

PROJECT MANUAL

For

ASBESTOS-CONTAINING MATERIALS ABATEMENT

PARACHUTE AND DINGHY SHOP BUILDING
703 Airline Drive, TSTC Campus
Texas State Technical College (TSTC)
WACO, TEXAS 76705

BENAS PROJECT No. BA-15-1199

VOLUME 1 OF 1

ENVIRONMENTAL CONSULTANTS

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LEAD-BASED PAINT CONSULTANTS

IN-DOOR AIR QUALITY CONSULTANTS

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05-01-2015

**ASBESTOS ABATEMENT PROJECT DESIGN
& TECHNICAL SPECIFICATIONS**

FOR

PARACHUTE AND DINGHY SHOP BUILDING

**703 Airline Drive, TSTC Campus
TEXAS STATE TECHNICAL COLLEGE (TSTC)
WACO, TEXAS 76705**

PREPARED FOR

TEXAS STATE TECHNICAL COLLEGE (TSTC)

**PHYSICAL PLANT DEPARTMENT
3801 Campus Drive
WACO, TEXAS 76705**

ATTENTION: MR. MIKE RATLIFF, PROJECT MANAGER

PREPARED BY

**EPHRAIM N. OKOTCHA "EO"
INDIVIDUAL ASBESTOS CONSULTANT**

TDSHS LICENSE NUMBER 10-5399

**BENAS ENVIRONMENTAL SERVICES, INC.
ENVIRONMENTAL CONSULTANTS**

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Project Drawings

Results of Bulk Samples Analysis by Polarized Light Microscopy
(PLM)

EXECUTIVE SUMMARY

Texas State Technical College (TSTC) is seeking to remove asbestos-containing building materials (ACM) as specified. The project involves the complete removal of all later detailed non-friable ACM Transite Cement Siding Fiber Boards located throughout the Interior and Exterior surfaces of the Parachute Tower; and Floor Tiles with Mastic located throughout the interior floors of the Parachute and Dinghy Shop Building. This building is located at 703 Airline Drive on the Campus of the Texas State Technical College (TSTC) in the City of Waco, McLennan County, Texas.

The areas for specific asbestos abatement are described in the Scope of Work and the drawings contained in these technical specifications. The schedule for the execution of the removal project is contained in the notifications that shall be filed with the Texas Department of State

Exhibit F

Health Services (**TDSHS**). The project shall be completed as per the above reference notifications and these specifications. **The abatement project shall be conducted according to start and stop dates contained in the notifications to the TDSHS.** It should be stated that this building is currently scheduled for renovation.

This project is considered to be asbestos abatement prior to a building renovation to meet TDSHS notification requirements. Proper interpretation of the current National Emission Standards for Hazardous Air Pollutants (**NESHAP**) regulations as well as current Texas Asbestos Health Protection Rules (**TAHPR**) must be observed for this distinction. **BENAS Environmental Services, Inc.** from Coppell, Texas, shall be the Owner's representative (**consultant**) on this project. The testing laboratory (**industrial hygiene services**) selected by the Owner is also **BENAS Environmental Services, Inc.**

Exhibit F
INVITATION TO BID

SEALED BIDS FOR ASBESTOS-CONTAINING MATERIALS ABATEMENT AT THE:

PARACHUTE AND DINGHY SHOP BUILDING LOCATED ON THE CAMPUS OF
TEXAS STATE TECHNICAL COLLEGE (TSTC)
3801 CAMPUS DRIVE
WACO, TEXAS 76705

BENAS PROJECT NUMBER: BA-15-1199

PROPOSALS SHALL BE ACCEPTED ON OR BEFORE **2:00 P.M., WEDNESDAY, MAY 27, 2015.** ANY BIDS SUBMITTED AFTER THE STATED TIME SHALL BE RETURNED UNOPENED. RECORDING TIME SHALL BE BY THE CLOCK IN THE OFFICE OF PHYSICAL PLANT DEPARTMENT AT THE TEXAS STATE TECHNICAL COLLEGE **(TSTC)** AND SHALL BE.

PLAINLY MARKED ON THE OUTSIDE OF THE SEALED ENVELOPE:

BID FOR ASBESTOS-CONTAINING MATERIALS ABATEMENT AT THE:
PARACHUTE AND DINGHY SHOP BUILDING
703 AIRLINE DRIVE, TSTC CAMPUS
WACO, TEXAS 76705

BENAS PROJECT NUMBER: BA-15-1199

A PRE-BID WALK-THROUGH OF THE FACILITY AND THE ABATEMENT WORK AREAS IS MANDATORY FOR ALL INTERESTED BIDDERS. THIS WALK-THROUGH SHALL BE CONDUCTED ON **WEDNESDAY, MAY 20, 2015, AT 10:00 A.M. PROMPT.** FOR INFORMATION REGARDING THIS PROJECT AND ANY CLARIFICATION, PLEASE CONTACT EPHRAIM N. OKOTCHA "EO" WITH BENAS. VERIFICATION OF SITE CONDITIONS AND ACM QUANTITIES ARE THE RESPONSIBILITIES OF THE BIDDER.

BENAS ENVIRONMENTAL SERVICES, INC.
P. O. Box 739
COPPELL, TEXAS 75019
PHONE: (972) 393-0128
FAX: (972) 393-0793

BENAS PROJECT NUMBER BA-15-1199

ATTENTION: MR. EPHRAIM N. OKOTCHA ("EO"), PROJECT CONSULTANT

BID PREPARATION SHALL BE IN ACCORDANCE WITH THE INSTRUCTIONS TO BIDDERS FOUND IN THIS BID SOLICITATION. BIDDERS SHALL BE PRE-QUALIFIED AS PER RESTRICTIONS IN THE SOLICITATION TO INCLUDE YEARS IN ASBESTOS ABATEMENT OPERATIONS, REFERENCES AND NUMBER AND SIZE OF PROJECTS COMPLETED. THE OWNER RESERVES THE RIGHT TO WAIVE ANY AND ALL IRREGULARITIES, AND TO REJECT ANY OR ALL BIDS.

ANY CLAIMS FOR COST INCURRED BY ANY BIDDER IN THE PREPARATION OF ANY PART OF THEIR BID FOR THIS PROJECT WILL NOT BE ENTERTAINED OR HONORED FOR REIMBURSEMENT BY THE OWNER.

DATE OF ISSUANCE: May 1, 2015.

Exhibit F
INSTRUCTIONS TO BIDDERS

1.1 GENERAL REQUIREMENTS

1.1.1 CONSIDERATION: TO BE CONSIDERED, BIDS MUST BE MADE IN ACCORDANCE WITH THESE INSTRUCTIONS TO BIDDERS. FAILURE TO COMPLY WITH THESE INSTRUCTIONS OR ANY QUESTIONS, OR ANY REQUIREMENTS OF THE BIDDING DOCUMENTS MAY BE CAUSE FOR REJECTION OF THE BID.

1.1.2 INTERPRETATIONS: SHOULD A BIDDER FIND DISCREPANCIES IN OR OMISSIONS FROM THE SPECIFICATIONS OR DRAWINGS, OR BE IN DOUBT AS TO THEIR MEANING, HE SHALL IMMEDIATELY NOTIFY THE CONSULTANT, BENAS ENVIRONMENTAL SERVICES, INC., WHO WILL PROMPTLY ISSUE AN ADDENDUM TO THE BID REQUIREMENTS AND MAKE AVAILABLE TO ALL KNOWN SPECIFICATION HOLDERS. NEITHER THE OWNER NOR THE CONSULTANT SHALL BE RESPONSIBLE FOR ANY ORAL INSTRUCTIONS. THE CONSULTANT DOES NOT WARRANT THE DRAWINGS AND QUANTITIES TO BE TOTALLY ACCURATE, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE ACCURACY OF THE DRAWINGS AND QUANTITIES PRIOR TO BID OPENING.

