or as required by regulation.

29.8.6 The critical barriers shall be removed only after satisfactory clearance air monitoring results have been achieved.

29.9 GLOVE BAG OR CONTAINMENT FAILURE

If a glove bag or containment is used and fails or loses its integrity, the following shall be required:

29.9.1 As necessary, isolation barriers shall be constructed.

29.9.2 Area HVAC systems shall be shut down immediately and all openings shall be sealed with a least six (6) millimeter plastic sheeting.

29.9.3 Passageways to uncontaminated areas of the building or structure shall be sealed with a least six (6) millimeter plastic sheeting.

29.9.4 Negative air pressure equipment ventilation shall be installed and utilized.

29.9.5 Clean-up shall be accomplished as follows:

A. All accumulations of asbestos waste material shall be containerized. Metal shovels or HEPA vacuums may be used to pick up or move waste except in the vicinity of any isolation barriers which could be breached. The areas around the isolation barriers shall be cleaned utilizing rubber or plastic dust pans, squeegees or shovels. HEPA vacuums shall be used to clean all surfaces after gross clean up.

B. All surfaces in the work area shall be first wet cleaned using rags, mops and sponges.

C. After the first cleaning, at least twelve (12) hours shall be allowed for asbestos to settle. Thereafter all objects and surfaces in the work area shall be HEPA vacuumed and/or wet cleaned. The isolation barrier shall be breached for entry and exit with minimal frequency and shall be resealed immediately. All windows, doors, HVAC system vents and all other openings shall remain sealed.

D. Removal of contaminated equipment and ACWM and all containerized waste shall be removed from the work area.

E. Clearance air monitoring shall be conducted.

F. The isolation barrier shall be removed only after satisfactory clearance air monitoring results have been achieved.

29.9.6 Federal, state, and local requirements, regarding waiting periods are to be observed by the contractor, unless contractor gets a written "waiver" from the governing regulatory agency.

30. FINAL INSPECTION AND TESTING

30.1 The contractor shall notify the Owner or Owner's representative twenty four (24) hours in advance for the performance of the final visual inspection and testing. The final visual inspection will be performed by the owner or owner's representative at the conclusion of the first cleaning and after the on-site contractor supervisor completes and signs the "Certification of Visual Inspection by Contractor." The abatement contractor conducts a final visual inspection to determine compliance with the specification and the regulations and to make sure all required asbestos has been removed from the work area. The Owner's representative conducts a final inspection to make sure the work area has been cleaned and all required asbestos has been removed from the work area so that final clearance air samples can be collected.

30.2 <u>FINAL INSPECTION</u>

Final inspection will include the entire work area, the Personal Contamination Facilities, Equipment Contamination Facilities, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings. If any debris, residue on surfaces, dust or other matter is detected cleaning shall be repeated. Bulk or dust samples may be collected and

analyzed to confirm visual findings. When the area is visually clean, the lock-back encapsulation and second cleaning will commence after the required waiting periods.

30.3 FINAL TESTING

30.3.1 After a satisfactory final visual inspection by the owner or owner's representative, the owner will undertake the final testing. Air samples may be taken and analyzed in accordance with the procedures for PCM or TEM, whichever is required by federal, state or local regulations or by contract. If release criteria are not met, the contractor shall repeat final cleaning and continue decontamination procedures from that point. Additional inspection and testing will be at the expense of the contractor. If contractor prefers TEM analysis when only PCM is required, the cost of TEM will be borne by contractor.

30.3.2 If release criteria are satisfactory, remove the critical barriers and shut-down and remove the HEPA units as specified. Any small quantities of residue material found upon removal of the plastic sheeting shall be removed with a HEPA vacuum cleaner with localized isolation. If significant quantities, as determined by the owner or owner's representative, are found then the entire area affected shall be decontaminated as specified elsewhere in this specification.

30.4 FINAL TESTING PROCEDURES

30.4.1 Work in an area is complete when the work area is visually clean and airborne fiber levels have been reduced to or below 0.01 f/cc as measured with PCM or 70 structures per square millimeter based on an arithmetic mean concentration of five (5) samples or the fiber concentration within the work area is not statistically larger than the average background count as measured by TEM.

30.4.2 To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the owner may secure samples and analyze them according to the following procedures:

A. "Fibers" referred to in this section shall be either all fibers regardless of composition as counted in the NIOSH 7400 methods, or asbestos fibers of any size as counted using TEM.

B. Final air testing samples will be taken using aggressive sampling techniques when appropriate. Before sampling pumps are started, the exhaust from forced air equipment (leaf blower with at least one (1) horsepower electric motor) will be swept against all walls, ceilings, floors, ledges and other surfaces in the room. This procedures will be continued for 5 minutes per 1,000 square feet of surface area. High velocity fans will be used to continually circulate air during 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 and vents. Fans will be shut down only after air sample collection is complete. The negative air system will continue to operate.

31. AIR SAMPLING

The following general air sampling procedures shall be followed. A supporting document provides details the type of air sampling that will be performed for this project.

31.1 PRE-ABATEMENT AIR SAMPLING

31.1.1 Five (5) area air samples will be collected from random locations throughout contiguous air areas prior to beginning any abatement activities.

31.1.2 The sampling volume for TEM analysis shall be greater than 1,200 liters with a flow rate not to exceed 10 liters per minute.

31.1.3 The sampling volume for PCM analysis shall be greater than 3,850 liters with a flow rate not to exceed 16 liters per minute.

31.2 DAILY AREA PCM AIR SAMPLING DURING REMOVAL

A daily area air sampling scheme shall be developed and should meet the following requirements.

