



ASBESTOS ABATEMENT GUIDE

For

**SINGLE FAMILY HOUSE
6713 LARUE CIRCLE
NORTH RICHLAND HILLS , TEXAS
76180**

Prepared for

**CITY OF NORTH RICHLAND HILLS
FACILITES AND MANAGEMENT
6110 DICK FISHER DRIVE WEST
NORTH RICHLAND HILLS, TEXAS
76180**

Prepared by

**Professional Service Industries, Inc.
310 Regal Row Suite 500
Dallas, Texas 75247
Telephone (214) 330-9211**

PSI PROJECT NO. 06332755

October 18, 2016

TABLE OF CONTENTS

INVITATION TO BID

SECTION 1.0 - SCOPE OF WORK

SECTION 2.0 - PROTECTIVE CLOTHING AND EQUIPMENT

SECTION 3.0 - EMERGENCY PLANNING

SECTION 4.0 - SITE PREPARATION FOR ASBESTOS REMOVAL

SECTION 5.0 - ASBESTOS REMOVAL AND DISPOSAL PROCEDURES

SECTION 6.0 - CLEAN-UP PROCEDURES

SECTION 7.0 - AIR MONITORING PLAN

APPENDICES

APPENDIX A – CONTAINMENT DRAWINGS

APPENDIX B – LICENSES

INVITATION TO BID

.

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018

A handwritten signature in black ink, appearing to be 'Urk' or similar, located at the bottom left of the page.

SECTION 1.0 - SCOPE OF WORK

1.1 Purpose

This Asbestos Abatement Guide or Work Plan gives general methods and work procedures to be used by the City of North Richland Hills selected Asbestos Abatement Contractor for the safe removal of asbestos-containing materials (ACMs). This plan is to be used in coordination with all applicable federal, state, and local regulations as well as the general abatement specifications as found in the *Texas Department of State Health Services (TDSHS) Texas Asbestos Health Protection Rules (TAHPR) in Title 25 of the Texas Administrative Code Part 295.31 – 295.73 (25 TAC 295.31 – 295.73)*, *United States Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) in Title 40 of the Code of Federal Regulations Part 763 Subpart E (40 CFR 763 Subpart E)*, *EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) in 40 CFR 61 Subpart M*, *United States Department of Labor Occupational Safety and Health Administration (OSHA) Asbestos in Construction Standard for Class I, II, III IV Asbestos Work operations in 29 CFR 1926.1101 and the Resilient Floor Covering Institute (RFCI) guidelines.*

1.2 Scope

This project includes removal of ACMs as identified in this specification or as directed by the Owner's contract documents. These operations shall be in compliance with OSHA Class I and II, EPA AHERA and TDSHS guidelines. The scope of work is as follows:

- a. Contractor shall submit pre-work submittals (1 copy) for review, prior to work. The submittals shall contain, but not limited to all licenses, personnel information, performance, labor and payment bonds and TDSHS/EPA Notification. Contractor is directed to fill out and submit the TDSHS Notification for the Owner based on the timetable as set forth by the Owner's schedule.
- b. Contractor shall supply all the necessary tools, equipment, labor, construction/abatement activity materials, waste transporter/can (enclosed disposal unit) and delivery of the waste to an appropriate waste disposal facility to complete the work as specified by these guidelines and/or by the contract agreement.
- c. Owner shall supply a source of water and electrical power for the project. The asbestos regulated units (ARUs) shall be paid by the Owner.
- d. Contractor, as a minimum, shall isolate the work areas in accordance with the appropriate sections of *25 TAC 295.60 and 29 CFR 1926.1101(g)* as well as this work plan. A temporary airtight barrier, as required, shall be constructed to separate the work areas from the occupied areas in order to maintain service to these areas of the building. This barrier shall be constructed of polyethylene sheeting and wood framing or equivalent. Penetrations through the barrier shall be sealed with an appropriate sealant.