THE CONTRACTOR SHALL NOTIFY THE CONSULTANT AT LEAST TWO DAYS PRIOR TO THE BID OPENING IF ANY DISCREPANCIES IN MEASURED QUANTITIES LARGE ENOUGH TO AFFECT THE BID ARE DISCOVERED SO THAT APPROPRIATE ADDENDA MAY BE ISSUED. FAILURE TO VERIFY THE CONSULTANT'S ESTIMATES PRIOR TO THE BID OPENING SHALL IN NO WAY RELIEVE THE CONTRACTOR THE OBLIGATION TO COMPLETE THE PROJECT AT THE ORIGINAL AND AGREED CONTRACT PRICE.

1.1.3 ADDENDA: ANY ADDENDA TO THE SPECIFICATIONS OR DRAWINGS ISSUED BEFORE THE BID OPENING SHALL BECOME A PART OF THE CONTRACT. FAILURE TO ACKNOWLEDGE ALL ADDENDA WITH THE BID SHALL BE CONSIDERED AS JUST GROUNDS FOR REJECTION OF THE BID.

1.2 PREPARATION OF BID

1.2.1 CONDITIONS OF WORK: EACH BIDDER SHALL INFORM HIMSELF/HERSELF OF THE CONDITIONS RELATING TO CONSTRUCTION OF THE PROJECT AND EMPLOYMENT OF LABOR THEREON. A PRE-BID CONFERENCE AND WALK THROUGH IS MANDATORY FOR THIS PROJECT. IT IS ALSO RECOMMENDED THAT ALL INTERESTED BIDDERS VISIT THE SITE TO ASSURE THEMSELVES OF QUANTITIES AND SITE CONDITIONS. INTERESTED BIDDERS SHOULD CONTACT **MR. MIKE RATLIFF AT (254) 867-3703** FOR ACCESS TO THIS BUILDING. DETAILED INFORMATION AND CLARIFICATION OF THE SCOPE OF WORK SHOULD BE DIRECTED TO "EO" WITH BENAS ENVIRONMENTAL SERVICES, INC. THIS BUILDING IS AVAILABLE FOR VIEWING BEGINNING **MAY 12, 2015 THROUGH MAY 14, 2015.**

FAILURE OF THE CONTRACTOR TO INFORM HIMSELF OF THE CONDITIONS OF WORK SHALL NOT RELIEVE A SUCCESSFUL BIDDER OF HIS OBLIGATION TO FURNISH ALL MATERIALS AND LABOR NECESSARY TO CARRY OUT THE PROVISIONS OF THE CONTRACT. INsofar AS POSSIBLE, THE CONTRACTOR SHALL EMPLOY METHODS OR MEANS TO CAUSE NEITHER INTERRUPTION OF NOR INTERFERENCE WITH THE WORK OF OTHER CONTRACTORS, OWNER, OTHER CAMPUS USERS AND THE RESIDENTS.

ALL BIDDERS SHALL BE EXPERIENCED WITH BUILDING MATERIALS USED LOCALLY AND SHALL

Exhibit F

FAMILIARIZE THEMSELVES WITH THE MATERIALS TO BE REMOVED ON THIS PROJECT (INCLUDING THEIR THICKNESS, QUANTITY, SUBSTRATE TYPE, TYPE OF PROTECTIVE COATING, ETC.). ANY SPECIAL SURFACTANT, WETTING OR REMOVAL TECHNIQUES REQUIRED BY THESE MATERIALS SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

- 1.2.2 LAWS AND REGULATIONS: ALL APPLICABLE FEDERAL AND STATE LAWS, MUNICIPAL ORDINANCES, AND THE RULES AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION OVER CONSTRUCTION OF THE PROJECT ESPECIALLY THE TEXAS DEPARTMENT OF STATE HEALTH SERVICES SHALL APPLY TO THE CONTRACT.
- 1.2.3 APPROVED EQUAL: THE USE OF BRAND NAMES WITHIN THESE SPECIFICATIONS IS TO INDICATE THE GENERAL QUALITY OF MATERIALS AND EQUIPMENT TO BE USED. WHERE BRAND NAMES ARE USED, THE TERM "OR APPROVED EQUAL" SHALL BE INCLUDED. THE CONTRACTOR SHALL PROVIDE SUFFICIENT PRODUCT DATA TO THE CONSULTANT IN ORDER TO DETERMINE WHETHER THE PROPOSED PRODUCT IS OF COMPARABLE QUALITY AS THAT SPECIFIED.
- 1.2.4 SUBMITTALS: BIDDERS SHALL PROVIDE PRE-CONTRACT SUBMITTALS AS REQUIRED IN THESE CONTRACT DOCUMENTS AND THESE SPECIFICATIONS.
- 1.2.5 LICENSING: A CONTRACT WILL NOT BE AWARDED TO A BIDDER WHOSE BID IS IN CONFLICT WITH THE STATE LICENSING LAWS. THE BIDDERS STATE LICENSE NUMBER AND DATE SHOULD APPEAR ON THE OUTSIDE OF THE BID ENVELOPE.
- 1.2.6 ROYALTIES AND PATENTS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ROYALTIES AND LICENSE FEES. HE SHALL DEFEND ALL SUITS OR CLAIMS FOR INFRINGEMENT OF ANY PATENT RIGHTS AND SHALL HOLD THE OWNER AND CONSULTANT HARMLESS FROM LOSS, INCLUDING ATTORNEY'S FEES, ON ACCOUNT THEREOF.

1.3 BIDDING

- 1.3.1 METHOD: BIDS RECEIVED ON GENERAL CONTRACT SHALL INCLUDE ALL ASBESTOS ABATEMENT WORK, INCLUDING ASSOCIATED TEMPORARY MECHANICAL AND ELECTRICAL CONSTRUCTION AS SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN.
- 1.3.2 SUBCONTRACTS: THE BIDDER IS SPECIFICALLY ADVISED THAT ANY PERSONS, FIRMS OR OTHER PARTIES TO WHOM IT IS PROPOSED TO AWARD A SUBCONTRACT UNDER THIS CONTRACT SHALL BE NAMED ON A LIST OF SUBCONTRACTORS FORM, AND SHALL BE ACCEPTABLE TO THE OWNER AND THE CONSULTANT.

THE BID IS MADE IN GOOD FAITH, AND THAT THE BIDDER SHALL EXECUTE THE CONTRACT AND FURNISH THE BONDS AS REQUIRED IN THE SPECIFICATIONS AND CONTRACT DOCUMENTS WITHIN TEN (10) DAYS AFTER RECEIPT OF NOTICE OF ACCEPTANCE OF HIS BID.

FAILURE OR REFUSAL BY THE BIDDER TO EXECUTE AND DELIVER THE CONTRACT AND BONDS WITHIN TEN (10) DAYS AFTER RECEIVING NOTICE OF ACCEPTANCE OF HIS BID, SHALL RESULT IN FORFEITURE TO THE OWNER THE SECURITY DEPOSITED AS LIQUIDATED DAMAGES, NOT AS A PENALTY.

THE CONTRACTOR AGREES TO COMMENCE WORK UNDER THE CONTRACT UPON RECEIPT OF

Exhibit F

A WRITTEN "NOTICE TO PROCEED" FROM THE OWNER OR CONSULTANT. BID SECURITY OF THE TWO LOWEST RESPONSIVE BIDDERS SHALL BE RETAINED UNTIL AFTER THE CONTRACT HAS BEEN AWARDED AND THE BONDS RECEIVED BY THE OWNER BUT IN NO EVENT LONGER **THAN SEVENTY (70) DAYS**. BID SECURITY OF ALL EXCEPT THE TWO LOWEST RESPONSIVE BIDDERS SHALL BE RETURNED WITHIN TEN (10) DAYS AFTER OPENING THE BIDS.

