ADDENDUM No. 2
Request for Competitive Sealed Proposals (CSP)
20CSP079 HVAC and Civil Improvements at Cook Elementary School

November 15, 2019

Received by bidder:

Date:_____

Name:_____

Signature:_____

Item 1: Abatement Specifications and Updated Drawings

The drawings for 20CSP079 (19-0016-COOK) have been updated and are available at Miller IDS under 20CSP079.

ADDENDUM No. 2

Date: **November 14, 2019**

Project Name: HVAC & Civil Improvements at Cook ES 20CSP079

AISD Project Number: 190016-COOK

This Addendum forms a part of the Contract and clarifies, corrects, or modifies original Bid Documents, dated October 15, 2019.

1. **Abatement Specifications prepared by Burcham Environmental dated October 7th, 2019 are to be deleted and replaced with Abatement Specifications prepared by Burcham Environmental dated: Revised November 13, 2019, and are included in the Project Manual.**

2. **REFER TO ADDENDUM# 2 FROM JOSE I. GUERRA CONSULTANTS DATED NOVEMBER 14, 2019 FOR MECHANICAL, PLUMBING AND ELECTRICAL ITEMS.**

Approved by ENGINEER/ARCHITECT

Heimsath Architects
7509 Manchaca Road, Bldg 4.
Austin, TX 78745
(512) 478-1621

END OF ADDENDUM No. 2

SITE SPECIFIC SPECIFICATION MANUAL FOR
AUSTIN INDEPENDENT SCHOOL DISTRICT

ASBESTOS ABATEMENT AT

COOK ELEMENTARY SCHOOL

1511 CRIPPLE CREEK DRIVE
AUSTIN, TEXAS

AISD PROJECT NUMBER: 19-001-COOK
BES PROJECT NUMBER: 2018-250
DATE: REVISED NOVEMBER 13TH, 2019

Consultant

BURCHAM ENVIRONMENTAL SERVICES, L.L.C.
Arthur Kent Burcham, Consultant
P.O. Box 2496
Wimberley, Texas 78676

THIS SPECIFICATION PACKAGE WAS DEVELOPED BY ARTHUR KENT BURCHAM, TDSHS CONSULTANT LICENSE #10-5317. EXPIRES 6/2021

Arthur Kent Burcham, Consultant

Owner

AUSTIN INDEPENDENT SCHOOL DISTRICT
Mr. Rumman Zamir
4000 S. IH 35 Frontage Road
Austin, Texas 78704

Section 100 - Scope of Work - Asbestos Abatement

RELATED DOCUMENTS:

This specification covers the abatement of asbestos hazards from building structures and components listed in these Contract Documents. It is the intent of the Contract Documents to show all of the work necessary to complete the project.

All work is to be completed following these specifications and all applicable Federal, State and local rules and regulations. Where a conflict exists between these specifications and/or applicable rules and regulations, the more stringent shall apply.

Section 100.1-Scope of Work:

100.1.1 All quantities are approximate and must be field verified by the Contractor.

PREPARATORY WORK WILL NOT START AT THE SITE UNTIL PROJECT MANAGER IS PROVIDED A COPY OF ALL REQUIRED EMPLOYEE/CONTRACTOR PAPERWORK AND COLOR COPY OF EACH LICENSE USED AT THE SITE.

SITE SUPERVISOR WILL BE PROVIDED WITH A CHECKLIST OF ITEMS TO BE LOCATED AT THE SITE IN ACCORDANCE WITH THESE SPECIFICATIONS AND SITE SUPERVISOR WILL BE REQUIRED TO COMPLY WITH ALL ITEMS TO BE LOCATED AT THE SITE PRIOR TO START OF WORK.

100.1.2 The Project Manager will be conducting personnel sampling as required by OSHA, and results shall be made available in accordance with OSHA rules and regulations.

100.1.3 Pre-abatement air sampling of the designated work area and the adjoining area is to be accomplished by the Project Manager or Consultant.

100.1.4 No pre-abatement work is to start until the Project Manager or Consultant has approved all submittals required in these specifications.

100.1.5 Site condition of asbestos-containing materials identified within these specifications may differ from condition noted within these specifications.

100.1.6 The scope of work for this project includes the removal of the following estimated quantities of asbestos-containing building materials:

Material	Location	Quantity	Section	*Special Conditions
Insulation	Mechanical Piping (Original Structure)	+/- 240 ln.ft.		1, 3
Sheetrock/Surfacing	Walls of Original Structure	+/- 4 sq.ft.		2, 3

These materials are to be removed in accordance with these general specifications, specific sections as well as the following special conditions:

* SPECIAL CONDITIONS:

1. Prep to consist of glove-bags installed onto any insulation located on mechanical piping systems in fifteen (15) classrooms of the original structure. Estimate of removal quantity is 16 linear feet located on 15 AC units (Childers mastic located on fiberglass insulation is asbestos-containing). Contractor is to install glove-bags onto insulation requiring removal, place a drop cloth of 6-mil poly sheet beneath each glove-bag, remove insulation into glove-bag, wet wipe pipe system, evacuate air inside glove-bag via HEPA-equipped vacuum, remove glove-bag, goose-neck glove bag and place into additional 6-mil poly disposal bag. Exposed edges of remaining insulation is to have a layer of post-abatement lockdown encapsulant applied

to all exposed remaining insulation. HVAC systems are to be off during all abatement in these areas. Workers are to regulate area during work and are to don personnel/respiratory protection.

2. Installation of thermostats, including removal of any current thermostats in the original portion of the building will require installation of glove-bags for removal of thermostats from wall areas as well as any cuts and/or holes to be drilled for installation of new thermostats. It is estimated that removal of a thermostat and installation of a new thermostat will be required in sixteen (16) classrooms. Contractor is to install glove-bags on walls, remove any existing thermostats as well as for cutting and/or installation of new thermostats or any other work on walls in the original portion of the structure. Wet methods are to be utilized during the cutting and/or removal process. Upon completion of removal and/or cutting of new thermostat installation areas, Contractor is to apply a layer of post-abatement lockdown encapsulant to all areas. Contractor is to install a drop cloth of 6-mil poly sheet on floors beneath glove-bag removal areas and HVAC systems are to be off during all abatement in these areas. Workers are to don personnel/respiratory during this work and regulate the area. ANY WORK TO SHEETROCK WALLS IN THE ORIGINAL BUILDING IS TO BE CONDUCTED BY THE ASBESTOS ABATMENT CONTRACTOR AS SAMPLING INDICATES SURFACING/JOINT COMPOUNDS ON THESE WALLS CONTAIN ASBESTOS. CONTRACTOR IS TO AVOID CUTTING INTO ANY SHEETROCK PANELS WITH SURFACING AND/OR JOINT COMPOUNDS LOCATED ON WALLS OF ORIGINAL BUILDING, INCLUDING ABOVE CEILING GRID AREAS.

3. All poly/bags are to be as specified or in accordance with Texas Department of State Health Services rules and regulations. This section applies to all sections throughout these specifications regarding 4-mil and/or 6-mil poly sheet and bags. TEM AIR CLEARANCES WILL NOT REQUIRED FOR THIS PROJECT.

Section 100.2-Pre-Abatement Activities (Interior Preparation):

100.2.1 Verify and lockout all electrical power to work areas. Provide temporary power and lighting as necessary to maintain a safe and comfortable work environment. Electrical service and water are to be provided by the Owner. Connections at any site with current electrical and water service are the responsibility of the Contractor. Connection to existing electrical service will require the use of a State licensed electrician.