31.2.1 Two (2) area samples from outside and adjacent to the work area.

31.2.2 One (1) area sample from the clean room of the decontamination unit.

31.2.3 One (1) area sample from a maximum distance of five (5) feet from the exhaust of the negative air machine (if inside the building).

31.2.4 One (1) area sample adjacent to the exhaust duct of the negative air machine.

31.2.5 If no exhaust or exhaust tube in building then place additional samples around work area.

31.3 FINAL TEM AIR CLEARANCE SAMPLING

31.3.1 Collect ten (10) TEM air samples - five (5) area samples from inside the work area and five (5) area samples outside the work area.

31.3.2 The sampling volume shall be greater than 1,200 liters with a flow rate not to exceed 10 liters per minute.

31.3.3 The final clearance release criteria for TEM analysis shall be less than 70 structures per square millimeter as determined by the arithmetic mean of five (5) inside samples or less than the outside ambient air as determined by the Z test, whichever is greater.

31.3.4 All final TEM air samples shall be collected using aggressive collection techniques.

31.3.5 All TEM samples will be analyzed using the AHERA method.

31.4 FINAL PCM AIR CLEARANCE SAMPLING

31.4.1 Collect a five (5) air samples from inside the work area.

31.4.2 The sampling volume shall be greater than 3,850 liters with a flow rate not to exceed 16 liters per minute.

31.4.3 The final clearance release criteria will be less than .01 fibers per cc. for five (5) samples in accordance with the NIOSH 7400 Method.

31.5 PCM ANALYTICAL METHOD

31.5.1 PCM air sample shall be analyzed using Phase Contrast Microscopy (PCM) in accordance with the NIOSH 7400 Analytical Method.

31.5.2 All sample pumps shall be fitted with 25 millimeter ester cellulose filter cassettes.

31.6 OSHA PERSONAL AIR SAMPLING

31.6.1 The Contractor is responsible for OSHA personal air monitoring. Personal air samples shall be collected daily for the purpose of determining an eight hour time weighted average (TWA) and an excursion limit by the Contractor during the asbestos removal process.

31.6.2 Personal air samples shall be collected from the breathing zone of a minimum of twenty percent (20%) of the workers performing asbestos removal.

31.6.3 The sampling flow rates shall be between .5 to 2.5 liters per minute.

31.6.4 Results of the OSHA personal air samples must be provided within twenty four (24) hours.

32. WASTE REMOVAL

The contractor is responsible for all waste removal and decontamination systems. All waste will be transported and disposed of in compliance with DOT requirements and all applicable Federal, State, and local regulations. Disposal must occur at an acceptable landfill accompanied by a waste manifest. In addition, the contractor is responsible for keeping the material adequately wet during the entire operation from initial bagging through waste disposal. The asbestos waste containers shall be sealed by the contractor in the work area. The following general procedures apply:

32.1 The contractor shall place caution labels on the containers in accordance with OSHA Regulation 29 CFR 1910.1101. These caution labels shall be clearly visible and shall contain the following Statements:

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

32.2 As required by EPA 40 CFR Part 61 NESHAP Revision; Final Rule, each individual waste container shall be tagged with the name or EPA Identification number of the waste generator and the location at which the waste was generated.

32.3 PROCEDURES

32.3.1 The external surfaces of the containers and equipment shall be thoroughly cleaned of gross contamination in the work area before they are placed into the Equipment Contamination Facilities airlock.

Workers who perform the cleaning in the work area shall not enter the Equipment Contamination Facilities airlock.

32.3.2 The containers shall then be moved in Equipment Contamination Facilities by workers stationed inside the Equipment Contamination Facilities.
The workers shall again wet clean each container thoroughly.

32.3.3 Upon completion of the second wet cleaning process, each container shall be placed into uncontaminated six (6) mil poly plastic sheeting or bags and sealed tight.

32.3.4 The contractor shall then move the containers into the airlock entering the holding area. Ensure that the workers in the holding area have entered from the uncontaminated side of the Equipment Contamination Facilities. The washroom workers shall not enter the holding area or the work area until waste removal is finished for that period.

32.3.5 Containers and equipment shall be removed from the airlock to the holding area by workers dressed in clean personal protective equipment who have entered from the uncontaminated area.

32.3.6 Workers who only move the waste containers from the holding area to uncontaminated areas (trailer, trucks, etc.) may utilize half-face, dual cartridge type respirators and must be outfitted with proper protective clothing.

32.3.7 The cleaned containers of asbestos material and equipment may be placed in watertight carts with doors or tops that shall be closed and secured. The carts shall be wet cleaned and/or HEPA vacuumed at least once each day.

32.3.8 The exit from the decontamination enclosure system shall be secured with a lockable door to prevent unauthorized entry.

32.3.9 Where the waste removal enclosure is part of the Personal Decontamination Facilities, waste removal shall not occur during shift changes or when otherwise occupied. Precautions shall be taken to prevent cycling of air outward through the shower and clean room.

33. ASBESTOS WASTE DISPOSAL

33.1 All asbestos waste shall be stored, transported and disposed of as per, but not limited to, the following regulations:

33.1.1 All applicable federal, state, and local regulations.

33.1.2 USEPA Asbestos NESHAP 40 CFR 61

33.1.3 US Department of Transportation 49 CFR 171-180

33.2 <u>TRANSPORTERS OR HAULERS</u>

Transporters and haulers of asbestos waste are subject to the following:

33.2.1 The contractor's transporter and disposal site shall be approved by the Owner.

33.2.2 The Contractor shall give twenty-four (24) hour notification to the owner prior to removing any asbestos waste from the site. All asbestos waste shall be removed from the site only during normal working hours. No asbestos waste may be taken from the site without authorization from the owner.