1.4 BIDS

- 1.4.1 WITHDRAWING BIDS: ONCE THE BID IS SUBMITTED, IT MAY BE WITHDRAWN BEFORE THE SCHEDULED OPENING TIME ONLY UPON RECEIPT OF A WRITTEN REQUEST SIGNED BY PERSON LEGALLY AUTHORIZED TO BIND THE BIDDER TO THE CONTRACT. IF A BID IS WITHDRAWN, IT MAY NOT BE RESUBMITTED. BIDS RECEIVED AFTER THE TIME AND DATE FOR RECEIPT OF BIDS WILL BE RETURNED UNOPENED.
- 1.4.2 MODIFYING BIDS: MODIFICATIONS TO THE BID MAY BE MADE AS "ADD" OR "DEDUCT" ONLY, AND MUST BE IN WRITING SIGNED BY A PERSON LEGALLY AUTHORIZED TO BIND THE BIDDER TO THE CONTRACT. ORAL, TELEPHONE OR TELEGRAPHIC MODIFICATIONS TO THE BID WILL NOT BE CONSIDERED. AFTER THE TIME AND DATE DESIGNATED FOR THE RECEIPT OF BIDS, A BID MAY NOT BE MODIFIED, WITHDRAWN OR CANCELED BY THE BIDDER DURING THE TIME PERIOD STIPULATED IN BID FORM.
- 1.4.3 OPENING BIDS: ALL BIDS FILED WITH THE OWNER WILL NOT BE OPENED AT THE BID OPENING TIME, AND SHALL THEREAFTER REMAIN ON FILE WITH THE OWNER.
- 1.4.4 IRREGULAR BIDS: BIDS SHALL BE CONSIDERED IRREGULAR IF THEY SHOW ANY OMISSIONS, ALTERATIONS OF FORM, ADDITIONS OR CONDITIONS NOT CALLED FOR, OR IRREGULARITIES OF ANY KIND. HOWEVER, THE OWNER RESERVES THE RIGHT TO WAIVE ANY IRREGULARITIES AND TO MAKE THE AWARD IN HIS BEST INTEREST.
- 1.4.5 REJECTION OF BIDS: THE OWNER RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS.
- 1.4.6 DISQUALIFICATION OF BIDDERS: BIDDERS SHALL BE DISQUALIFIED AND THEIR BIDS NOT CONSIDERED FOR ANY OF THE FOLLOWING SPECIFIC REASONS:
REASONABLE GROUNDS FOR BELIEVING THAT ANY BIDDER IS INTERESTED IN MORE THAN ONE BID FOR THE WORK SPECIFIED
THE BIDDER BEING INVOLVED IN ANY LITIGATION AGAINST THE OWNER
THE BIDDER IS IN ARREARS ON ANY EXISTING CONTRACT OR HAVING DEFAULTED ON A PREVIOUS CONTRACT
LACK OF COMPETENCY AND/OR CONCERN IN REGARD TO THE HEALTH HAZARDS AS REVEALED BY THE PRE-BID SUBMITTALS, OR OMISSION OF THE REQUIRED SUBMITTALS
THE BIDDER HAVING A HISTORY OF CITATIONS OR JOB STOPPAGE BY REGULATORY AGENCIES FOR NONCOMPLIANCE

1.5 CONTRACT

Exhibit F

- 1.5.1 AWARD OF CONTRACT: IT IS THE OWNERS INTENT TO AWARD A CONTRACT BASED UPON THE LOWEST EVALUATED RESPONSIVE BID SUBMITTED BY A RESPONSIBLE BIDDER.
- 1.5.2 SECURITY FOR FAITHFUL PERFORMANCE: **THE SUCCESSFUL BIDDER SHALL FURNISH A PERFORMANCE BOND, AND A LABOR AND MATERIAL BOND IN THE AMOUNTS OF ONE HUNDRED PERCENT (100%) OF THE CONTRACT SUM, IF AND ONLY IF THE BID SUM IS GREATER THAN \$100,000.** THESE BONDS ARE SECURITY FOR FAITHFUL PERFORMANCE OF THIS CONTRACT AND FOR THE PAYMENT OF ALL PERSONS PERFORMING LABOR AND FURNISHING MATERIALS IN CONNECTION WITH THE PROJECT UNDER THIS CONTRACT. THE BONDS SHALL BE EXECUTED ON FORMS SUITABLE TO THE OWNER. THE SURETY COMPANY ISSUING THE BONDS SHALL BE LICENSED TO DO BUSINESS IN THE STATE OF TEXAS.
- THE ATTORNEY-IN-FACT THAT EXECUTES THE BONDS ON BEHALF OF THE SURETY SHALL BE A RESIDENT OF THE STATE OF TEXAS, AND SHALL ATTACH TO THE BONDS A CERTIFIED AND CURRENT COPY OF HIS POWER OF ATTORNEY.
- 1.5.3 FORM OF AGREEMENT: THE AGREEMENT FOR THE WORK SHALL BE WRITTEN ON THE FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR.
- 1.5.4 EXECUTION OF THE CONTRACT: THE SUCCESSFUL BIDDER SHALL FURNISH THE BONDS, IF NECESSARY. **THE BIDDER SHALL ALSO SUBMIT REQUIRED INSURANCE CERTIFICATES IN THE MINIMUM OF \$1,000,000.00,** SIGN THE FORM OF AGREEMENT, AND DELIVER THE DOCUMENTS TO THE OWNER WITHIN FIVE (5) DAYS AFTER PRESENTATION OF THE FORM OF AGREEMENT. TEXAS STATE TECHNICAL COLLEGE (TSTC) SHALL BE NAMED ON THE CERTIFICATE OF INSURANCE AS ADDITIONAL INSURED. THE SUCCESSFUL CONTRACTOR SHALL PROVIDE PROOF OF TEXAS WORKERS' COMPENSATION INSURANCE IN THE AMOUNT EQUAL OR GREATER THAN THE STATE OF TEXAS MINIMUM REQUIREMENT FOR THE NUMBER OF WORKERS ON SITE.
- 1.5.5 HOURS OF OPERATION: THE SUCCESSFUL BIDDER SHALL AGREE TO PERFORM ALL ACTIVITIES BETWEEN THE HOURS OF 8:00 A.M. AND 5:00 P.M. THE START DATE FOR THIS PROJECT SHALL BE IN COMPLIANCE WITH THE NOTIFICATION SCHEDULES FILED WITH THE TEXAS DEPARTMENT OF STATE HEALTH SERVICES. THE TOTAL HOURS NOT TO EXCEED EIGHT (8) HOURS PER DAY, UNLESS REQUESTED OR REQUIRED TO DO SO BY THE OWNER AND AGREED TO BY THE CONSULTANT.
- 1.5.6 TIME OF COMPLETION: THE SUCCESSFUL BIDDER SHALL AGREE TO COMMENCE WORK ON THE DATE SPECIFIED IN A WRITTEN "NOTICE TO PROCEED" AND TO FULLY COMPLETE THE PROJECT WITHIN THE CALENDAR DAYS INDICATED ON THE FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR. THE COMPLETE DATE SHALL BE IN COMPLIANCE WITH THE STOP DATE ON THE NOTIFICATION TO THE TEXAS DEPARTMENT OF STATE HEALTH SERVICES.

END OF SECTION

TECHNICAL SPECIFICATIONS

SPECIAL CONDITIONS:

This Building is scheduled to be renovated. The chosen asbestos abatement contractor shall comply with all federal, state and local regulations and rules which guide asbestos abatement in the State of Texas including but not limited to those detailed in these technical specifications. The following is required of the chosen asbestos abatement contractor for this project:

Waste Handling and Disposal

1. The chosen abatement contractor shall provide a "Closed Metal **(Steel)** Disposal Dumpster" on site everyday throughout the duration of the abatement project. This dumpster must be locked at the end of each work day such that there is no public access to asbestos waste stored in the dumpster.
2. Each dumpster shall be full prior to pick up for disposal by the abatement contractor or a subcontractor retained by the abatement contractor.
3. All disposal manifests shall be type-written such that all entries are legible through all copies of the waste disposal manifest document.
4. The manifest for each load of waste shall be signed by the Consultant or the On-Site Project Manager retained by the Consultant in behalf of the Owner, prior to leaving the job site.
5. One copy of the document **(equivalent of the Green Copy)** shall remain with the Consultant or Project Manager prior to departure of the truck dumpster from the site.
6. Each load of waste that leaves the job site shall be taken straight to the approved asbestos disposal landfill selected by the abatement contractor as documented in the Notifications.
7. A copy of the receipt from the disposal landfill shall be returned to the Consultant or Project Manager next day immediately following disposal. No subsequent load of waste shall leave the job site or TSTC premises without the receipt of the previous load which documented proper disposal.