100.2.2 Remove all uncontaminated moveable objects. Cover all uncontaminated immovable objects remaining in the work area with a least two layers of 6-mil poly sheet, individually applied. Do not cover contaminated objects.

100.2.3 Verify and locate all potential fire exits. Maintain emergency and fire exits from the work areas, or established alternative exits satisfactory to the Project Manager and any applicable City, State or local fire code. Mark fire exits appropriately on the work area side of the containment. Exit arrows pointing in the direction of the nearest exit are to be clearly marked in Spanish and English.

100.2.4 Seal off work areas from those in which work will not occur with a critical barrier consisting of at least two layers of six-mil poly sheeting, individually applied. Place appropriate warning signs in English and Spanish, on the outside of critical barriers and at all entrances to work areas.

100.2.5 Construct separate personnel and barrel/equipment decontamination units in compliance with EPA guidelines concerning number, size and placement of airlocks, etc. Shower in the personnel decontamination unit shall open into an airlock on both the contaminated and uncontaminated sides and shall be equipped with both hot and cold running water. Decontamination units shall be framed with 2"x4" lumber (or an acceptable material approved by the Project Manager). Equipment room for the decontamination units shall be at least 6'x6' square. Construct decontamination units of appropriate materials to provide airtight barriers to allow continuous reduced air pressure to be maintained.

100.2.6 All shower waste water is to be filtered to a final pore size of 5.0 microns. All waste water is to be drained into the sanitary sewer or removed from the site. Shower waste filters are to be replaced when they become clogged, but not less than every third day. Dispose of all filters as asbestos-contaminated waste.

100.2.7 Cover floor areas, except where floor tile and/or mastic materials are to be removed, with two layers of 6-mil plastic sheeting, individually applied, extending at least 12 inches up the walls. Cover wall areas, except those surfaces scheduled for demolition/renovation, with two layers of 4-mil plastic sheeting, individually applied, extending at least 12 inches onto the floor. Seal seams to prevent leakage. No seams shall be located at wall to wall or wall to floor joints. Do not cover contaminated surfaces.

100.2.8 Place work areas under reduced air pressure as specified. Allow no air movement system or air filtering equipment to discharge unfiltered air outside the work area. Submit proposed number, rated flow, placement and route of exhaust to Project Manager for review and approval prior to beginning work. The Consultant may complete this process and provide to the Contractor.

100.2.9 Ensure that all barriers and plastic sheeting enclosures remain effectively sealed and taped for the duration of abatement and subsequent cleaning. Visually inspect enclosures at the beginning and end of each work shift. Repair damaged barriers and remedy defects immediately upon discovery. Use smoke methods or other approved methods to test effectiveness of barriers when requested by the Project Manager.

100.2.10 Maintain a sign-in/out log in the immediate area of the change room to be signed by every person each time upon entering and leaving the work area(s).

100.2.11 Inside each work area place a fire extinguisher with a minimum NFPA rating of 10BC (dry chemical) for every 3,000 square feet, or fraction thereof, of work area for the duration of abatement and subsequent cleaning activities. The same type of fire extinguisher is to be placed in the vicinity of the change room.

100.2.12 Contractor is to install a fully functional 3-stage decontamination facility (to include two separate airlocks) at the entrance to the containment area, and warm water is to be available at the shower prior to ANY removal. Preparatory work for this containment is to include decontamination facility, air filtration and critical barriers. All materials are to be wetted as removed and bagged as soon as removed.

All debris currently in areas to be abated is to be treated as asbestos-contaminated waste. Prior to cleanup of these areas and installation of containment, Contractor will be required to install critical barriers, air filtration devices and functional decontamination unit.

100.2.13 Contractor will be responsible for maintaining "negative pressure" within the containment area (minimum of -.02" w.c. on a digital manometer). Electricity is available at the site. Contractor will be required at all times while work is taking place to have a fully functional digital manometer installed within the containment area. At times when work is not taking place, Contractor may install a sealed and calibrated magnehelic gauge in lieu of the digital manometer.

100.2.14 Notify Project Manager for review of the preparation of the work area(s) prior to any disturbance of asbestos-containing material. Prior to notification, complete plasticizing of the work area, and construction of personnel and barrel/equipment decontamination enclosure systems. No removal work can begin until preparations have been observed and accepted by the Project Manager.

Section 100.3-Pre-Abatement Activities (Exterior Preparation):

100.3.1 Restrict access to exterior grounds immediately adjacent to work areas by barrier tape of similar means.

100.3.2 In lieu of critical barrier installation within the structure, Contractor may cover window and door openings, with at least two layers of 6-mil poly sheeting, individually applied. Poly sheeting is to be secured with 1"x2" furring strips or other means acceptable to Project Manager.

100.3.3 Place appropriate warning signs in English and Spanish on at least every other window/door

opening and at the decontamination facility.

Section 100.4-Removal Activities (Floor Tile and/or Mastic)

100.4.1 Prepare work area as previously specified.

100.4.2 Thoroughly wet the asbestos-containing materials to be removed with amended water prior to handling or stripping to reduce fiber dispersal into the air. Accomplish wetting with a fine mist of amended water. Spray materials repeatedly during the work process to maintain a continuously wet condition throughout progress of the removal work.

100.4.3 Remove saturated asbestos-containing materials in small sections. Do not allow materials to dry out. As they are removed, place floor tile into one "onion bag" and then place bag into two properly labeled 6-mil disposal bags.

100.4.4 Upon completion of floor tile removal, Contractor is to remove mastic (as required). Removal of mastic is to be accomplished via a solvent with a minimum flash point of 140 degrees Fahrenheit. Solvent is to be massaged into the mastic, and removed via squeegee. Solvent is to be solidified or drummed prior to removal from the containment.

100.4.5 Provide general clean-up of the work area concurrent with the removal of all asbestos-containing building materials. Do not permit the accumulation of debris on work area floors.

100.4.6 Upon completion of asbestos-containing materials, all surfaces within the work area shall be wet-wiped/moped to remove residual accumulated materials. Continue wet-cleaning until all surfaces are free of visible debris.

100.4.7 Contractor will be responsible for removing floor tile and mastic. This includes material underneath walls, if applicable. Contractor will be responsible for maintaining the structural soundness of walls and adjacent area. Contractor should submit a plan for removing material prior to starting work.

Section 100.5-Removal Activities (Gypsum Wallboard/Sheetrock and/or Surfacing)

100.5.1 Prepare work area as previously specified.

100.5.2 Thoroughly wet the asbestos-containing materials to be removed with amended water prior to handling to reduce fiber dispersal into the air. Accomplish wetting with a fine mist of amended water. Spray materials repeatedly during the work process to maintain a continuously wet condition throughout progress of the removal work.

100.5.3 Remove saturated asbestos-containing materials in small sections. Do not allow materials to dry out. As removed, gypsum wallboard is to be placed into two properly labeled 6-mil disposal bags.

100.5.4 Upon completion of sheetrock removal, Contractor is to remove all associated fastening devices. All insulation which may be located in walls and/or ceilings to be removed is to be disposed of as asbestos-contaminated waste.

100.5.5 Provide general clean-up of the work area concurrent with the removal of all asbestos-containing building materials. Do not permit the accumulation of debris on work area floors.

100.5.6 Upon completion of asbestos-containing materials, all surfaces within the work area shall be wet-wiped/moped to remove residual accumulated materials. Continue wet-cleaning until all surfaces are free of visible debris.