33.2.3 The Contractor shall have the transporter give the dates and times of arrival at the disposal site.

33.2.4 The transporter with the Contractor shall inspect all the transport containers prior to taking possession and signing the asbestos waste manifest. The transporter shall not have any off-site transfers or combine this asbestos waste with any other sites asbestos materials.

33.2.5 During loading or unloading, mark vehicles used to transport asbestos-containing waste with the following sign, which must be visible:

DANGER
ASBESTOS HAZARD
CANCER AND LUNG DISEASE HAZARD

33.3 WASTE STORAGE CONTAINER

All asbestos waste hauling storage containers are subject to the following procedures:

33.3.1 All asbestos waste hauling containers shall be fully enclosed and lockable (i.e., enclosed dumpster, 40' trailer, etc.) No open containers will be allowed (i.e., open dumpsters with canvas covers, etc.) unless a waiver is granted. In all cases, friable material will be transported in a fully enclosed and lockable dumpster.

33.3.2 The asbestos waste hauling containers shall be plasticized and sealed with a minimum of one (1) layer of six (6) millimeter polyethylene on the sides and two (2) layers of six (6) millimeter polyethylene on the floor.

33.3.3 The asbestos waste containers shall be labeled with an OSHA Label with the following Statements:

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

33.3.4 The waste transport container (truck, dumpster) must be appropriately labeled as required by the U.S. Department of Transportation.

33.3.5 The asbestos waste containers will not be permitted to leave the work site without the proper signatures.

33.3.6 The owner may initiate random checks at the disposal site to ensure that the procedures outlined herein are complied with.

33.4 WASTE DISPOSAL MANIFEST

The asbestos waste disposal manifest is subject to the following procedures:

33.4.1 An asbestos waste disposal manifest as provided for under NESHAP and/or individual state or local jurisdictions shall be provided by the contractor and is the only manifest to be utilized.

33.4.2 The contractor shall complete the asbestos waste disposal manifest and verify that all information and amounts are accurate and that the proper signatures are in place.

33.4.3 The asbestos waste disposal manifest shall have the signatures of the contractor and the transporter prior to any waste being removed from the work site.

33.4.4 The asbestos waste disposal manifest shall be signed by the disposal facility owner or operator to certify receipt of the asbestos-containing materials covered by the asbestos waste disposal manifest.

33.4.5 An original copy of the completed asbestos waste disposal manifest shall be returned to the owner by the contractor within 30 days of removal from the site.

33.5 COMPLIANCE

Compliance with the procedures described herein is mandatory and subject to the following:

33.5.1 Failure to adhere to these procedures shall constitute a material breach of the contract and the owner shall have the right to and may terminate the contract. Termination shall not relieve the contractor from future compliance.

33.5.2 All asbestos containing waste and/or asbestos contaminated materials must be disposed of as asbestos waste. This includes, but is not limited to, asbestos containing waste, all plastic sheeting, contaminated coveralls or "tyvek" suits, filters, foot covering, tape, etc.

33.5.3 As work progresses, the contractor shall remove sealed and labeled containers so that available storage space is not exceeded.

33.5.4 Disposal of such containers shall be at an authorized disposal site in accordance with the requirements of the appropriate disposal authorities.

33.5.5 The contractor shall submit to the owner the completed asbestos waste disposal manifest form and attached receipts.

33.5.6 Waste materials must be transported in enclosed trucks to prevent loose containers from falling off the vehicle.

33.5.7 At the disposal site, the bags or barrels must be carefully lowered into approved landfills by the workers.

A. Damaged bags shall remain in the drum (if used) and the entire contaminated and sealed drum shall be buried.

B. Uncontaminated drums may be recycled, if applicable.

33.5.8 The contractor shall notify the owner of proposed dates and times of transportation of waste to the landfill.

33.5.9 The workers shall perform this activity in approved disposable suits and appropriate respirators.

33.5.10 If temporary storage at the job site is to occur, the area must be secured from entrance by unauthorized persons. Temporary storage off the job site is not permissible.

34. DISMANTLING THE WORK AREA / DECONTAMINATION SYSTEM

When a final inspection and the results of the final air tests indicate that the area has been decontaminated, HEPA Units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filters, and seal intake to the HEPA Unit with six (6) millimeter polyethylene to prevent environmental contamination from the pre-filter.

35. FINAL CLEANING AND VISUAL INSPECTION

35.1 The abatement, encapsulation, cleaning and final inspection of the Work Areas are to be completed a minimum of two (2) days prior to the scheduled completion date, to enable air clearance sample collection and reporting. Pending successful final clearance, all work must be completed, and all contractor equipment must be removed from the building prior to the scheduled completion date.

35.2 The work areas will be visually inspected to assess completion of removal prior to encapsulation. This work may include the removal of hidden materials discovered during demolition work.

36. ABATEMENT CLOSE-OUT AND CERTIFICATE OF COMPLETION

36.1 COMPLETION OF ABATEMENT WORK

36.1.1 Seal negative air machines with six (6) millimeter polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area. Complete the work upon meeting the work area clearance criteria and fulfilling the following:

A. Remove all equipment, materials, debris from the work site.

B. Dispose of all asbestos containing waste material as specified elsewhere in this specification.

C. Fulfill other project close-out requirements as specified elsewhere in this section.

36.2 CERTIFICATE OF COMPLETION BY CONTRACTOR

The C.P.I.H. shall complete and sign a “Certificate of Completion” at the completion of the abatement and decontamination of a work area.