- e. Contractor shall remove and dispose of the following ACMs as indicated on the reference drawing and as directed by the Owner's representative:
- Approximately 4700 square feet of wall and ceiling system (joint compound-texture) throughout.
 - Approximately 200 linear feet of window frame caulking.
- f. Contractor shall protect all electrical and thermostat components throughout the building.
- g. Contractor shall construct a three-chamber wet decontamination unit for each work area. The decontamination chamber shall be equipped with a shower capable of delivering hot and cold water. An adequate supply of soap, shampoo and disposable towels shall be maintained for workers at egress.
- h. All small movable objects shall be removed and stored by others. Large moveable objects left inside each work area shall be covered by a minimum of one layer of 4-mil polyethylene sheeting.
- i. Replacement will be conducted by others or as directed by the Owner's contract agreement.
- j. Contractor is to begin work from the start date as noted on the TDSHS Notification or as amended by the Owner's contract. Work schedule is estimated to be a normal 8-hour day. The Contractor may opt to work a 10-12-hour day; however, the Contractor must inform the Consultant 24 hours in advance prior to change in work schedule. The Consultant and the Owner must approve any changes to the work schedule.
- k. Contractor personnel shall not consume food, alcoholic beverages or smoke on project site premises during any activity. Personnel shall restrict themselves to work hours and park only in designated areas. No admittance to the premises is permitted unless escorted by an Owner's Representative or approved Asbestos Contractor/Supervisor.
- l. Contractor shall coordinate all work times with the Owner's Individual Asbestos Consultant (IAC) or Project Manager and is directed to submit, adjust and amend the TDSHS Notification for the Owner based on his accessibility.
- m. Contractor is to submit close out documents within 15 days of completion, to include but not limited to waste manifest, personal testing (PEL/STEL), licenses and project logs.

This project shall be conducted in accordance with this work plan as well as *40 CFR 763 Subpart E, 25 TAC 295, 29 CFR 1926.1101, the Texas Commission on Environmental Quality (TCEQ) rules in 30 TAC 330.136*, and any other applicable, local, State of Texas and EPA/OSHA/other federal codes, regulations, standards, and requirements. Prior to initiating work, proper written notification shall be submitted to the TDSHS per the requirements in *25 TAC 295.34(f) and 295.61*.

END SECTION 1.0

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018

A handwritten signature in black ink, appearing to be 'Urk' or similar, located at the bottom left of the page.

SECTION 2.0 - PROTECTIVE CLOTHING AND EQUIPMENT

2.1 Protective Clothing

Contractor is to ensure that each authorized person involved in asbestos removal will wear protective disposable coveralls, coated canvas or rubber gloves, head covering and non-skid foot coverings whenever he is within the regulated area. The protective clothing shall be made of a material impervious to asbestos fibers.

2.2 Respirators

- a. Contractor shall comply with *29 CFR 1926.1101(h) and the OSHA General Industry Respirator Protection Standard in 29 CFR 1910.134* and initiate appropriate respirator program. A powered air-purifying respirator shall be used for Class I asbestos work, where a negative exposure assessment of the work area has not been produced. A minimum of half-mask air purifying respirators with at least P100 dual HEPA (High Efficiency Particulate Air) filters shall be used during work area preparation and removal of nonfriable materials. Additional organic canisters shall be utilized in conjunction with the asbestos filters during mastic removal.
- b. All respirators shall be approved by the National Institute of Occupational Safety and Health Administration (NIOSH) for use in asbestos-containing atmospheres.
- c. Each worker must perform positive and negative air pressure fit test each time a respirator is put on or as respirator designs permit.
- d. No one wearing a beard or other facial hair, which will prevent a proper respirator seal, shall be allowed to wear a respirator or enter the regulated area.

END SECTION 2.0

SECTION 3.0 - EMERGENCY PLANNING

3.1 Emergency Procedures


The Contractor will develop emergency planning procedures prior to abatement initiation. This plan shall consist of but not limited to emergency exit plans, notification procedures and fire extinguisher locations. Both the Contractor and the Owner shall agree on these procedures.

3.2 Emergency Telephone Numbers

Telephone numbers of all emergency response personnel will be predominately posted. The location of the nearest telephone shall be provided.