Section 100.6-Removal Activities (Linoleum Flooring)

100.6.1 Prepare work area as previously specified.

100.6.2 Thoroughly wet the asbestos-containing materials to be removed with amended water prior to handling or stripping to reduce fiber dispersal into the air. Accomplish wetting with a fine mist of amended water. Spray materials repeatedly during the work process to maintain a continuously wet condition throughout progress of the removal work.

100.6.3 Remove saturated asbestos-containing materials in small sections. Do not allow materials to dry out. Linoleum is to be removed via "razor scraper" from substrate, and may be removed as a component system when floors are to be removed/demolished. Bulk linoleum is to be placed into two properly labeled 6-mil disposal bags, and component systems are to be wrapped in two layers of 6-mil poly sheet, each individually installed.

100.6.4 Provide general clean-up of the work area concurrent with the removal of all asbestos-containing building materials. Do not permit the accumulation of debris on work area floors.

100.6.5 Upon completion of asbestos-containing materials, all surfaces within the work area shall be wet-wiped/moped to remove residual accumulated materials. Continue wet-cleaning until all surfaces are free of visible debris.

Section 100.7-Removal Activities (Exterior Windows/Doors)

100.7.1 Prepare work area as previously specified.

100.7.2 Thoroughly wet the unit and/or frame to be removed prior to stripping or tooling to reduce fiber dispersal into the air. Spray the materials repeatedly during removal to maintain a continuously wet condition.

100.7.3 Remove affected unit and remove intact from the building. Remove residual caulking from window/door perimeter.

100.7.4 Removed frames are to be disposed of as asbestos-contaminated waste.

Section 100.8-Removal Activities (Transite Roof/Exterior Wall Panels)

100.8.1 Prepare work area as previously specified.

100.8.2 Contractor is to install a drop cloth extending from exterior wall base out fifteen feet from the structure to catch debris from roof/wall panel removal.

100.8.3 Wall/roof panels are to be removed in as complete sections as possible and underlying felt paper is to be removed and disposed of as asbestos-contaminated waste. All fastening devices are to be removed.

100.8.4 Wall/roof panels are to be placed into one "onion bag" and then into two properly labeled 6-mil disposal bags.

Section 100.9-Specific Removal Guidelines

Removal is to be conducted in accordance with all applicable TAHPA, NESHAP and OSHA rules and regulations, the enclosed specifications, as well as the following site specific requirements:

100.9.1 Contractor will be allowed to work up to ten hour days, Monday through Friday, and work hours are to be between 7:00 a.m. and 6:00 p.m.. **Work is to be conducted in accordance with schedule provided by Owner.**

100.9.2 The structure is to remain secure during all abatement activities, and security will be the sole responsibility of the Contractor.

Section 100.10-Approved Project Managers

100.10.1 The Asbestos Consultant for this project (Kent Burcham, License # 10-5317) authorizes the following Project Managers to perform visual inspections per TAHPA Rule 295.58 (i)(B); Chris Beltran, Angel Benson, Sage Alexander, Yesmisi Adetomiwa, Mark Scales, Tony Davis, Larry Dinka and Joe Phillips. Joe Phillips is authorized to make any required changes to these specifications.

Section 200 - General Requirements - Asbestos Abatement

RELATED DOCUMENTS:

This section covers General Requirements to be completed during the removal of asbestos-containing building materials. This section in conjunction with Sections 100 and 300 comprise the specifications required for completion of asbestos abatement within the structure(s) covered by these specifications. It is the intent of the Contract Documents to show all of the work necessary to complete the project.

All work is to be completed following these specifications and all applicable Federal, State and local rules and regulations. Where a conflict exists between these specifications and/or applicable rules and regulations, the more stringent shall apply.

200.1 Contractor shall be fully aware of and comply with all current licensing and other requirements for asbestos removal work in the State of Texas and shall obtain any and all licenses and/or pass any and all examinations required by any State or Federal agency for asbestos removal work by contractors in the State of Texas and particularly the new Texas Department of State Health Services rules and regulations. The Contractor shall secure and pay for transportation and disposal of asbestos including permits, government fees, and licenses as necessary for proper execution and completion of the work as applicable at the time of receipt of bids.

200.2 Furnish Burcham Environmental Services, L.L.C. (Consultant), with copies of 10-day notification sent to the Texas Department of State Health Services, via certified mail, return receipt requested. Provide Consultant with notices required by any other local, state or federal agency relating to the asbestos-related activity to be performed at this site.

200.3 Contractor will be required to fully comply with all specified items regardless if they exceed EPA, OSHA, NIOSH, or State regulations. Where not covered or exceeded by these specifications, all EPA, OSHA, NIOSH, and State regulations governing asbestos removal shall apply.

200.4 The Contractor shall have, at all times, in his possession at his office and in view at the jobsite - one copy of OSHA Regulation 1926.1101, and Environmental Protection Agency 40 CFR Part 61, Subpart B:- National Emission Standard for Asbestos, Asbestos Stripping Work Practices and Disposal of Asbestos Waste, as well as copies of all other manuals listed under the Texas Asbestos Health Protection Rules, any other applicable governing regulations, as well as a complete copy of these project abatement specifications. Contractor shall maintain MSDS Sheets for all chemicals used on the job site.

200.5 The Contractor shall notify Burcham Environmental Services, L.L.C. in writing at least three calendar days prior to his arrival at the jobsite to initiate preparatory work. This notification shall include the time and date of Contractor arrival.

200.6 The Contractor shall have a licensed Texas State Asbestos Abatement Supervisor present at each work area at all times that work of any type herein described is in progress, including preparatory work. The supervisor will be required to enter the containment/work area a minimum of 25% of the daily work shift. In addition to the supervisor, the Contractor shall provide one or more foreman at each area at all times that work of any type herein described is in progress who is familiar with and experienced with asbestos abatement, related work, safety procedures, and equipment. It is required that either the supervisor or a foreman be inside each work area or containment at all times.

200.7 All work shall be conducted in strict accordance with all applicable Federal, State and Local regulations, standards and codes governing asbestos abatement and any other trade work done in conjunction with the abatement.

The most recent edition of any relevant regulation, standard, document or code shall be in effect and a copy shall be kept at the job-site for use by the Owner. Where conflict among the requirements exists, the most stringent requirements, as determined by the Owner Representative shall be utilized.

Copies of all standards, regulations, codes and other applicable documents, including this project manual shall be available at the work site in the vicinity of the clean change area of the worker contamination system.

Specific documents shall include, but not necessarily be limited to:

200.8 Occupational Safety and Health Administration (OSHA):

a) Title 29, Code of Federal Regulations Section 1910.1001 - General Industry Standard for Asbestos.

b) Title 29, Code of Federal Regulations Section 1910.134 - General Industry Standard for Respiratory Protection.

c) Title 29, Code of Federal Regulations Section 1926 Construction Industry.

d) Title 29, Code of Federal Regulations Section 1910.2 - Access to Employee Exposure and Medical Records.

e) Title 29, Code of Federal Regulations Section 1910.1200 - Hazard Communication.

200.9 Environmental Protection Agency (EPA):

a) Title 40, Code of Federal Regulations part 61 Subparts A and M (Revised Subpart B) - National Emission Standard for Asbestos.

200.10 Texas Asbestos Health Protection Rules:

a) Texas Civil Statutes, Article 4477-3a, Section 12, most recent edition.