ASBESTOS REPORT FOLLOWS

End of Section 02821

Re-inspection/Management Planner Report to Satisfy Requirements of the Asbestos Hazard Emergency Response Act (AHERA)

Project Number:	**01187073**
Inspection Number:	IRSC-001
Prepared For:	USD 358
City:	Oxford, KS
Campus Name:	Oxford Schools
Building Name:	Intermediate School
Address:	515 North Water
Re-inspection Date:	July 2, 2018

Next AHERA re-inspection due to be completed prior to:

July 6, 2021

Prepared By: **Terracon Consultants, Inc.**
Wichita, KS

terracon.com

Terracon

Environmental ■ Facilities ■ Geotechnical ■ Materials

Table of *Contents*

LEA Summary

Project Number:	**01157083**
Inspection Number:	IRSC-001
Prepared For:	USD 358
City:	Oxford, Kansas
Campus Name:	Oxford Schools
Building Name:	Intermediate School
Re-inspection Date:	July 2, 2018

Consultant: **Terracon Consultants, Inc.,**
1815 South Eisenhower Street
Wichita, Kansas 67209
(316) 262-0171

The AHERA regulation is very complex, requiring the compilation of enormous amounts of data to be presented in this Report. The intent of this report is two-fold; to assist in protecting human health and the environment and to maintain compliance with 40-CFR 763, AHERA. Every attempt has been made to present all information in an orderly, user-friendly format to make the accomplishment of these goas as efficient as possible.

This Report uses a format that combines inspection data and Management Planner information on a single Unified Sampling Area (USA) Findings page to provide comprehensive information about a given material.

Because this Report is a living document, each LEA must maintain and update their management plans to reflect all changes in materials condition that have taken place. Documentation included should be the official appointment of a "Designated Person", all operations and maintenance records, periodic surveillance records, inspection and re-inspection records, all appropriate documentation for response action activities, annual dated notifications, and new employee and annual retraining documentation. All revisions and/or updates shall also be retained in the management plan. All of this information and any other information required by the AHERA regulation shall be retained by the LEA as part of the management plan.

Section 2

Inspector Certification

M·E·T·A

Mayhew Environmental Training Associates

INCORPORATED

Certificate # ME684AF386ECC64F7

Jane Alderson

has on 5/23/2018, in Lawrence, KS
completed the requirements for asbestos accreditation under Section 206 of TSCA Title II, 15 USC 2646

3-day Asbestos Building Inspector Initial

as approved by MO & the US EPA under 40 CFR 763 (AHERA) from 5/21/2018 to 5/23/2018
and
passed the associated exam on 5/23/2018 with a score of at least 70%

KANSAS EST. 1985 INC. 1987 MAYHEW ENVIRONMENTAL TRAINING ASSOCIATES SAFETY IN GOD ALONE

Bob Baer
Instructor

Thomas Mayhew
President

SSN: XXX-XX-5976
Expiration: 5/23/2019

P.O. Box 786 - Lawrence, KS. 66044 - 800.444.6382
www.metaenvironmental.net

Re-inspection Certification Introduction

The inspection process began with the Inspector meeting with the LEA's Designated Person and reviewing the LEA's most current AHERA Asbestos Management Plan. This review was conducted so that the Inspector could become familiar with the facilities and the results of the previous inspection(s). After the review process, the Inspector did a complete building walk-though to determine the current condition of all known and assumed asbestos-containing building materials (ACBMs). During the building walk-through the following protocol was followed:

- All known and assumed ACBM was visually inspected and re-assessed under 40 CFR763.88;
- All previously considered non-friable ACBM's friability was determined by touching;
- All newly friable known and assumed ACBM location(s) were documented;
- The condition of newly friable ACVM was assessed under 40 CFR 763.88; and
- The condition of previously known and assumed ACBM was assessed under 40 CFR 763.88.

To determine the appropriate AHERA damage category the Inspector assessed the condition of known and assumed ACBM according to the following protocol:

- The location and amount of the material in total and the amount of damage or significant damage, if any;
- The condition of the materials was determined by the following;
    - The type of damage;
    - The severity of the damage; and
    - The extent or spread of damage.

- The accessibility of the material;
- The materials' potential for disturbance;
- Known or suspected causes of damage or significant damage;
- Preventative measures which might eliminate the reasonable likelihood of undamaged ACBM from becoming damaged.

After known and assumed ACBM was reassessed according to the above criteria, the ACBM was given on of the following AHERA damage categories:

- Significantly Damaged Friable Surfacing ACM;
- Damaged Friable Surfacing ACM;
- Significantly Damaged Thermal System Insulating ACM;
- Significantly Damaged Friable Miscellaneous ACM;
- Damaged Friable Miscellaneous ACM;
- ACBM with Potential for Significant Damage;

- ACBM with Potential for Damage; and
- Remaining Friable ACBM of Friable Suspect ACBM.

All known or assumed ACBM with appropriate responses are incorporated into the Unified Sampling Area (USA) Finding in Section IV of this Report.

Oxford USD 358
Inspection/Sample Extraction Certification

Inspection Number:	IRSC-001	**Inspection Date:**	**July 6, 2015**
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	3	**Building Name:**	Intermediate School

The Inspector's signature below, certifies that each facility covered by this report was re-inspected and re-assessed, and if needed, all bulk samples extracted, as per agreement with the LEA in accordance with 40 CFR 763 on the dated indicted in this report.