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8. All original copies of the waste manifests generated during this project shall be sent to the Owner Five Working Days following last load of waste removed from the facility.
9. Failure to follow the above stipulated procedures shall be grounds for work stoppage and possible contract termination.

Construction of Interior Tower Scaffolding:

The selected abatement contractor shall construct scaffolding in the interior of the building where the parachute tower is located. Scaffolding shall be constructed for the four walls from the bottom of the interior tower to the top built-up roof. The scaffolding described above shall be constructed at one time to cover all four walls. The contractor shall not construct the scaffolding one wall at a time to minimize delays in the work schedule and conduct; avoid lapses in the notifications filed with the TDSHS for this abatement project; and comply with all necessary and OSHA mandatory rules and regulations. **No Exceptions.**

All workers utilized for the construction of the interior scaffolding, as well as the licensed asbestos abatement workers shall don-on complete harnesses, steel-tow boots, hard hats and safety eye-glasses throughout the construction and removal operations in compliance with OSHA regulations. Also, all workers utilized for the removal operations on the exterior of the building shall don-on full-body harnesses, hard hats, steel-tow boots and safety eye-glasses whether or not the contractor utilize scaffolding or boom-lifts for the exterior removal work. **No Exceptions.**

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OSHA Personal Compliance Monitoring:

The selected abatement contractor shall conduct Occupational Safety and Health Administration (**OSHA**) Personal Compliance air monitoring on at least 10% of his workers everyday, or a minimum of two samples per shift. If more than one crew

Exhibit F

or shift is performed simultaneously, minimum of 10% of the workers in each crew or shift shall be monitored per OSHA regulations and these specifications.

All abatement activities in this building can be conducted with the Half Face Negative Pressure Demand Respirators. Half-face negative pressure demand respirators are permitted if fiber concentration inside the containment is below the OSHA permissible exposure limits **(PEL)** for this abatement project.

The security of the building under construction shall be the responsibility of the abatement contractor throughout the duration of the abatement project. The contractor shall secure the building at the end of each work shift or day. Missing or stolen of on-site equipment, including those of the abatement contractor, the consultant, sub-contractors or anyone else authorized to be on site, is not the responsibility of the building owner/manager, or the consultant. Should it be necessary, the contractor shall conduct a fire-watch each and every day throughout the duration of the abatement project.

Personnel and visitors' safety during this abatement project shall be the responsibility of the abatement contractor. The contractor shall ensure that all persons, including all workers, the personnel of the Owner, consultant and/or air monitoring firm and visitors entering or leaving the work areas during this project are safe. The contractor shall provide on-site security throughout the duration of this project in compliance with these specifications and the contract documents.

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All vehicles including those of the contractor's personnel operated within the premises of the Texas State Technical College property shall be insured in accordance with the State of Texas Department of Public Safety regulations. Proof of liability insurance and driver license shall be produced at the request of any authorized staff, especially those overseeing this project. **No Exceptions.**

The use of foul language(s) of any type, in any setting is forbidden of all persons within the premises of the Texas State Technical College.

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Those affected include the abatement contractor, his/her personnel, and/or subcontractor(s) retained by the abatement contractor, any visitors of the contractor and/or subcontractor(s). **No Exceptions.**

It is absolutely the responsibility of the abatement contractor to verify both quantities and/or assumed quantities of the ACM in designated locations in and/at the building, and site conditions prior to bidding. Failure to verify all quantities and site conditions SHALL NOT relieve the contractor the obligation to complete this project as, and in the manner specified.

Ephraim N. Okotcha "EO", License No: 10-5399_____

END OF SECTION

1.0 SCOPE OF WORK

The following is a "*Scope of Work*" to be performed for this project:

Parachute and Dinghy Shop Building:

- 1 Removal and proper disposal of **approximately 6,400 square feet of non-friable ACM Transite Cement Siding Fiber Boards** located throughout the Interior surfaces of the Parachute Tower inside the Parachute and Dinghy Shop Building. This portion of the abatement project shall be performed inside a full containment work area enclosure by wet methods with full negative pressure ventilation systems (**See Drawings**).

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- 2 Removal and proper disposal of **approximately 5,500 square feet of non-friable ACM Transite Cement Siding Fiber Boards with associated Corner Rolls located throughout the Exterior surfaces of the Parachute Tower outside.** This portion of the abatement project shall be performed under the stipulations of the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) protocols. No containment structures shall be erected for this effort.
- 3 Removal and proper disposal of **approximately 4,980 square feet of non-friable ACM Floor Tiles with Mastic located throughout the interior floors of this building.** This portion of the abatement project shall be performed inside the same full containment work area enclosure described above by wet methods with full negative pressure ventilation systems **(See Drawings).**

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One full-containment work area enclosure shall be constructed for the removal of the ACM Transite Cement Siding Fiber Boards, as well as the Floor Tiles with Mastic located throughout the interior of this building **(Drawings)**. The exterior removal work shall be conducted with the provisions and protocols of the National Emissions Standards for Hazardous Air Pollutants **(NESHAPS)**. No containment work area enclosures shall be constructed for this effort; however, the gross material shall be removed under wet conditions such that there are no visible emissions.

This Full Containment Work Area Enclosure Shall Consist of:

Two-layers of 6-mil fire retardant polyethylene sheeting shall be used to cover the entire floor space of the Parachute section of this tower, plus any other areas as determined necessary. **No Exceptions.**

One layer of 6-mil fire retardant polyethylene sheeting shall be utilized as critical barriers for all windows, doors, roof ventilation and attic

Exhibit F

spaces, immovable objects and fixtures, holes, air conditioning ventilation units, etc. **No Exceptions.**

A full 3-staged wet decontamination unit shall be constructed for this full containment work area inside this building **(See Drawings)**. The decontamination facility shall consist of an equipment room **(dirty room)**, a shower room and a clean room. Each compartment shall be separated by air locks. The decontamination unit shall be equipped with hot water, shampoo, soap and other necessary amenities for workers decontamination. **No Exceptions.**

Ephraim N. Okotcha "EO", License No: 10-5399_____

All work areas shall be completely and adequately wetted-down with amended water prior to the start of preparation and construction of the containment work area in the interior hallways of this building. **No Exceptions**

As many Air Filtration Devices **(AFDs)** as necessary **(adequate number to be determined by the consultant)** shall be utilized in this full containment work area enclosure during this abatement project. The reading on the electronic manometer equipment for this full containment work area shall be a minimum of **-0.020** inch of water pressure differential.

Each AFD shall be capable of exhausting air at 2,000 cubic feet per minute **(CFM)**. A minimum of four **(4)** air changes per hour from each operational AFD is required for this project. The contractor shall stop all abatement activities whenever the manometer reading is less than **-0.020** inch of water pressure differential.

The manometer equipment shall be calibrated each day prior to the start of abatement operations. Should the contractor work more than one shift per day or at a time, all manometers shall be calibrated before the start of work for each shift. The electronic manometer shall be equipped with a printer and programmed to print out the pressure readings every two

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minutes at a minimum. **No Exceptions.**

One functional AFD shall be on stand-by in this full containment area at all times throughout the duration of the abatement project, as an emergency backup unit. Also, one AFD unit shall be stationed inside the containment to scrub and distribute the interior-containment air to avoid dead spaces.

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The AFDs in this containment work area enclosure shall remain operational **(Running)** throughout, including night times until successful final clearance testing. All removal work shall be done by hand scrapping. No mechanical equipment shall be utilized during this abatement project. Any methods other than those specified herein shall be with the approval of the building owner and the consultant. **No Exceptions.**

The consultant shall conduct initial exposure assessment by background ambient air monitoring in each work area to determined initial respiratory requirements. However, half-face negative pressure demand air respirator **(Half-Face)** equipped with HEPA filters may be utilized if fiber levels inside the mask are within the clean-air standards.