200.11 Contractor will abide by all other applicable laws, rules and regulations, including, but not limited to:

a) EPA, OSHA and TAHPA rules and regulations

200.12 The Contractor supervisor and his foreman must have at a minimum attended an accredited Asbestos Abatement School course of study comprising not less than thirty two (32) hours of asbestos training, and obtained an asbestos abatement contractor's license from the TDSHS . All workers must meet the accreditation requirements of the State of Texas as outlined in Texas regulations, and have obtained an asbestos worker's license.

200.13 The Contractor shall comply with all notification requirements - specified in:

Texas Civil Statutes, Article 4477-3a, providing the Texas Board of Health with the authority to administer licensing and registration for all asbestos abatement activities. For all public or public access buildings, notice will be given not less than ten (10) working days (Monday through Friday), before such activities are to commence, and in the manner required by the Department.

EPA NESHAP Rules (40 CFR §61.156) require a minimum ten (10) day notification involving any demolition or removal of asbestos, if the project involves more than 160 square feet or 260 linear feet of asbestos-containing material. The Texas Department of State Health Services is the duly appointed agent for this notification.

The Contractor shall submit to Burcham Environmental Services, L.L.C., satisfactory proof that required permits (State and local), arrangements for transportation of asbestos-containing waste, as well as the location of the disposal site location have been made. Owner may visit and inspect disposal site before contract is signed if deemed necessary by the Owner.

200.14 The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractors employees, employees of the Subcontractors, Owner employees and representatives, Federal, State and Local inspectors and any other appropriate individuals. The Contractor shall designate his certified project supervisor as the only person, other than representatives of Burcham Environmental Services, L.L.C., and the Owner, who can allow or deny the entrance of all other persons into the work area. Texas Department of State Health Services employees are the only exception to this restriction.

200.15 Emergency planning shall be developed by the Contractor prior to abatement initiation.

Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat-related injury. Written procedures shall be developed and employee training in procedures shall be provided.

Employees shall be trained in evacuation procedures in the event of workplace emergencies.

200.15.1 For non life-threatening situations, employees injured or otherwise incapacitated shall decontaminate following normal procedures with assistance from fellow workers if necessary, before exiting the work place to obtain proper medical treatment.

200.15.2 For life-threatening injury or illness, worker decontamination shall take least priority after measures to stabilize the injured worker, remove him from the workplace and secure proper medical treatment.

200.16 Exits inside critical areas and containment's will have highly visible exit signs placed as necessary to insure rapid exit during a controlled emergency egress, and shall be written in Spanish and English. Exit arrows in a fluorescent paint are to indicate the exit direction, and shall have exit written above the arrows in English and below the arrows in Spanish.

Contractor shall maintain a minimum of two fire extinguishers and an OSHA-approved first aid kit at the work site. In addition, Contractor is required to have on-site one fire extinguisher for each 3,000 sq. ft. of containment area as required by the Texas Asbestos Health Protection Rules.

Telephone numbers of all emergency response agencies shall be prominently posted in the clean change area and equipment room, along with the location of the nearest telephone. Contractor will be required to have on-site a functional telephone, either land-based or cellular.

As required by the Consultant, the Contractor must submit special reports within one day of an occurrence requiring such a special report, with one copy retained for the final document, and copies to others affected by the occurrence.

The reporting of unusual events (occurrence), as previously mentioned, shall occur when an event of an unusual and significant nature occurs at the project site (examples: failure of exhaust ventilation system, rupture of temporary enclosure, accidents involving injury to workers, etc.). Contractor shall prepare and submit a special report, or daily log sheet, listing chain of events, persons affected and participating in, response by contractor personnel, evaluation of results or effects, and similar pertinent information.

When such events are known or predictable in advance, the Contractor is to advise the Consultant Representative in advance, or at the earliest possible time. The reporting of Significant Accidents shall be recorded and documented by data taken at the site, or anywhere else that work is in progress. For this purpose, a Significant Accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of property loss or personal injury.

200.17 There shall be a pre-abatement meeting at the job site on the date first scheduled for containment preparatory work to start. Attending this meeting will be representatives of the Owner, and

Contractor. The Contractor and his Licensed Project Supervisor assigned to this project must attend. The Owner may elect to forego this meeting.

The Contractor shall provide to Burcham Environmental Services, L.L.C., all documents specified to be furnished prior to the beginning of job site work. No pre-start meeting will be held unless all documents are first received. No job site work shall start unless all pre-start meeting items are satisfactory to the Owner. Pre-start meeting may be waived by the Consultant.

At the pre-start meeting, the Contractor shall provide written detailed information as follows:

200.17.1 A list of employees (with their social security number) who will participate in the project, including State of Texas Worker or Supervisor TDSHS License, most recent refresher training course, current medical surveillance report, qualitative fit test, executed notarized Certificates of Worker Release Forms, and assigned responsibilities of each employee during the project.

200.17.2 Work plans required by the Consultant. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan, the location and layout of decontamination areas; the sequencing of asbestos work; the interface of trades involved in the performance of work; work schedule including work shift time, number of employees, date of start and completion including dates of preparatory work, removal, and final clearance dates; methods to be used to assure the safety of building occupants and visitors to the site; disposal plan including location of approved disposal site; and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system, method of removal to prohibit visible emissions in the work area, and packaging of removed asbestos debris. Also set specific times and dates of load outs. The plan must be approved by the Consultant prior to the commencement of work.

200.17.3 Contractor shall provide a daily report showing, by name and duty, each employee who worked on the removal/abatement project and who entered/left, and at what times the controlled containment area.

200.17.4 Preparation of work area and location of decontamination area.

200.17.5 Decontamination procedures for personnel, work area and equipment.

200.17.6 Abatement methods and procedures to be utilized.

200.17.7 Air monitoring procedures (OSHA requirement).

200.17.8 Procedures for handling and disposing of waste materials.

200.17.9 Procedures for final decontamination and cleanup.

200.17.10 Personal protective equipment including respiratory protection and protective clothing.

200.17.11 Procedures for dealing with heat stress and other emergencies.

200.17.12 Electrical requirements for equipment and lighting to be used on the project.

200.18 Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Chemicals used at the jobsite are required to be stored in an area where they will be unlikely to reach their upper explosive thresholds.

Damaged, deteriorating or previously used dirty materials as determined by Burcham Environmental Services, L.L.C., shall not be used and shall be properly removed from the work site.

200.19 A meeting with the Contractor will be held at least weekly to determine work progress and compliance with State, Federal and local requirements, these plans and specifications, and any other governing regulations.

200.20 Definitions:

Abatement: Procedures to control fiber release from asbestos-containing materials. Includes removal, encapsulation, enclosures, repair, demolition and renovation activities.

Accredited or Accreditation: When referring to a person or a laboratory means that such a person or laboratory has met the training, experience, and/or quality control requirements to perform work in accordance with AHERA.

Adequately Wet: Means sufficiently mix or penetrate with liquid to prevent release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

AHERA: Means the Asbestos Hazard Emergency Response Act of 1986 (PL99-519) and rules and regulations enacted by EPA for its implementation.

AHERA Abatement Project Designer: Means a person who develops plans and specifications for the abatement of asbestos. For the purposes of these rules, Abatement Project Designers will be considered to be a category of contractors.

Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways separated by a distance of at least three feet (3') such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination. Each curtain will be constructed of at least 3 layers of polyethylene or polyvinylchloride a minimum of 6-mil thickness. The first sheet will be attached along the top of the doorway, and along one side of the doorway. Each subsequent layer of sheeting will be attached along the top of the doorway and along the opposite side as the previous layer. If not attached along the floor, each will be long enough to drape past the sill and onto the floor, preventing simultaneous opening of more than one doorway. It is not the intent of this equipment to provide an airtight seal, as makeup air will flow from the outside of the decontamination chamber through the chambers to the inside by design.