Inspector:	**Jane Alderson**
State of Accreditation:	Kansas
Accreditation Number:	ME684AF386ECC64F7
State License Number:	N/A
Expiration Date:	May 23, 2019
Signature:	

Building Asbestos-containing Materials Friability List

In accordance with 40 CFR 763.93(e), a general listing of material by friability is provided below:

Inspection Number:	IRSC-001	**Square Footage:**	22,223
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	3	**Building Name:**	Intermediate School
Address:	515 North Water	**City, State, ZIP:**	Oxford, Kansas 67119

Known Friable ACM:	Known Non-friable ACM:	Assumed Friable ACM:	Assumed Non-friable ACM:	No Suspect Material:*
NO	**NO**	**YES**	**YES**	**NO**

***Caution!!! If this column is checked, this includes areas inspected and accessible to the inspector as required for inspections and re-inspections in accordance with 40 CFR 763.**

Summary of Asbestos-containing Materials

In accordance with 40 CFR 763.93, a list of all known and assumed ACM addressed by category must be provided. Below is a list of known and assumed ACM by category:

Inspection Number: IRSC-001
Campus Number: 1
Building Number: 3
Address: 515 North Water
Square Footage: 22,223
Campus Name: Oxford Schools
Building Name: Intermediate School
City, State, ZIP: Oxford, Kansas 67119

USA:	Material Description:	Category:	Quantity and Location:	System:	Friable:
1	Cement Fume Hood	Miscellaneous	1 Unit – Science Room 6	Miscellaneous	No
2	9" x 9" Floor Tile Brown	Miscellaneous	1,482 ft²	Flooring	No
3	12" x 12" Floor Tile White	Miscellaneous	3,360 ft²	Flooring	No
4	Gypsum Wallboard with Joint Compound and Tape	Miscellaneous	800 ft²	Walls	No
5	Decorative Plaster Texturized	Surfacing Material	400 sq. ft.	North and South Auditorium Landings and Hallway	No

Section 3

Management Planner Certification

Introduction

The AHERA regulation requires LEAs to develop an asbestos management plan for each school under its administrative control or direction. The management plan must be developed by an accredited asbestos Management Planner.

Some of the major components required in the management plan include:

- A description of the results from inspections and re-inspections;
- A plan for periodic surveillance; and
- Documentation of response actions.

Each LEA is required to maintain a copy of the management plan in its administrative office and each school is required to maintain a copy of the school's management plan in the school's administrative office. These plans are to be made available for inspection by the public without cost or restriction. LEAs must notify in writing parents, teachers, and employee organizations of the availability of management plans upon submission of the plan to the State and at least once each school year thereafter. In the absence of any such organization, the LEA shall provide written public notice to parents, teachers, and employees of the availability of the management plan. A dated report of the means of notification must be included in the Management Plan.

The regulation further required that the LEA make an evaluation of th resources needed to complete response actions successfully and to carry out re-inspection, operations and maintenance activities, periodic surveillance and training or any other associated costs needed to implement the management plan.

Response Action Selected

The regulation states that the LEA shall select and implement, in a timely manner, the appropriate response actions for each known and assumed ACM. The selection of the response action shall be sufficient to protect human health and the environment. The LEA may select from response actions that protect human health and the environment and are the least burdensome methods.

Response action recommendations provided by the Management Planner in this management plan are the least stringent as those required by the regulation. The response action selections appear in the Unified Sampling Area Findings documentation for each material. Under "Management Planner Recommendations" a more detailed explanation will be provided, where appropriate.

At the completion of any response action to remove, encapsulate, or enclose a known or assumed ACBM, the person designated by the LEA shall visually inspect each functional space or homogenous area where such action was conducted to determine whether the action has

been properly completed. It is suggested that the Designated Person document this inspection and file a signed and dated report in the Management Plan.

The person designated by the LEA shall collect air samples using aggressive sampling as described in Appendix A to Subpart E of 40 CFR 763 to monitor air for clearance after each removal, encapsulation, and enclosure project involving ACBM, except for projects that are small-scale, short-duration. All final air sampled collected must be analyzed using Transmission Electron Microscopy (TEM) if more than 160 square feet or 260 linear feet of friable asbestos is involved. If less than this amount, Phase Contrast Microscopy may be used for final air clearance analysis.

Annual Notifications

The regulation states that a LEA shall: "Ensure that workers and building occupants, or their legal guardians, are informed at least once each school year about inspections, response actions, and post-response action activities, including periodic re-inspection and surveillance activities that area planned or in progress." (40 CFR 763.84(c))

Copies of notifications must be included with this report. Also include a description of the method of notification and the date the notification was implemented.

Periodic Surveillance and Training of Worker

The regulation states that: "At least once every six months after a management plan is in effect, each local education agency shall conduct periodic surveillance in each building that it leases, owns, otherwise uses as a school building that contains ACBM or is assumed to contain ACBM." (40 CFR 763.92 (b))

Copies of signed and dated periodic surveillance reports must be included in the Appendix of this report.

The LEA shall ensure, prior to implementation of the operations and maintenance provisions of the management plan, that all member of its maintenance and custodial staff (custodians, electricians, heating/air conditioning technician, plumbers, etc.) who may work in a building that contain ACBM receive awareness training of at least 2 hours, whether or not they are required to work directly with ACBM. New custodial and maintenance employees are to be trained within 60 days after commencement of employment. (40 CFR 763.92(a)(1))

The LEA shall ensure that all members of its maintenance and custodial staff who conduct any activities that will result in the disturbance of ACBM receive the 2 hour awareness training stated above and an additional 14 hours of training. (40 CFR 763.92(a)(2))

All training records must be made part of each building's re-inspection/management planner report.

Oxford USD 358

Management Planner Statement and Certification

Inspection Number: **IRSC-001-01-03** Inspection Date: **July 2, 2018**

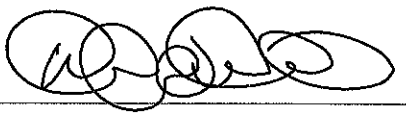
In accordance with 40 CFR 763.88 the LEA has elected that a Management Planner review the results of the re-inspection for all known and assumed ACBM present in the facilities represented in this report. The Management Planner recommendations are based on a review of the re-inspection and the professional experience of the Management Planner. All management planner recommendations are in accordance with 40 CFR 763.93.