ACM waste generated during this abatement project shall be disposed of in an approved landfill. Each load of waste taken out of this facility during this project shall have a separate Waste Disposal Manifest. All double-bagged waste shall be labeled with the generators name, address, telephone number and the contact person. **No Exceptions**

The consultant or owner shall sign every waste manifest. The original copy from the landfill shall be delivered to the owner no later than five days from job completion. **No Exceptions.**

The abatement contractor, his supervisors and workers must be licensed and certified by the TDSHS to perform asbestos abatement operations in the State of Texas, in accordance with all applicable federal, state and

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local regulations guiding the handling of asbestos abatement.

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All clearance air testing shall be by aggressive methods for this project. Project air samples collected throughout this project shall be analyzed by Phase Contrast Microscopy (**PCM**). All project air samples collected throughout this project shall be analyzed by a TDSHS licensed asbestos PCM laboratory.

The testing laboratory shall participate in an approved quality control quality assurance program (**QCQA**), such as Proficiency Analytical Testing (**PAT**), or the Asbestos Analyst Registry (**AAR**) administered by the American Industrial Hygiene Association (**AIHA**). No clearance sample shall contain fiber levels greater than 0.010 f/cc for this project in compliance with these specifications. *The abatement contractor shall re-clean and re-encapsulate **the** contained work area **enclosure** if the result of any sample(s) in the first set of clearance air samples contains fiber levels greater than 0.010 f/cc. No Exceptions*

Re-testing costs including the consultant's time and material expenses shall be at the expense of the abatement contractor. The consultant's time and material expenses shall not exceed \$93/Hour or \$744 for an eight-hour work shift, per these specifications.

NOTE: It should be stated that all fibers should be counted according to the recommended A-Counting Rules of the National Institute of Occupational Safety and Health (**NIOSH**) 7400 Methods. These methods do not distinguish between asbestos and non-asbestos fibers.

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When the area is certified acceptable by the consultant in writing, the contractor may dismantle the work area enclosure in a manner to ensure no re-contamination occurs. The dismantled enclosure shall be disposed of as asbestos waste.

*****REPEAT*****

It is absolutely the responsibility of the abatement contractor to verify site conditions and all quantities. Failure to verify site conditions and all quantities shall not relieve the contractor of the obligation to complete this abatement work as specified.

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General Notes:

The schedule for this abatement work shall be Monday through Friday. A maximum of 8 hours per day, beginning at 7.00 a.m. till 4.00 P.M. shall govern.

The chosen abatement contractor shall provide enough workers each day for the performance of the abatement work, in order to complete the project within the notification schedules filed with the TDSHS, and these specifications.

Hours outside those mentioned above shall be with the approval of the building Owner and the consultant.

Contractor shall provide his own OSHA mandatory personal compliance monitoring for his workers, in accordance with federal (OSHA) and TDSHS regulations, as well as these specifications. **No Exceptions.**

BENAS may elect to perform OSHA personal compliance monitoring for the abatement contractor's personnel, if requested.

For Contractor to Provide Own OSHA Monitoring, the following shall Apply:

Contractor's air monitor technician to be utilized for the collection of personal air samples must be currently licensed and certified by the State of Texas (TDSHS).

The contractor shall monitor a minimum of 10% of his workers every day/shift throughout this project, per OSHA rules and these specifications.

All previous day's air sample results shall be ready and posted at the entrance(s) into the decontamination chamber prior to the start of abatement activities each day/shift throughout the duration of this project. No abatement activities shall commence without the previous day's results. **No Exceptions.**

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A copy of the previous day air samples results shall be made available to the consultant each day/shift before the start of abatement operations.

Calibration of the personal sampling pumps shall be performed each

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day/shift in the presence of the consultant.

Quality control protocol including blind recount, coefficient of variation for the PCM analyst shall be provided to the consultant each day/shift prior to the start of abatement activities for that day/shift.

No Exceptions.

Historical data **SHALL NOT** be permitted for the documentation of worker exposure throughout the duration of this abatement project, in accordance with these specifications and the contract documents.

Contractor may use existing water and electricity from the site. Licensed electricians must supervise any and all electrical work that is required during the normal operation of the project. The work shall include but not limited to insulating or removing new or existing light fixtures and/or transformers; establishing temporary electrical service; or insulation of temporary lights.

Also, contractor shall provide all water hoses in OSHA approved connectors and accessories in order to provide water at the needed locations throughout the abatement project.

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NOTE: If the owner is unable to provide electric power or water supply for this project, the contractor shall provide his own electric power by generators, etc. and adequate water supply for the abatement work.

** A mandatory pre-construction meeting shall be held at the project site location prior to the start of abatement activities. The chosen abatement contractor's competent person, On-Site Supervisor(s) shall be in attendance at this meeting. This meeting can be scheduled on the same day as the start date for this abatement work in accordance

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with the notification schedules filed with the TDSHS and these technical specifications.

NOTE: American Institute of Architecture **(AIA)** Document A201 'GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION' is hereby adopted by reference as if it is copied into the specifications and contract documents. All bidders are required to be familiar with the articles and provisions of this document.

DRAWINGS:

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GENERAL OVERVIEW

The purpose of this project entails the complete removal of all later detailed ACM Transite Cement Siding Fiber Boards in the Interior and Exterior surfaces of the Parachute Tower, plus Floor Tiles and Mastic throughout the interior floors of the Parachute and Dinghy Shop Building. This building is located at 703 Airline Drive on the Campus of the Texas State Technical College **(TSTC)** in the City of Waco, McLennan County, Texas. Also, this building is currently scheduled for future renovation and remodeling.

All work shall be performed in compliance with these specifications, the United States Environmental Protection Agency **(USEPA)**, and National Emissions Standards for Hazardous Air Pollutants **(NESHAP)**. Also, Occupational Safety and Health Administration **(OSHA)**, Texas Asbestos Health Protection Rules/Act **(TAHPR)**, Texas Commission on Environmental Quality **(TCEQ)** and any other applicable federal, state and local governmental regulatory agencies' requirements must be complied with. It should be stated that this building is currently unoccupied.

Furthermore, the recommendations of the National Institute for Occupational Safety and Health **(NIOSH 7400 Methods)** with respect to respiratory protection program, the collection and analysis of air samples before, during and after the abatement work shall be adhered to. Finally, this project **SHALL** be completed strictly according to detailed requirements of these specifications and the contract documents. In any event where the requirements of these specifications and contract documents are in conflict with applicable federal, state or local regulations guiding the handling and abatement of ACM in the State of Texas, the most stringent requirements shall apply.

OBJECTIVES

The objective of this project is to safely remove all asbestos-containing building materials enumerated above, which are located in the interior

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and exterior surfaces of the Parachute and Dinghy Shop Building located on the Campus of the Texas State Technical College in Waco, McLennan County, Texas. All federal, state and local governmental agencies' regulations and requirements shall be complied with for this project. **No Exceptions.**

Effort shall be made to:

1. Remove all specified ACM from the above described property interior and exterior areas.
2. Prevent any person or persons from inhaling asbestos fibers.
3. Prevent any asbestos contamination of: Adjacent work areas, and the general environment throughout the project duration.
4. Ensure all generated asbestos wastes are disposed of completely and properly and to provide the Owner with documentation indicating proper disposal.
5. Maintain a safe working environment throughout the duration of the project.
5. Accurately document all project activities.

2.0 CONTRACTOR'S RESPONSIBILITIES

Abatement contractors are directed to carefully examine these specifications prior to bidding and before the start of abatement operations, as well as during the course of asbestos abatement activities to ensure that adequate resources are devoted to meet the approved schedules, contract documents, notifications and these specifications. The chosen abatement contractor is responsible for carefully examining

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site conditions and all quantities prior to the start of abatement work. Failure to verify all quantities and side conditions shall not relieve the contractor the obligation and responsibility to complete this abatement project as specified in the contract documents and these specifications.

2.1 Coordination with Independent Testing Laboratory

- A. The abatement contractor shall fully cooperate with the independent testing laboratory **(Consultant)** personnel in providing access to all work locations.
- B. The contractor shall furnish incidental labor facilities to:
 - i) Provide access to all work locations to be tested and
 - ii) Facilitate inspections and testings.
- C. The contractor shall notify the testing laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
- D. Payment for laboratory's time if the work area is not ready for testing when scheduled shall be at the contractor's expense. Laboratory's time and materials expenses shall not exceed \$93.00 per hour, or \$744 for an eight-hour work day/shift.