Air Monitoring: The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos follows the NIOSH Standard Analytical Method for Asbestos in Air, Method 7400.

Air Sampling Professional: The professional contracted or employed by the Building Owner to supervise and/or conduct on-site air monitoring. This individual may also retain a license to function as the Asbestos Project Manager, if qualified. Supervision of air sampling and evaluation of results should be performed by an individual who has completed an EPA approved NIOSH 582 course and has specialized experience in air sampling for asbestos. This individual shall not be affiliated in any way other than through this Contract with the Contractor performing the abatement work.

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

Asbestos: The asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite),

cummingtonite-grunerite (amosite), anthophylite, actinolite, and tremolite.

Asbestos-Containing Material (ACM): Material composed of asbestos of any type and in an amount greater than 1% by weight, either alone or mixed with other fibrous or non-fibrous materials.

Asbestos-Containing Waste Material: Waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

Asbestos Project Manager: The person designated by the Consultant to manage all asbestos work.

Authorized Visitor: The Building Owner, inspecting architect, and any representative of a regulatory or other agency having jurisdiction over the project.

Building Owner: The Owner or his authorized representative. The Owner and Owner Representative for purposes of this project manual are to be considered synonymous.

Category I Nonfriable Asbestos-Containing Material (ACM): Means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one percent asbestos as determined using the method specified in appendix A, Subpart F, 40 CFR part 763, section1, Polarized Light Microscopy.

Category II Nonfriable Asbestos-Containing Material (ACM): Means any material, not included in Category I nonfriable ACM, containing more than one percent asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Clean Room: An uncontaminated area or room which is a part of the worker decontamination enclosure system with provisions for storage of worker's street clothes and clean protective equipment.

Commissioner: Means the Texas Commissioner of Health.

Contractor: The individual and/or business with which the Building Owner contracts to perform the asbestos abatement. For this project, the Contractor will be determined by Austin Independent School District.

Containment: Reference to the prepared work area, when full containment is utilized (as opposed to erecting only critical barriers).

Critical Barrier: A single layer of plastic sheeting over all doorways, windows, fixtures, or any other breaches in walls, floors, ceilings, HVAC vents and registers, etc. used to prevent contamination by asbestos fibers. Critical barriers will consist of securely fastened 6-mil poly sheet, and be installed prior to construction of containment.

Curtained Doorway: A device to allow entry and exit from one room to another while permitting minimal air movement between the rooms, typically constructed by placing three overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of the first and third sheets along one vertical side of the doorway and securing the vertical edge of the second sheet along the opposite vertical side of the doorway. Two of these, one on either side of a small room or a breezeway, constitute an airlock.

Decontamination Enclosure System (Decon): A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers and equipment. The three rooms are the worker decontamination enclosure (adjacent to the containment or critical area), the shower room, and the clean room. All entry and exit to/from the containment will take place through this system.

Demolition: The wrecking or taking out of any load-supporting structural member of a facility together with any handling operations.

Encapsulant: A liquid material which can be applied to asbestos-containing material, controlling the possible release of asbestos fibers from the material, either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

Encapsulation: The application of an encapsulant.

Enclosure: The construction of an air-tight, impermeable barrier around the work area to control the release of asbestos fibers into the air.

EPA: U.S. Environmental Protection Agency
401 M. Street SW
Washington, DC 20460

Equipment Decontamination Enclosure System: That portion of a decontamination enclosure system designed for controlled transfer of materials and equipment into or out of the work areas, typically consisting of a washroom and holding area, which is to have an air filtration machine installed in order maintain negative pressure inside the containment area.

Equipment Room: A contaminated area or room which is part of the worker decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

Facility: Any institutional, commercial or industrial structure, installation or building.

Fixed Object: A piece of equipment or furniture in the work area which cannot be removed from the work area.

Friable Asbestos Material: Means any material that contains asbestos of one percent (1%) or more by weight, which can be crumbled, pulverized or reduced to powder by hand pressure.

Glovebag Technique: A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contained (plasticize) work area. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of 6-mil transparent polyethylene or polyvinylchloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all the asbestos fibers released during the process. All workers who are permitted to use the glovebag technique must be highly trained, experienced and skilled in this method.

HEPA Filter: HEPA means High Efficiency Particulate Absolute. A HEPA air filter is capable of removing airborne or waterborne particles >0.3 microns in diameter with 99.97% efficiency.

HEPA Vacuum: A vacuum system equipped with HEPA filtration.

Holding Area: A chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area. The holding area is comprised of an airlock.

HVAC: Heating, Ventilation and Air Conditioning system.

Loadout: See Waste Transfer Airlock.

Lockdown: Lockdown is the procedure of applying a protective coating or sealant to a surface from which asbestos-containing material has been removed. Its primary function is to control and minimize the amount of airborne asbestos fiber generation that might result from any residual asbestos-containing debris on the substrate. Though the substrate may appear to be clean, minuscule fibers may have become lodged in cracks or crevices that were inaccessible.

Movable Object: A piece of equipment or furniture in the work area which can be removed from the work area.

NESHAP: The National Emission Standard for Hazardous Air Pollutants (40 CFR Part 61).

NIOSH: The National Institute for Occupational Safety and Health
Building J NE - Room 3007
Atlanta, Georgia 30333

On-Site Day: Any day on which work is being done on an asbestos abatement project that would require the services of a licensed asbestos worker, including but not limited to site preparation, establishment of decontamination facilities, removal and encapsulation, lock-down, removal of preparation materials and asbestos waste. This includes non-working days between working days in the same work area.

OSHA: The Occupational Safety and Health Administration
200 Constitution Avenue
Washington, DC 20210

Plasticize: To cover floors walls and ceilings (as required), with plastic sheeting in an approved manner.

Pressure Differential Ventilation System: A portable system equipped with HEPA filtration and capable of maintaining a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas.

Regulated Asbestos-Containing Material (RACM): Means A- friable asbestos material, B- Category I nonfriable ACM that has become friable C- Category I nonfriable ACM that will be or has been subject to sanding, grinding, cutting, or abrading, or D- Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart. Remove means to take out RACM or facility components that contain or are covered with RACM from any facility.

Removal: The stripping of any asbestos-containing materials from surfaces or components of a facility.

Renovation: Altering in any way, one or more facility components. Removal of load-supporting structural members are excluded from this definition.

Replacement: Replacing any material removed from systems with non-asbestos-containing material, in the same manner as sprayback.

Shower Room: A room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold or warm running water controllable at the tap and suitably arranged for complete showering during decontamination.

Staging Area: The holding area or some area near the waste transfer airlock where containerized

asbestos waste has been placed prior to removal from the work area.

Staging Area: Either the holding area or some area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

Structural Member: Any load-supporting member of a facility, such as beams and load-supporting walls or any non-load-supporting walls or any non-load-supporting member, such as ceilings and non-load-supporting walls.

Surfactant: A chemical wetting agent (surface acting agent) added to water to improve penetration.

TDSHS: Texas Department of State Health Services (Formerly Texas Department of Health).

Visible Emissions: Any emissions containing particulate material that are visually detectable without the aid of instruments.

Waste Transfer Airlock (Loadout): A decontamination system utilized for transferring containerized waste from inside to outside the work area.

Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with water and afterwards thoroughly decontaminated or disposed of as asbestos-contaminated waste.