In addition to response action recommendations, the Management Planner provides suggested start and completion dates for each response action. These dates are based on the professional judgment of the Management Planner and the Inspector comments concerning material condition and potential for disturbance. If the LEA does not agree with these recommendations or suggested dates, space is provided for the LEA to select its own response actions, and start and completion dates.

In some cases the recommended response action may be more stringent that the regulation requires. However, this does not mean that the LEA cannot select a response action that is less stringent, as provided for in 40 CFR 763.90(a), as long as the response action selected protects human health and environment.

I hereby certify that all Management Planner components contained in this report were completed in accordance with 40 CFR 763.93.

Management Planner: **William Wright**
State of Accreditation: Kansas
Accreditation Number: 6072-296-042618
State License Number: N/A
Expiration Date: 26-Apr-19

Signature: 

Response actions including removal, encapsulation, enclosure, or repair, other than small-scale short-duration repairs, shall be designed and conducted by persons accredited to design and conduct response actions. (40 CFR 763.90(g))

Oxford USD 358

LEA Statement and Acceptance

Inspection Number: **IRSC-001-01-03** Inspection Date: **July 2, 2018**

In accordance with 40 CFR 763, the LEA must ensure that the Designated Person has received proper training to carry out all duties as stated in the AHERA regulation. Furthermore, all response actions including removal, encapsulation, enclosure, or repair, other than small-scale/short-duration repairs, shall be designed and conducted by persons accredited to design and conduct response actions.

The AHERA regulation requires that the following information must be provided and entered on this page by the LEA.

This LEA has accredited personnel on staff to design and carry out response actions.

Yes _____ **No** _____

Statement of the Designated Person (DP) Training:

Name: _____
Date of Training: _____
Hours of Training: _____
Address of DP: _____
Telephone Number of DP: _____

As a representative of this LEA, I accept this management plan and agree to implement and carry-out all provisions of this plan in accordance with 40 CFR 763.

Name of Authorized Person: _____
Signature of Authorized Person: _____
Date: _____

Section 4

Report Data

Oxford USD 358
Building Summary

Inspection Number:	IRSC-001	**Square Footage:**	22,223
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	3	**Building Name:**	Intermediate School
Address:	515 North Water	**City, State, ZIP:**	Oxford, Kansas 67119
		Inspector:	Jane Alderson

Comments:

This is a brick and cinder block building constructed in 1928.

The building has radiant steam heat.

Assumed asbestos-containing materials present area: a transite fume hood, 9" x 9" floor tile, 12" x 12"floor tile, and gypsum wallboard.

Materials previously found to be non-asbestos-containing are various ceiling tile and hard plaster.

The gray 12" z 12" floor tile in the kitchen, locker rooms and restrooms are newer applications.

During past abatements thermal insulation was removed from the boiler room. Pipe insulation and debris was removed from the tunnel

Problems:

No problems to report.

Monitor all known and assumed asbestos-containing materials under an O&M program until removed.

Oxford USD 358
Building Summary

Inspection Number:	IRSC-001	**Square Footage:**	22,223
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	3	**Building Name:**	Intermediate School
Address:	515 North Water	**City, State, ZIP:**	Oxford, Kansas 67119
		Inspector:	Jane Alderson

This section is the most comprehensive part of this report.

Information gathered during the building assessment and walk-through is provided in detail by Unified Sample Area or (USA) beginning directly after this page. Each USA is given a number. Each USA page is divided into three sections:

Section 1 - ***Inspection Report***

This section provides details such as; "Materials Description" – MJP (mudded joint packing) on Fiberglass Insulation, Floor Tile – 9" x 9", etc.; "System Description" – Mechanical, Domestic Water, Ceiling/Wall, etc.; "Asbestos" – Yes, No, or Assumed; "Material Category" – Surfacing, Thermal, or Miscellaneous; "Friable" – Yes, No, and Yes but Encapsulated; "Accessibility" – High, Moderate, or Low; "Potential for Disturbance" – High, Moderate, or Low; "Damage Category" – ACM with Potential for Damage, Damaged Friable Surfacing ACM, etc.; "Reason for Damage" – The materials is in good condition, or the material is damaged due to water, etc. Also, information on the estimated "Quantity" of material and the "Location" of material within the building is provided.

Section 2 - ***Management Planner Report***

This section summarizes management planner recommendations. "Recommended Response Action" covers EPA recommendations. A "Response Action Schedule" is provided for the material type. Information covering work practices, and specific details pertinent to each individual USA is given under "Management Planner Comments". Included are recommendations for proper management of the materials. "O&M Procedure Reference" is given to guide the user to the page in the accompanying O&M Manual to assist in properly managing the material. "LEA response action election if different than above" allows the LEA to choose another response action if it is less burdensome and protects human health and the environment.

Section 3 - ***Sample Collection and Laboratory Analysis Information***

When bulk building material samples are collected, this section summarizes sample collection and analysis information. Sample numbers for each sample collected for the USA are included along with the sample collection location, collection date, and laboratory results indicating asbestos percentage ad type, if any.

Oxford USD 358
AHERA Inspection Findings

Inspection Number:	IRSC-001	**Inspection Date:**	July 2, 2018
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	3	**Building Name:**	Intermediate School
Square Footage:	22,223	**Inspector:**	Jane Alderson

Detailed Summary of Unified Sampling Area (USA): 1

***** Inspection Report ***** There was no change in the condition of this USA since the previous inspection.

Material Description:	Cement Fume Hood	**System Description:**	Miscellaneous
		Asbestos:	Assumed
Material Category:	Miscellaneous Material	**Friable:**	No
Accessibility:	Moderate	**Potential for Disturbance**	Low
Damage Category:	ACBM with Potential for Damage		
Reason For Damage:	This material is in good condition.		