2.2 Notifications

The contractor is responsible for ensuring that proper notifications have been filed with all regulatory agencies having authority over proposed abatement work, including but not limited to the city, county, state and/or federal agencies, especially the TDSHS.

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Either the building Owner or the consultant, as well as the abatement contractor can file the notification schedules to the TDSHS; however, the Owner is responsible for the payment of notification fees to the TDSHS.

2.3 Materials and Equipment

The contractor shall provide all items, articles, materials, operations or methods listed or mentioned, including all labor, materials, equipment, applicable permits and notifications, and all incidentals necessary and required for their use to complete the abatement work specified in the manner and time specified.

The contractor shall supply all protective equipment (**protective clothing, respirators, cover glasses, steel toe boots, harnesses, hard hats, etc.**) for all personnel entering any areas exposed to asbestos dusts, including the Owner, personnel of the testing laboratory and authorized visitors.

2.4 Contractor's Effort

The contractor shall provide all personnel, equipment, supplies and facilities necessary to complete this project as specified in the detailed Scope of Work for this project (**See Scope of Work Above**).

2.5 Personnel

2.5.1 Supervisor

- A. The on-site supervisor(s) must be currently licensed with the State of Texas Department of State Health Services (**TDSHS**) to manage any asbestos abatement operation for this project.
- B. The supervisor(s) must be present at the project site 100% of the time during active removal phase of this project. Also, the supervisor **SHALL** enter into the contained work area at least 25% of

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the time during active removal operations, in accordance with TDSHS regulations and these specifications. **No Exceptions.**

2.5.2 Employee Conduct

- A. Any employee whose conduct is offensive to the Owner or the consultant, or any employee apprehended on Owner-owned or controlled property with alcoholic beverage, or any form of controlled substance on his person, or is suspected of having consumed the same, will be brought to the attention of the contractor's on-site supervisor. The supervisor shall take action(s) appropriate to the circumstances. Such action to include, but not limited to dismissal from the premises.
- B. Any person found to be deliberately disposing of asbestos waste in any manner other than those outlined in these specifications, or who is recklessly exposing himself, fellow employees, or the general public to asbestos materials, or engaging in activities that are unnecessarily hazardous to himself, fellow employees, or the general public, will be brought to the attention of the contractor's supervisor.

The supervisor shall take appropriate action(s) to include, but not limited to, dismissal from the premises.

- C. Smoking, eating, drinking or the application of cosmetics within the restricted work areas during active abatement operations is prohibited and will not be allowed.

2.6 Temporary Facilities and Controls

2.6.1 Water for Construction

The Owner shall provide water to be used during the abatement project. The contractor shall provide temporary facilities or other items required to properly transport the water to the location where it is needed,

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including water hoses and airless sprayers where necessary.

If the Owner is unable to provide water for construction or abatement operations, the contractor shall provide own water for all construction activities during this project, in accordance with the contract documents and these specifications.

2.6.2 Electricity for Construction

The Owner shall provide electrical energy as required for all branches of the work, to operate equipment and to provide artificial lighting. The contractor shall provide temporary wiring and outlets as required. All electrical sources must be equipped with ground fault interrupter system **(GFI)**. If the Owner is unable to provide electrical energy **(power)** for construction or abatement operations, the contractor shall provide own electrical power for all construction activities during this project, in accordance with the contract documents and these specifications.

Any electrical work that is required during the normal operation of this project must be supervised by licensed electricians. The work includes, but not limited to, insulating or removing new or existing light fixtures and/or transformers; establishing temporary electrical services; or insulation of temporary electrical fixtures.

2.6.3 Handling Materials

The contractor shall properly care for and protect materials and equipment at the job site. Placement of building materials and equipment at the site shall be subject to the approval of the Owner.

2.6.4 Cleaning

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The contractor shall keep the premises clean at all times during the abatement operations. Upon completion of all abatement activities, the contractor shall ensure that the areas surrounding the project are in a neat and clean condition as approved by the Owner.

2.6.5 Barricades, Walkways and Work Area Barriers

The Contractor Shall:

- 1) Maintain, at all times adequate barricades and enclosed walkways to protect the workmen and the general public from injury.
- 2) Erect and maintain restricted work areas with full three-stage wet decontamination facilities, which shall include an equipment room (**dirty room**), a shower room and a clean room.

The decontamination chambers shall be constructed with two layers of 6-mil fire retardant black resilient polyethylene sheeting barriers to prevent access to any asbestos dusts and/or materials at the work areas. The decontamination corridor shall be secured from entry by unauthorized persons at all times, including night times when no abatement operations are in progress.

- 3) Upon completion of the abatement work at any and all location(s), the contractor shall remove all polyethylene sheeting barriers and all other items from the project site.

2.6.6 Signs

- A. No signs or advertisements shall be displayed without the approval of the Owner.
- B. The location of the signs if any, must meet the approval of the Owner.

2.6.7 Security

The Contractor shall provide adequate security to ensure that:

1. The restricted asbestos abatement work area enclosures are not entered by unauthorized persons
2. Unauthorized persons are prevented from accessing any asbestos waste material
- 3) Every person who enters any restricted asbestos abatement work area enclosures are logged in and out

2.6.8 Asbestos Waste Storage

Asbestos waste must be removed daily from the abatement areas. Temporary on-site storage of waste outside the immediate abatement areas will be allowed in containers secured from the general public (truck, dumpster, etc.). Asbestos wastes (bags, drums, etc.) will not be stored in direct contact with the ground.

2.6.9 Restrooms

The Owner may provide portable toilet restrooms for use by contractor's personnel.

2.6.10 Notifications, Permits, Warning Signs, Labels and Posters

The Contractor shall perform the following tasks:

- 1) Ensure proper notifications to the TDSHS and any other federal,

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regional, state, and local authorities having jurisdiction over the project within time frames specified by the individual authority.

- 2) Owner is responsible for the payment of necessary notification fee(s) to the TDSHS.
 - 3) Secure all the permits and exemptions required for the work, including disposal of asbestos in an approved landfill.
 - 4) Provide the names, addresses and telephone numbers of approved waste disposal site(s). Provide signed copies of Hazardous Waste Disposal Manifests issued by the TCEQ which documents proper waste disposal in the State of Texas, and deliver to the Owner within five working days after the completion of the abatement project.
 - 5) Erect warning signs around the work areas, and also at every potential points of entry into the restricted work areas from the outside. The warning signs shall be a bright color so that they will be easily noticed. The size of the sign and the lettering shall be no less than OSHA requirements.
 - 6) Label all plastic bags and drums utilized to transport contaminated material to the landfill as required by regulations. Provide any signs, labels, warnings, and posted instructions that are necessary to protect, inform and warn the general public (people) of the hazards from asbestos exposure. All signs shall be in English and Spanish Languages.
- a. **Per OSHA Regulations: 29 CFR 1926.1101, warning signs shall Read:**

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

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- b. Per OSHA Regulations: 29 CFR 1926.1101, warning signs shall Read:

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

- c. Per U.S. Department of Transportation, warning labels shall Read:

R Q HAZARDOUS
SUBSTANCES,
SOLID, NOS,
ORM-E, NA 9188
(ASBESTOS)

2.6.11 Emergency Precautions

- A. The Contractor shall establish emergency exits from the work area.
- B. The Contractor shall be prepared to administer first aid to injured personnel after decontamination from the exclusion zone. Seriously injured personnel shall be treated immediately or evacuated without decontamination.

When an injury occurs, the Contractor shall stop work and implement fiber reduction techniques **(e.g. amended water spraying and hosing down)** until the injured person has been removed from the work

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area(s) .