Worker: Any employee of a contractor physically engaged in the abatement of asbestos, or performing a task for the contractor in which direct contact with asbestos is likely.

Work Area: Designated rooms, spaces, or areas of the project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area which has been sealed, plasticized, and equipped with a decontamination enclosure system. A non-contained work area is an isolated or controlled access work area which has not been plasticized nor equipped with a decontamination enclosure system.

Worker Decontamination Enclosure: A decontamination system consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area by airlocks and curtained doorways.

Section 300 -Technical Requirements-Asbestos Abatement

RELATED DOCUMENTS:

This section covers General Requirements to be completed during the removal of asbestos-containing building materials. This section in conjunction with Sections 100 and 200 comprise the specifications required for completion of asbestos abatement within the structure(s) covered by these specifications. It is the intent of the Contract Documents to show all of the work necessary to complete the project.

All work is to be completed following these specifications and all applicable Federal, State and local rules and regulations. Where a conflict exists between these specifications and/or applicable rules and regulations, the more stringent shall apply.

Section 300.1 Project Supervision

300.1.1 A representative of the Project Consultant or the Project Consultant shall provide administrative and supervisory assistance for coordination of work on this project.

The Project Consultant for this project is as follows:

Burcham Environmental Services, L.L.C.
Mr. Kent Burcham, TDSHS Consultant #10-5317
P.O. Box 2496
Wimberley, Texas 78676
(Office) 512-396-5725
(Fax) 512-396-5740

300.1.2 The Project Consultant shall decide the meaning and intent of any portion of the specifications, and of any plans or drawings where same may be found obscure or be in dispute. All work shall be conducted and completed to the satisfaction of the Project Consultant. He shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rate of progress of the work, interpretation of the plans and specifications, and suspension of work.

300.1.3 Provide and use personal respirator equipment. Respirators shall be provided that have been tested and approved by the National Institute of Occupational Safety and Health for use in asbestos contaminated atmospheres.

300.1.4 Spectacle kits and eyeglasses must be provided for employees who wear glasses and who must wear full facepiece respirators.

300.1.5 Full body disposable protective clothing, including head, body and foot coverings recommended by the EPA shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.

300.1.6 Nonskid footwear shall be provided to all abatement workers and will be required to be worn during abatement activities. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

300.1.7 A sufficient supply of disposable mops, rags and sponges for work area decontamination shall be available.

300.1.8 A sufficient supply of scaffolds, ladders, lifts and hand tools (e.g. scrapers, wire cutters, brushes, utility knives, wire saws, etc.) shall be provided as needed.

300.1.9 Sprayers with pumps, capable of providing a maximum of 400 pounds per square inch (psi) at the nozzle tip at a flow rate of one (1) gallon per minute for spraying amended water shall be provided and utilized if necessary. Under no circumstances shall pumps with greater pressure and flow

capability be utilized, or be located at the jobsite.

300.1.10 Rubber dustpans and rubber squeegees shall be provided for cleanup. No brooms will be allowed at the site, and no dry sweeping will be allowed.

300.1.11 A sufficient supply of HEPA filtered vacuum systems shall be available during cleanup activities.

300.1.12 Hand tools equipped with HEPA filtered local exhaust ventilation shall be utilized during the installation of enclosures and supports if there is any need to disturb asbestos-containing material (as an alternative, asbestos material may be partially removed following proper containment procedures prior to the installation of supports and enclosures.)

Section 300.2 Gross Removal - Full Containment

300.2.1 Spray asbestos material with amended water, using an airless-type spray device. Saturate the material sufficiently so that the amended water penetrates the substrate without causing excess dripping. Spray the asbestos and mist the air continuously during removal to maintain a wet condition and to minimize fiber release.

300.2.2 The Contractor shall use techniques, methods, and equipment which will not permit the fiber count during removal operations to exceed .1 fibers/cc on personnel samples during an 8 hr. time weighted average.

300.2.3 Remove all visible material within the containment area such that all surfaces are clean of debris.

300.2.4 Collect the material that has been removed and place it into clear 6-mil asbestos bags correctly imprinted with warning labels required by applicable regulation. Each bag will be wet wiped, properly sealed, and removed from the immediate area to a holding area.

300.2.5 During loadout: Clean the asbestos 6-mil bags with water or wet cleaning techniques in a room separate from the decontamination facility; immediately place into clean clear 6-mil marked bag and seal with as little free air space as possible, twist top of bag, gooseneck, and wrap securely with duct tape; pass bags out for disposal.

300.2.6 Contractor is required to clean up daily all asbestos material removed and to keep this material wet throughout the day until bagged.

300.2.7 Contractor will utilize a solvent for mastic removal (as required) which would not require the workers inside the containment to use a chemical vapor cartridge in addition to their HEPA filters.

Section 300.3 Clean-Up Procedures - Full Containment

300.3.1 Containerize and remove from the work area all visible accumulations of asbestos-containing material and asbestos contaminated debris while maintaining the material wet throughout the duration of the clean-up procedure. Use rubber or plastic tools to pick up or move accumulated waste.

300.3.2 Remove all containerized waste from the work area.

300.3.3 Decontaminate all tools and equipment and remove from containment area when they are no longer needed in the cleaning sequence.

300.3.4 Following complete removal of all asbestos containing materials, a visual inspection by Burcham Environmental Services, L.L.C. (BES), shall be conducted.

300.3.5 Following satisfactory test results of clearance air monitoring, the containment is no longer considered contaminated and all materials, remaining barriers at doors, windows and other openings may be removed and properly disposed of.

Section 300.4 Personnel Protection Requirements

300.4.1 Prior to commencement of abatement activities, all personnel who will be required to enter the work area or handle containerized asbestos materials must have received adequate training, and possess a valid license issued by the Texas Department of State Health Services.

300.4.2 Special on-site training in use of equipment and procedures unique to each jobsite shall be performed as required.

300.4.3 Training in emergency response and evacuation procedures shall be provided.

300.4.4 Workers shall be provided with personally issued, individually identified (marked with waterproof designation) respirators and qualitatively fit-tested for each worker.

300.4.5 Respirators shall be provided that meet the latest mandatory requirements of the Texas Department of State Health Services, OSHA, EPA, NIOSH, or this Project Manual. In addition to meeting the recommendations of current good practices of industrial hygiene, additional protection will be required to meet these specification requirements as follows:

Fiber Concentration/cc with HEPA filtration protection based on an 8-hour Time Weighted Average:

>0.01 to <0.l	Dual Cartridge Half Face APR with HEPA filtration
>0.l to <0.5	Dual Cartridge Full Face or PAPR with HEPA filtration
>0.5	Pressure Demand with Backup Breathing Air.

300.4.6 Backup breathing air must be self-contained emergency egress bottles.

300.4.7 Should personnel sample results exceed 0.5 fiber/cc, in the work area, then Type "C" Pressure Demand respiratory protection shall be utilized. Should airborne fibers within the work area exceed 1.0 fibers/cc, then work must be discontinued until such a time as alternative measures are taken in the abatement process to reduce fiber concentrations to less than 1.0 fibers/cc.

300.4.8 Key points of the respirator program include proper selection of respirator type and size, training of personnel in the proper inspection, donning, use, cleaning and maintenance procedures for the respirator selected including their use limitations and a good fitting and fit testing program to provide proper protection.

300.4.9 Workers shall be given a qualitative fit test in accordance with procedures detailed in the OSHA Standard (29 CFR 1926.1101) for all respirators to be used on this abatement project.