Quantity	**Location:**
Total – 1 Unit	Science Room 6

***** Management Planner Report *****

Recommended Response Action:

Continue with O&M until condition of materials changes.

Start Date	Completion Date
07/02/2018	07/06/2021

Management Planner Comments:

Do not disturb this material. Remove when feasible. Monitor under O&M program until removed.

This material is assumed to contain asbestos. Sample before disturbing or removing.

Repairing or removing asbestos-containing materials requires compliance with several complex governmental regulations. Non-compliance with these regulations can expose the building owner to citations and fines. Call Terracon at 316-262-0171 for assistance.

LEA response if action election if different than above:	Start Date	Completion Date

Oxford USD 358
AHERA Inspection Findings

Inspection Number:	IRSC-001	**Inspection Date:**	July 2, 2018
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	3	**Building Name:**	Intermediate School
Square Footage:	22,223	**Inspector:**	Jane Alderson

Detailed Summary of Unified Sampling Area (USA): 2

***** Inspection Report ***** There was no change in the condition of this USA since the previous inspection.

Material Description:	9" x 9" Floor Tile Brown	**System Description:**	Flooring
		Asbestos:	Assumed
Material Category:	Miscellaneous Material	**Friable:**	No
Accessibility:	Low	**Potential for Disturbance**	Low
Damage Category:	ACBM with Potential for Damage		
Reason For Damage:	This material is in good condition.		

Quantity Total – 1,482 ft²

Location: Beneath carpet in room 6, 7, and 8. May be beneath carpet and plywood in main office area.

***** Management Planner Report *****

Recommended Response Action:

Continue with O&M until condition of materials changes.

Start Date	Completion Date
07/02/2018	07/06/2021

Management Planner Comments:

Do not drill, saw, sand or cut vinyl floor tile without proper protection. Wax periodically. Do not use dry methods to remove old wax. Monitor under an O&M program until removed.

This material is assumed to contain asbestos. Sample before disturbing or removing.

Repairing or removing asbestos-containing materials requires compliance with several complex governmental regulations. Non-compliance with these regulations can expose the building owner to citations and fines. Call Terracon at 316-262-0171 for assistance.

LEA response if action election if different than above:	Start Date	Completion Date

Oxford USD 358
AHERA Inspection Findings

Inspection Number:	IRSC-001	**Inspection Date:**	July 2, 2018
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	3	**Building Name:**	Intermediate School
Square Footage:	22,223	**Inspector:**	Jane Alderson

Detailed Summary of Unified Sampling Area (USA): 3

***** Inspection Report ***** There was no change in the condition of this USA since the previous inspection.

Material Description:	12" x 12" Floor Tile, White	**System Description:**	Flooring
		Asbestos:	Assumed
Material Category:	Miscellaneous Material	**Friable:**	No
Accessibility:	High	**Potential for Disturbance**	Low
Damage Category:	ACBM with Potential for Damage		
Reason For Damage:	This material is in good condition.		

Quantity	**Location:**
Total – 3,360 ft²	Auditorium

***** Management Planner Report *****

Recommended Response Action:
Continue with O&M until condition of materials changes.

Start Date	Completion Date
07/02/2018	07/06/2021

Management Planner Comments:

Do not drill, saw, sand or cut vinyl floor tiles without proper protection. Wax periodically. Do not use dry methods to remove old wax. Monitor under an O&M program until removed.

This material is assumed to contain asbestos. Sample before disturbing or removing.

Repairing or removing asbestos-containing materials requires compliance with several complex governmental regulations. Non-compliance with these regulations can expose the building owner to citations and fines. Call Terracon at 316-262-0171 for assistance.

LEA response if action election if different than above:	**Start Date**	**Completion Date**

Oxford USD 358
AHERA Inspection Findings

Inspection Number:	IRSC-001	**Inspection Date:**	July 2, 2018
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	1	**Building Name:**	Intermediate School
Square Footage:	22,223	**Inspector:**	Jane Alderson

Detailed Summary of Unified Sampling Area (USA): **4**

***** Inspection Report ***** There was no change in the condition of this USA since the previous inspection.

Material Description:	Gypsum Wallboard with Joint Compound and Tape	**System Description:**	Ceiling
		Asbestos:	Assumed
Material Category:	Miscellaneous Material	**Friable:**	No
Accessibility:	Low	**Potential for Disturbance**	Low
Damage Category:	ACBM with Potential for Damage		
Reason For Damage:	This material is in good condition.		
Quantity	**Location:**		
Total – 800 ft²	Kitchen and kitchen storerooms		

***** Management Planner Report *****

Recommended Response Action:
Continue with O&M until condition of materials changes.

Start Date	Completion Date
07/02/2018	07/06/2021

Management Planner Comments:

Do not drill, saw, or nail into wallboard without proper protection. Remove when feasible. Monitor under O&M program until removed.

This material is assumed to contain asbestos. Sample before disturbing or removing.

Repairing or removing asbestos-containing materials requires compliance with several complex governmental regulations. Non-compliance with these regulations can expose the building owner to citations and fines. Call Terracon at 316-262-0171 for assistance.