2.6.12 Respiratory Protection

The minimum respiratory protection requirements for this project are summarized as follows:

1. Air Purifying Respirators may be used (negative pressure half-face or full-face masks only) where the concentration of fibers in the work area may reasonably be expected not to exceed 0.010 fibers per cubic centimeter of air **(0.010 f/cc)** .
2. Powered Air Purifying Respirators **(PAPRs)** may be used where the concentration of fibers in the work area may be reasonably expected not to exceed 1.000 fibers per cubic centimeter of air **(1.000 f/cc)** . The protection factor for the PAPR shall be 1,000, in accordance with OSHA regulations and these specifications.
3. Type "C" Positive Supplied Air or Self Contained Breathing Apparatus **(SCBA)** air with continuous flow or pressure demand clasp must be used where fiber concentration in the work area can be reasonably expected to exceed 3.00 fibers per cubic centimeter of air **(3.00 f/cc)** .

NOTE: The above-described respiratory protection is based on an eight-hour time-weighted average **(TWA)** or a ceiling concentration.

1. If any air samples collected during the abatement process have elevated fiber levels in excess of the limits permissible for the type of respirator being used, respiratory protection must be upgraded. All abatement activities shall be stopped until fiber concentration in that work area is brought down to acceptable levels. It is the responsibility of the contractor to secure enough and approved respiratory protective devices available to complete

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the abatement project on schedule for any foreseeable contingency.

2. If Type "C" Supplied Air or SCBA type Respirators are used, at least two spare units provided by the contractor shall be available at all times for use in the case of emergency, and/or by the Owner, Owner's Representative, or any other authorized personnel.

The Type "C" Respirator shall be worn with a belt to minimize the possibility of dislocating the facemask when the hose is snagged in the work area.

2.6.13 Disposal Activities

- A. It is the responsibility of the contractor to determine current waste handling, transportation, and disposal regulations for the work site and for each waste disposal landfill. The contractor must comply fully with these regulations and all United States Department of Transportation (**USDOT**), State, Local and USEPA requirements, especially waste handling requirements stipulated by the TCEQ.
- B. All containers of asbestos wastes shall be decontaminated prior to loading onto the vehicle transporting the material to the landfill. Wastes shall be bagged inside the contained or restricted work area and placed in a second bag or drum, which must be decontaminated in the contamination-reduction zone (**the decontamination unit**) before transfer into the dumpster. Alternative methods shall be considered if shown as effective as this method.
- C. The contractor shall dispose of asbestos waste from this project in landfills approved by the TCEQ as authorized disposal facilities for asbestos. All double-bagged ACM waste must be marked with the "Originator's (**Owner**) name, address and telephone numbers. The

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contractor shall employ only a licensed asbestos transporter for this effort. Disposing or attempting to dispose of asbestos waste via sanitary sewers, city waste systems or by placing in unoccupied area, is prohibited and will be grounds for immediate cessation of work under this contract until the material is recovered and disposed of correctly and disciplinary actions are taken.

- C. The contractor shall document actual disposal of the waste at the designated landfill by completing all asbestos waste disposal manifests and appropriate chains-of-custody, and forwarding the originals to the Owner within five days of completion of the project.

2.7 Encapsulation

A sealant coat shall be applied after removal of all asbestos materials. This coat is designed to encapsulate any trace amounts of asbestos fibers that may be present in the air even after the best removal effort. It should remove moisture from the base material to help ensure proper bonding where applicable.

1. **Encapsulant:** The Contractor shall use penetrating type encapsulant designed for asbestos control and suitable for painting or spray-on materials, specified elsewhere.

Class "A": Interior finishes, flame spread 0 to 25, smoke developed 0 to 450. The encapsulant should be tinted a contrasting color. Application rate shall be as recommended by the manufacturer. These or equivalent shall be used:

"SK-13'1C" as manufactured by National Cellulose Corporation, 12315 Robin Boulevard, Houston, Texas 77045. Telephone number: (713) 433-6761.

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2. Any proposed substitute must be requested in writing to the owner and/or consultant, and must be approved prior to use.

2.8 Tools and Equipment

- A. **Airless Sprayer:** An airless sprayer, suitable for application of encapsulating materials shall be used wherever possible.
- B. **Asbestos Filtration Devices (AFDs):** All Asbestos filtration devices utilized for this project must be equipped with high efficiency particulate air **(HEPA)** filter. Negative Air Pressure Machines capable of exchanging the air inside the containment are required. A minimum of four air exchanges per hour is required inside the containment for this project.
- D. **Scaffolding:** Scaffolding, as required to accomplish the specified work, shall meet all applicable safety regulations, especially the OSHA standards.

2.9 Execution

2.9.1 Pre-Asbestos Abatement Preparations

- A. Prior to any abatement work in any area, the contractor shall: seal off the entire area to anybody other than trained personnel and authorized visitor(s); install and maintain two layers of six mil resilient polyethylene sheeting barrier of the containment work area enclosure; erect signs around the perimeter in accordance with USEPA, NESHAP, OSHA, TDSHS and this specifications; provide 24-hour security against unauthorized entry during abatement process; and maintain a log of all people entering and exiting the work place.

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- B. Thoroughly decontaminate through wet cleaning and/or HEPA vacuuming all walls, carpets, lighting fixtures and other items that were not removed by the Owner.

2.9.2 Utilities

The contractor shall provide all necessary connections for temporary utilities in the work place during the abatement work. The temporary electrical power shall be utilized in accordance with OSHA and Electrical Code for Wet Environment.

2.9.3 Asbestos Removal

- A. All ACM shall be removed according to the stipulations of these specifications.
- B. Immediately following removal, the wetted asbestos shall be packed into labeled six-mil plastic bags to prevent the material from drying. The excess air in the bags will be exhausted in the work area prior to sealing the bags.

Pack and seal all bagged materials in drums and/or containers, which are also labeled or alternatively sealed in double bags of six-mil plastic. Thoroughly clean the exterior of the bags or sealed drums prior to loading onto the truck for transportation to the landfill. Alternative procedures must be approved in writing by the consultant before work starts.

- C. Disposal shall be in a landfill meeting USEPA, TDSHS and TCEQ requirements. The contractor shall not throw bags into the landfill in a manner that may cause the bags to burst open. If the bags cannot be taken out of the drums undamaged, then include the disposal of the drums with the bags. Ensure that the bags are not

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opened in the process.

- D. All used plastic, tapes, cleaning materials; clothing and filters shall be treated and disposed of as asbestos waste materials.

2.9.4 Final Asbestos Decontamination and Testing

After the removal of asbestos has been completed and before removal of any barriers, the entire work area shall be thoroughly wet-cleaned and/or vacuumed with HEPA filtered vacuum cleaner. Following the successful inspection and final testing as specified herein, remove all HVAC filters and dispose of them as asbestos waste. All equipment used in the work area, such as negative air units, scaffold, ladders, vacuum cleaners, masks, hard hats, etc., shall be thoroughly decontaminated through wet cleaning, HEPA and/or vacuumed prior to removal from the work area. After detailed cleaning has been completed, the consultant shall perform a visual inspection to ensure that all ACM and contaminated debris have been properly removed and the entire containment area is clean and dust free.

Following a thorough visual inspection, clearance air testing shall be conducted by aggressive methods for the contained work areas throughout this project. Air samples collected shall analyzed by Phase Contrast Microscopy (**PCM**). All air samples collected throughout this project shall be analyzed by a TDSHS licensed asbestos PCM laboratory.

The testing laboratory shall participate in an approved quality control quality assurance program (**QCQA**), such as Proficiency Analytical Testing (**PAT**), or the Asbestos Analyst Registry (**AAR**) administered by the American Industrial Hygiene Association (**AIHA**). No clearance sample(s) shall contain fiber levels greater than 0.01 f/cc for this project in accordance with these specifications and the contract documents.

The abatement contractor shall recline and re-encapsulate the containment if the result of any one sample in the first set of clearance air

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samples, contain fiber levels greater than 0.01 f/cc. Re-testing costs including the consultant's time and material expenses shall be at the expense of the abatement contractor. The consultant's time and material expenses shall not exceed \$93/Hour or \$744 for an eight-hour day/shift, per these specifications.

NOTE: It should be stated that all fibers are counted according to the recommended A-Counting Rules of the National Institute of Occupational Safety and Health **(NIOSH)** 7400 Methods. These methods do not distinguish between asbestos and non-asbestos fibers.