300.4.10 Documentation of adequate respirator fit testing is a Contractor responsibility.

300.4.11 The Contractor will not permit anyone wearing a beard or showing face stubble to don a respirator or enter the work area.

300.4.12 Additional respirators must be available at the work site for authorized visitors who may be required to enter the work area. These respirators are to be sanitized and sealed.

300.4.13 Disposable clothing including head, foot and full body protection shall be provided in sufficient quantities and adequate sizes for all workers and authorized visitors.

300.4.14 Hard hats, protective eyewear, gloves, rubber boots and/or other specialized items shall be provided as needed or determined by BES for workers and authorized visitors.

Section 300.5 Waste Disposal Procedures

300.5.1 Disposal must occur at an authorized site in accordance with regulatory requirements of applicable Federal, State and Local guidelines and regulations, and as agreed to in advance, by the Owner. Application for disposal approval shall be made in writing to the EPA and any other required Federal, State or Local authorities and shall contain the following information.

300.5.1a The type of waste intended to be disposed of and the name of the premises at which it was generated.

300.5.1b The amount of waste designated for disposal, expressed either as cubic yards of containerized materials or lineal feet of individually wrapped materials.

300.5.1c The disposal site to which the waste is to be transported.

300.5.1d The time period over which the waste is expected to be transported to the disposal site.

300.5.1e The name of the waste generator and the person responsible for transporting the waste to the disposal site.

300.5.2 Copies shall be made of all dump receipts, trip tickets, transportation manifests or other documentation of disposal and such copies sent to the Owner prior to final payment. Record keeping format shall utilize a chain of custody form which includes the names and addresses of the Generator (Building Owner), Contractor, and the Disposal Site Operator, as the responsibility for the material changing hands. If a separate hauler is employed, his name, address, telephone number and signature should also appear on the form.

300.5.3 Once drums, bags and wrapped components have been removed from the work area, they shall be loaded into an enclosed truck or transport vehicle for transportation. Truck enclosure shall have a solid bottom, top, sides, front and back. Enclosed asbestos material area shall be locked at all times and protected from vandalism.

300.5.4 The enclosed cargo area of the truck shall be free of debris and lined with 6-mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Tape all enclosure cracks prior to installation of plastic lining. Floor sheeting shall be installed first and extend 12 inches up the sidewalls. Wall sheeting shall be overlapped and taped into place, and ceiling sheeting is be finally be installed.

300.5.5 Drums shall be carefully placed on level surfaces in the cargo area and packed tightly together to prevent shifting and tipping. Large structural components shall be secured to prevent shifting. Bags shall be placed (not thrown) to avoid damage.

300.5.6 Personnel loading asbestos-containing waste shall be protected by opaque disposable clothing including head, body and foot protection and at a minimum, half-face, air purifying, dual cartridge respirators equipped with high efficiency HEPA filters.

300.5.7 Any debris or residue observed on containers or surfaces outside of the work area resulting from cleanup or disposal activities shall be immediately cleaned up using HEPA filtered vacuum equipment and/or wet cleaning techniques as appropriate.

300.5.8 Large metal dumpsters are sometimes used for asbestos waste disposal. These shall have doors or tops that can be closed and locked to prevent vandalism or other disturbance of the bagged asbestos debris. Unbagged material shall not be placed in these containers. Bags shall be placed (not thrown) into these containers to avoid splitting.

300.5.9 Upon reaching the landfill, trucks are to approach the dump location as closely as possible for unloading of the asbestos-containing waste.

300.5.10 Bags, drums and components shall be inspected as they are off-loaded at the disposal site. Material in damaged containers shall be repacked in empty drums or bags as necessary. (Local

requirements may not allow the disposal of asbestos waste in drums. Check with appropriate agency for alternative procedures.)

300.5.11 Waste containers shall be placed on the ground at the disposal site, not pushed or thrown out of trucks (weight of wet material could rupture containers).

300.5.12 Personnel off-loading containers at the disposal site shall wear protective equipment consisting of disposable head, body and foot protection and, at a minimum, half-face, air purifying, dual cartridge respirators equipped with high efficiency HEPA filters.

300.5.13 Following the removal of all containerized waste, the asbestos cargo area shall be decontaminated using HEPA vacuums and/or wet cleaning techniques to ensure that visible debris has been removed. Polyethylene sheeting shall be removed and discarded along with contaminated cleaning materials and protective clothing, in asbestos labeled bags or drums at the disposal site.

300.5.14 If landfill personnel have not been provided with personal protective equipment for the compaction operation by the landfill operator, Contractor shall supply protective clothing and respiratory protection for the duration of this operation.

300.5.15 Wastewater and other liquid waste that contains friable asbestos containing materials that result from an asbestos removal project, an asbestos encapsulation project or an asbestos related maintenance, dismantling or demolition operation may be disposed of by mixing them with solid waste materials and disposing of the mixture in accordance with the requirements of this regulation. Wastewater that cannot be handled in this manner shall be disposed of by one of the following methods.

300.5.15a All shower water waste shall be filtered down to the 1 micron range utilizing filtering mechanisms approved by the appropriate governing regulatory agency. All decontamination shower facilities shall have either a functioning hot water storage capacity of five gallons per on-site worker at 130 degrees Fahrenheit, or a functioning in-line water heater capable of delivering a continuous supply of water at a temperature of 100 degrees Fahrenheit.

300.5.15b Discharge of any other asbestos contaminated wastewater or liquid waste or the use of any other method for the disposal of contaminated liquid wastes shall only be at a location and in a manner specifically approved by the EPA and any other Federal, State or Local authorities in writing.

300.5.16 Asbestos-containing waste material shall be treated, packaged, labeled, transported, and disposed of in accordance with 29 CFR 1926.1101 (OSHA), 40 CFR 61.150 (EPA) and 49 CFR 107 et.al., (DOT).

Section 300.6 Medical/Project Record Keeping

300.6.1 Contractor shall submit documentation from a physician that all employees or agents who may be exposed to airborne asbestos in excess of background levels have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that personnel have received medical monitoring as required in OSHA 29 CFR 1926.1101. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the work place environment (e.g. high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities.

Section 300.7 Air Monitoring - Full Containment

300.7.1 The Contractor shall provide personnel fiber counts utilizing NIOSH Method 7400 "A" counting rules. The person monitoring shall have an Air Monitoring Technicians License issued by the Texas Department of State Health Services, with a current refresher training certificate. In

addition, the air monitoring technician is responsible for managing all monitoring, inspections, and testing required by OSHA regulation 29 CFR 1926.1101. This technician must be on-site during removal activities to calibrate air flow, check pump(s) for malfunction, and accurately record on/off times for sampling accuracy.

300.7.2 BES will provide environmental samples during the length of the project and report daily results and progress. All air monitoring will be conducted in compliance with sampling requirements made by the Texas Department of State Health Services, OSHA, and EPA, and will accommodate any changes required thereby. Air monitoring results provided by BES will serve as the sole basis for any decision relating to abatement procedures and protocols.

Sampling will be full-shift for all samples and be collected as follows:

Background Monitoring

1. Background prevalent level air samples, collected on media for analysis by Phase Contrast Microscopy, will be obtained from representative areas immediately prior to the start of the project start and may be analyzed.

300.7.3 Monitoring During Preparation of the Area for Abatement

1. Any result greater than 0.01 fibers/cc, within the abatement area, will be considered excessive and the Contractor will be required to utilize personal protective equipment. A minimum of dual HEPA-cartridge half mask air purifying respirator and full body disposable coverall including head and foot covering will be necessary.