LEA response if action election if different than above:	Start Date	Completion Date

This completes this building's AHERA re-inspection/Management Planner report. If you have any questions about this report, please contact:

Terracon Consultants, Inc.
1815 South Eisenhower Street
Wichita, Kansas 67209

Oxford USD 358
AHERA Inspection Findings

Inspection Number:	IRSC-001	**Inspection Date:**	July 2, 2018
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	1	**Building Name:**	Intermediate School
Square Footage:	22,223	**Inspector:**	Jane Alderson

Detailed Summary of Unified Sampling Area (USA): 5

***** Inspection Report ***** There was no change in the condition of this USA since the previous inspection.

Material Description:	Decorative Plaster Textured	**System Description:**	Ceiling/Wall
		Asbestos:	Assumed
Material Category:	Surface Material	**Friable:**	No
Accessibility:	Low	**Potential for Disturbance**	Low

Damage Category: ACBM with Potential for Damage

Reason For Damage: This material is in good condition.

Quantity	**Location:**
Approximately 1000 ft²	Auditorium and Hallway

***** Management Planner Report *****

Recommended Response Action:

Continue with O&M until condition of materials changes.

Start Date	Completion Date
07/02/2018	07/06/2021

Management Planner Comments:

Do not drill, saw, or nail into trim without proper protection. Remove when feasible. Monitor under O&M program until removed.

This material is assumed to contain asbestos. Sample before disturbing or removing.

Repairing or removing asbestos-containing materials requires compliance with several complex governmental regulations. Non-compliance with these regulations can expose the building owner to citations and fines. Call Terracon at 316-262-0171 for assistance.

LEA response if action election if different than above:	Start Date	Completion Date

This completes this building's AHERA re-inspection/Management Planner report. If you have any questions about this report, please contact:

Terracon Consultants, Inc.
1815 South Eisenhower Street
Wichita, Kansas 67209

Oxford USD 358
AHERA Inspection Findings

Inspection Number:	IRSC-001	**Inspection Date:**	July 2, 2018
Campus Number:	1	**Campus Name:**	Oxford Schools
Building Number:	1	**Building Name:**	Intermediate School
Square Footage:	22,223	**Inspector:**	Jane Alderson

Detailed Summary of Unified Sampling Area (USA): 6

***** Inspection Report ***** There was no change in the condition of this USA since the previous inspection.

Material Description:	Curtain	**System Description:**	Miscellaneous
		Asbestos:	Assumed
Material Category:	Miscellaneous Material	**Friable:**	No
Accessibility:	Low	**Potential for Disturbance**	Low

Damage Category: ACBM with Potential for Damage
Reason For Damage: This material is in good condition.

Quantity	**Location:**
Total – 400 ft²	Kitchen and kitchen storerooms

***** Management Planner Report *****

Recommended Response Action:
Continue with O&M until condition of materials changes.

Start Date	Completion Date
07/02/2018	07/06/2021

Management Planner Comments:

Do not disturb without proper protection. Remove when feasible. Monitor under O&M program until removed.

This material is assumed to contain asbestos. Sample before disturbing or removing.

Repairing or removing asbestos-containing materials requires compliance with several complex governmental regulations. Non-compliance with these regulations can expose the building owner to citations and fines. Call Terracon at 316-262-0171 for assistance.

LEA response if action election if different than above:	**Start Date**	**Completion Date**

This completes this building's AHERA re-inspection/Management Planner report. If you have any questions about this report, please contact:

Terracon Consultants, Inc.
1815 South Eisenhower Street
Wichita, Kansas 67209

Section 5

Appendix

Periodic Surveillance

Pursuant to 40 CFR 763.92(b); At least once every 6 months after a management plan is in effect, each local education agency shall conduct a periodic surveillance in each building that it leases, owns, or otherwise uses as a school building that contains asbestos-containing building materials or is assumed to contain asbestos-containing building materials.

The local education agency will receive 30 days prior to each scheduled 6-month periodic surveillance, the forms necessary to complete the 6-month periodic surveillance.

The local education agency upon completion of the 6 month surveillance will include 1 copy in the school's management plan and 1 copy in the district's management plan for each building requiring periodic surveillance to be conducted.

Oxford USD 358
Periodic Surveillance Report

Inspection Number:	IRSC-001-01	**Campus Name:**	Oxford Schools
Campus Number:	1	**Building Name:**	Intermediate School
Building Number:	3	**Building Address:**	515 North Water
		City, State, Zip:	Oxford, Kansas 67119

The AHERA regulation (40 CFR 763.92 (b)) states that: "At least once every six months after a management plan is in effect, each local education agency shall conduct periodic surveillance in each building that it leases, owns, or otherwise uses as a school building that contains ACBM or is assumed to contain ACBM." Below is a listing of Unified Sampling Areas (USAs) requiring periodic surveillance to be completed.

Indicate whether a change has occurred from the previous condition by checking either Yes or No. If a change in condition of the material has occurred, indicate the USA number and the reason for change in the comment area at the bottom of this page. Print the name of the person performing the surveillance and complete the date the surveillance was completed. The signature of the person performing the surveillance is required. If the person conducting the surveillance is not the DP, the DP should be informed of any change in the condition of any USA.

Printed name of person performing surveillance: _____

Signature of person performing surveillance: _____

Date of surveillance: _____

USA	Materials Description:	Quantity and Location	Damage Category	Change in Condition	
1	Cement Fume Hood	1 Unit – Science Room 6	ACBM with Potential for Damage	Yes ___	No ___
2	9" x 9" Floor Tile Brown	1,482 ft²	ACBM with Potential for Damage	Yes ___	No ___
3	12" x 12" Floor Tile White	3,360 ft²	ACBM with Potential for Damage	Yes ___	No ___
4	Gypsum Wallboard with Joint Compound and Tape	800 ft²	ACBM with Potential for Damage	Yes ___	No ___
5	Decorative Plaster Textured	~1000 ft²	ACBM with Potential for Damage	Yes ___	No ___
6	Stage Curtain	400 ft²	ACBM with Potential for Damage	Yes ___	No ___

Comments: _____