When the Owner's representative **(consultant)** certifies the area acceptable in writing, the contractor may dismantle the remainder of the containment(s) in a manner to ensure no re-contamination occurs. The dismantled containment(s) shall be disposed of as asbestos waste.

2.9.5 Post-Abatement Submittals

The contractor shall provide a final report which contains signed copies of the hazardous waste disposal manifests, OSHA personnel compliance air monitoring records, copies of required insurance certificates, and copies of the daily project logs.

A copy of the contractor's final report shall be made available to the consultant and the building Owner.

3.0 LABORATORY RESPONSIBILITIES

Except as otherwise specified, the Owner shall separately employ the

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services of an Independent Testing Laboratory (**Laboratory**) to perform sufficient ambient air monitoring samples to determine if the contractor is complying with the requirements of these specifications, as well as federal, state and local regulations guiding asbestos handling and abatement. Teaming arrangements between the abatement contractor and the testing laboratory are allowable in this circumstance, but separate employment by the Owner is required.

The Laboratory shall perform air monitoring and testing during abatement work and cleaning operations, and shall collect PCM clearance air monitoring samples upon completion of the abatement work in each identified area. A Texas licensed asbestos PCM Laboratory shall analyze these samples.

1. The Laboratory shall conduct air monitoring in accordance with the method prescribed by Section 1926.1101 of the OSHA regulations.
2. If the level of airborne fibers as measured by the PCM clearance air monitoring and testing is greater than 0.01 f/cc for any one sample, additional clearance air monitoring and testing shall be performed at the contractor's expense until the level of airborne fibers is at, or below the stipulated TDSHS regulated clean air standard of 0.01 f/cc.

3.1 Laboratory Duties

- A. Cooperate with the Contractor; provide qualified personnel after due notice.
- B. Perform specified ambient air sampling and testing:
 1. Comply with specified standards (**See Section 7.0**); and
 2. Ascertain compliance of materials and work procedures with requirement of contract documents.

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- C. Promptly notify the contractor and the Owner of observed irregularities or deficiencies of work or products.
- D. Stop all abatement operations if gross negligence and irregularities are observed, or for non-compliance with regulated, recommended and/or applicable work practices and procedures, as well as these specifications.
- E. Promptly submit written report of each test and inspection; one copy each to Owner and contractor. Each report shall include:
 - 1. Date Issued.
 - 2. Project title, number and building identification.
 - 3. Laboratory name, address and telephone number(s).
 - 4. Name and signature of a laboratory inspector and/or Microscopist.
 - 5. Date and time of sampling or inspection.
 - 6. Location of sample or test in the project.
 - 7. Type of inspection or test.
 - 8. Results of tests and compliance with Contract Documents.
- F. Perform additional tests as required by the Owner.
- G. Perform additional clearance air monitoring and testing at the contractor's expense when initial clearance and tests indicate a level of airborne asbestos fibers over 0.01 f/cc in any one sample collected inside the containment work area.

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3.2 Authority of the Laboratory

The Laboratory is authorized to:

1. Release, revoke, alter or enlarge on the requirements of the scope of work and applicable specifications;
2. Approve or accept any portion of the work.

3.3 Notification

The laboratory shall notify the Owner and the contractor of the results of the PCM clearance results within two hours of completion of such testing and analysis.

Initial notification of test results shall be either by telephone, facsimile, or in writing within the times specified above. If initial notification is by telephone, written notification shall be submitted three days after initial notification to the Owner and the contractor.

4.0 OWNER'S RESPONSIBILITIES (CONSULTANT)

4.1 Pre-Asbestos Abatement Preparations

The consultant shall inspect the work site prior to the commencement of abatement activities to document conditions, which might impact the contractor's ability to meet his obligations.

4.2 Authority to Stop Work

The Owner or Owner's representative (**consultant**) has the authority to stop the abatement work at any time he determines that conditions are not within the specifications and applicable regulations. The cessation of work shall continue until conditions have been corrected and corrective steps have been taken to the satisfaction of the consultant. Standby

Exhibit F

time required to resolve violations shall be at the contractor's expense.

5.0 PROJECT COORDINATION AND PROCEDURES (REHATCHED)

5.1 Project Coordination

Contractor shall provide a full-time Superintendent who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, as well as disposal procedures. This person is the Competent Person as set forth in OSHA 29CFR 1926.1101, and is the contractor's representative responsible for compliance with all applicable federal, state and local regulations and must meet the criteria for the TDSHS licensing requirements. This person must have had a minimum of five (5) years of on-the-job experience and meet any additional requirements set forth in OSHA 29CFR 1926.1101 as amended June 29, 1998.

5.2 Special Reports

Except as otherwise indicated, submit special reports directly to the consultant within one hour of occurrence requiring special attention with a copy to the building Owner and all others affected by the special occurrence.

5.3 Reporting Unusual Events

When an event of unusual nature occurs at the site, the supervisor shall prepare and submit a special report listing chain of events, persons participating and response by contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, the supervisor shall advise the consultant at the earliest possible time.

5.4 Reporting Accidents

Exhibit F

Prepare and submit reports to the consultant of accidents on site. Record and document data and action, and comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

5.5 Contingency Plans

Prepare a contingency plan for emergencies including fire, accidents, power failure, negative air pressure systems failure, supplied air system failure, or any other event that may require modification or abridgement of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation.

Note that nothing in these specifications shall impede existing safety or the pursuit of adequate medical attention in the event of an emergency.

5.6 Emergency Numbers

Provide to the consultant during pre-construction meeting and post in room of contractor's staging area, on heavy equipment and other approved locations as applicable. Telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power-generating company, telephone company, and poison control center.

5.7 Submittals

Prior to the start of work, submit the following to the consultant for review. No work shall begin until these submittals are reviewed and returned by Owner.

1. Contingency Plans for emergency actions
2. Telephone numbers and location of emergency services
3. Notifications to be sent to entities at the work site

Exhibit F

4. Copy of notification filed with all appropriate authorities
5. Construction schedule and plan of action
6. Other abatement submittals

6.0 OTHER

General Applicability of Codes, Regulations and Standards

Except to the extent that more explicit or stringent requirements are directly specified in the contract documents, all applicable codes, regulations and standards have the same force and effect. They are also made a part of the contract documents by reference as if they are copied into it, or as if published copies are bounded here with.

Applicable Publications

The publications listed below form a part of these specifications by referenced and are adopted as if copied into the contract documents. The publications are referenced in text by basic designation only.

1. **Environmental Protection Agency (EPA):** Regulations for Asbestos (Code of Federal Regulations Title 40, Part 61).
2. **Occupational Safety and Health Administration (OSHA):** Asbestos Regulations (Code of Federal Regulations Title: 29CFR, Part 1926.1101).
3. **National Institute for Occupational Safety and Health (NIOSH):** "Respiratory Protection....A Guide for the Employee"....
4. **American National Standards Institute (ANSI):** Z86.1-1973...Commodity Specification for Air...

Exhibit F

5. **Code of Federal Regulations (CFR):**

- a. **29 CFR 1926.1101**, Occupational Safety and Health Act (OSHA).
- b. **20 CFR 1910.20, Subpart C**, General Safety and Health Provisions.
- c. **40 CFR 61, A and B**; U.S. Environmental protection Agency Regulations for Asbestos.
- d. **40 CFR 61, Part III**; National Emission Standards for Hazardous Air Pollutants; Asbestos **NESHAP** Revision; Final Rule, November 20, 1990.
- e. 34 CFR 61, Parts 230 and 231, Appendix B, Procedures for Containing and Removing Building Materials Containing Asbestos: Federal Register, Volume 45, NO. 182, Page 61961, September 17, 1980.

6. **Texas Department of State Health Services**, Division of Occupational Health, Texas Asbestos Health Protection Rules, May 29, 1998, Texas Civil Statutes, Article 4477-3a, Section 12.

7. Resilient Floor Covering Institute Recommended Work Practices for the Removal of Resilient Floor Coverings and Addenda, July 1990.

8. **Texas Commission on Environmental Quality**

Municipal Solid Waste Division; 30 TAC 330.136(b) (3) pertaining to friable asbestos-containing materials 'Must go to an approved Landfill.

Exhibit F