2. Any result greater than background or 0.01 fibers/cc in adjacent areas will be considered excessive and a complete wipe down of the area will be required.

300.7.4 Contractor will:

300.7.4a Collect/analyze a minimum of 2 or twenty-five percent, whichever is greater, personnel air samples per shift if personnel protective equipment is required under paragraph 1, monitoring during preparation of the area for abatement. Consultant will provide this on-site service.

300.7.5 BES will:

300.7.5a Collect/analyze interior air samples as required by Consultant.

300.7.5b Collect/analyze air samples in adjacent outside areas per shift.

300.7.6 Required Monitoring During Abatement Activity

1. Results within the abatement area will be consistent with the personal protection worn and in accordance with the Texas Department of State Health Services requirements, OSHA, and this project manual.

2. Any result outside the abatement area shall not exceed 0.01 fibers/cc or background levels, whichever is greater. Results greater than 0.01 fibers/cc will require a complete wipe down of the area and retesting to demonstrate that control of the area has been re-established. All abatement work will stop until such a time as control of the adjacent area has been established as demonstrated by air monitoring.

3. Any result inside the containment area greater than .20 fibers/cc will require current activity to stop and to initiate a change in activity yielding lower fiber counts.

300.7.7 Required Clean-Up and Monitoring Upon Completion of Abatement Activity

300.7.7a Standard of cleaning for Final Clearance: Consider work areas and all other decontaminated and cleaned areas clean when:

1. Surfaces are free from dust, dirt, residue, and debris from abatement operations or other activities subordinate to these operations.

2. Level of cleanliness has been approved by Project Manager.

3. Air testing performed by Project Manager indicates that the air in the work area is acceptable, as specified in this section.

300.7.7b Containment and enclosure clearance sequence.

1. Wet clean and HEPA-vacuum all surfaces in the work area.

2. Clean all equipment (excluding that which will be needed for further cleaning phases) used in the work areas and remove from work areas via the equipment decontamination enclosure system.

3. Replace all pre-filters in air filtration devices with clean filters. Clean all air filtration devices.

4. Notify Project Manager for observation to determine completeness of cleaning. Re-clean and continue to clean at Contractor's expertise, areas with visible dust, dirt or debris.

5. Once Project Manager has accepted the area as clean, Project Manager will perform air testing using NIOSH 7400 Method. If airborne fiber concentrations are greater than 0.03 f/cc, a three hour waiting period and subsequent cleaning will be required. Project Manager will perform additional testing, at Contractor's expense, and sequence will continue until airborne fiber concentrations of 0.03 f/cc or less are achieved. This pre-encapsulation air testing may be waived in the event that all work area air samples collected during final cleaning stages indicate airborne fiber concentrations of 0.03 f/cc or less.

6. Following the cleaning sequence, when the air fiber count is 0.03 f/cc or less, and prior to removing first layer of plastic sheeting, apply one coat of sealant to all surfaces. Apply sealant as follows:

   A. Misting, spraying, and pumping equipment, as recommended by the encapsulant material's manufacturer, shall be used.

   B. Encapsulant shall be applied by procedures as recommended by the manufacturer's written instructions and shall be the one approved for this work.

7. After sealant is applied to all surfaces in the work area, allow a minimum two hour drying period. Additional drying time may be required.

8. Notify Project Manager for observation to determine completeness of cleaning.

9. PCM Final Clearance Testing as follows:

   A. Project Manager will test for the final air clearance levels once the work area is observed by the Project Manager to be visually decontaminated. Final clearance air testing shall be performed using aggressive sampling techniques.

B. At least three (3) samples per work area will be collected and analyzed. The area will be considered clean if all samples indicate airborne fiber concentrations are 0.01 f/cc or ambient prevalent level, whichever is greater, calculated at the 95-percent upper confident limit (UCL), or less.

C. Re-clean, and continue to clean at Contractor's expense, areas which do not comply with the specified final clearance level. Contractor shall bear the cost of all follow-up tests necessitated by the failure of the air tests to meet the specified final clearance level.

10. In the event that TEM final clearance testing is employed, the area will be considered clean if all samples indicate asbestos structure densities of 70 structures per square millimeter or less.

11. Upon notification from the Project Manager that final clearance samples indicate acceptable airborne levels, dismantle work area containment and thoroughly HEPA-vacuum and wet clean immediate areas.

12. Dispose of debris from removal operation, used cleaning materials, unsalvageable materials used for sturdy barriers, and any other remaining materials. Consider the materials to be contaminated, and dispose of accordingly.

All samples must meet specified clearance levels for the area being tested to be considered clean.

1. Final clearance air samples will be of at least 1250 liters of air, collected at a flow rate up to 14 liters per minute.

2. Visual observations will be made by the Project Manager after final clean-up and de-mobilization to determine the presence of visible dust, dirt, debris and abatement refuse indicative of improper cleaning and decontamination procedures.

3. Contractor shall perform additional cleaning at no additional expense to Owner if, in the opinion of the Project Manager, based upon the final visual observation, previous clean-up operations were determined to be inadequate.

300.7.8 <u>Contractor will:</u>

300.7.8a Monitor at least 25% of all abatement personnel on a daily (full shift) basis. Rotate samples such that workers are monitored periodically. Pumps should be worn by at least one worker removing and at least one worker bagging debris.

300.7.9 <u>BES will, or as required by Consultant:</u>

300.7.9a Collect/analyze area samples within the containment area during each shift.

300.7.9b Collect/analyze a sample in the exhaust of pressure differential devices per shift.

300.7.9c Collect/analyze a sample within the clean room per shift.

300.7.9d Collect/analyze 1 area sample in each adjacent area (outside each critical barrier) each shift.

300.7.8e Collect/analyze 1 area sample outside the loadout facility, per shift, while it is in use.

Jose I. Guerra, Inc.
Consulting Engineers
Structural • Civil • Mechanical • Electrical

Engineering Excellence Since 1973

ADDENDUM TWO

DATE: November 14, 2019

PROJECT: **HVAC & Civil Improvements at Cook ES** 20CSP079
Austin Independent School District

AISD PROJECT No. 190016-COOK

OWNER: Austin Independent School District

TO: All Contract Bidders to Who Plans and Specifications Have Been Issued

This Addendum forms a part of Contract and clarifies, corrects or modifies the original Bid Documents for **AISD Cook Elementary School Renovations Bid Set dated October 15, 2019.**

Acknowledge receipt of this addendum in the space provided in Section C.4 of the Proposal Form. Failure to do so may subject offer or to disqualification.

All items in the drawings and specifications referenced herein shall be supplemented and modified as follows:

DRAWINGS

Mechanical

Item 1. **Sheet M101 – (Re-Issued)**

A. Revised keyed note 1 to read: "Install new fan coil units suspended from structure above. Provide & install new duct transitions as required to connect existing ductwork to fan coil units. Provide & install new hydronic piping & condensate piping transitions as required to connect existing piping to fan coil units. Insulate all exposed ductwork & piping to the fan coil units."

Item 2. **Sheet M102 – (Re-Issued)**

A. Revised keyed note 1 to read: "Install new fan coil units suspended from structure above. Provide & install new duct transitions as required to connect existing ductwork to fan coil units. Provide & install new hydronic piping & condensate piping transitions as required to connect existing piping to fan coil units. Insulate all exposed ductwork & piping to the fan coil units."

Electrical

Item 1. **Sheet E101 – (Re-Issued)**

A. Added Fire Alarm scope as indicated.

END OF ADDENDUM TWO