END SECTION 3.0

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018



SECTION 4.0 - SITE PREPARATION FOR ASBESTOS REMOVAL

4.1 Worksite Enclosure, if applicable:

- a. Contractor shall isolate the work area (regulated area) per *TDSHS regulation 25 TAC 295.60, EPA regulation 40 CFR 61.145(c)(3)(B), and OSHA Standard 29 CFR 1926.1101*. The regulated areas shall be roped off and marked with clearly written warning labels in order to keep unauthorized personnel out of the regulated area. The regulated area shall encompass the whole identified removal area expected to have an airborne asbestos fiber concentration greater than 0.01 fibers per cubic centimeter (f/cc) and/or 70 structures per square millimeter (s/mm²) as a result of the removal activities and not of other non-related activities conducted in the building.
- b. All movable objects shall be removed from the containment area. Cleaning of contaminated items shall be performed if the items are to be salvaged or reused. Otherwise, they shall be properly disposed of as asbestos waste. All non-movable objects that remain in the containment area shall be covered with a minimum of four-mil plastic sheeting, secured in place.
- c. Regulated areas within which asbestos abatement is to be conducted shall be separated from adjacent areas by impermeable barriers such as plastic sheeting attached securely in place. All openings between containment areas and adjacent areas, including but not limited to windows, doorways, elevator openings, corridor entrances, ventilation openings, drains, ducts, grills, grates, diffusers, and skylights shall be sealed. All penetrations that could permit air infiltration or air leaks through the barrier shall be sealed, with the exceptions of the make-up air provisions and the means of entry and exit.
- d. Floor sheeting shall completely cover all floor surfaces and consist of a minimum of two layers of sheeting with at least a dart impact of 270 grams and tear resistance of machine direction (M.D.) 512 grams and transverse direction (T.D.) of 2067 grams or at least six-mil true thickness. Floor sheeting shall extend up sidewalls at least 12 inches and be sized to minimize the number of seams. No seams shall be located at wall-to-floor joints. Sealing of all floor penetrations against water leakage is mandatory. Wall sheeting shall completely cover all wall surfaces and consist of a minimum of two layers of four-mil sheeting. Wall sheeting shall be installed so as to minimize joints and shall extend beyond wall/floor joints at least 12 inches. No seams shall be located at wall-to-wall joints. Where a fire hazard exists, all plastic sheeting will be certified by the Underwriters Laboratory (UL) as being fire retardant. Where feasible, when containment walls which exceed 260 linear feet must be constructed, a viewing window will be included in the wall for each 260 linear feet or fraction of that distance which will permit the viewing of at least 51% of the abatement work area. The window shall be constructed of plexiglass which measures approximately 18 inches by 18 inches. The bottom of the window will be at a reasonable viewing height from the outside floor.


- e. Contractor shall provide enough negative air units to ensure four air exchanges inside the regulated area at all times. Contractor shall supply a sufficient quantity of negative pressure ventilation units equipped with *ANSI 29.2-79 Local Exhaust Ventilation Requirement* and EPA guideline document *EPA 560/5-83-002 Guidance for Controlling Friable Asbestos-Containing Materials in Buildings*. The documents recommend 0.02 inches of water pressure differential between outside and inside the enclosure. Openings made in the enclosure to accommodate these units shall be air tight. The unit should be placed at the best location so that air is forced to move most optimally across the entire enclosure.
- f. Splash Guards for Floor Tile Removal Requirements: All splash guards shall extend at least five feet above the floor and shall be 6-mil polyethylene sheeting. The sheeting shall be attached to the wall in a manner that will not damage the paint when removed.

4.2 Decontamination Facility, if applicable:

The enclosure shall consist of an enclosed work area and a decontamination area which consists of a change room, shower, and equipment room immediately adjacent to and contiguous with the work area.

END SECTION 4.0

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018



SECTION 5.0 - ASBESTOS REMOVAL AND DISPOSAL PROCEDURES

5.1 Class I Work

Class I Work means activities involving the removal of TSI and surfacing ACM and presumed asbestos-containing material (PACM). Class I Work is scheduled for this project.

- Approximately 4700 square feet of wall and ceiling system (joint compound-texture) throughout.

5.2 Class II Work


Class II Work means activities involving the removal of ACM that is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, fire doors, construction mastics and window caulking. This scope of work requires the removal of the following:

- Approximately 4700 square feet of wall and ceiling system (joint compound-texture) throughout.
- Approximately 200 linear feet of window frame caulking.

5.2.1 The following steps are intended to cover the removal of asbestos-containing Wall and Ceiling systems along with floor mastic. Removal of window frame caulking will be under NESHAPS STANDERD 40 CFR.

- a. Regulate the work area where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the PEL.
- b. Demarcate the work area with signs and barrier tape.
- c. Access to regulated areas shall be limited to authorized personnel only.
- d. All persons entering a regulated area are required to wear respirators. The minimum respiratory protection for this scope of work is ½ mask air purifying respirator with HEPA filters unless fiber concentrations require greater protection. The Contractor is responsible for proper and appropriate respirator selection.
- e. A Competent Person shall supervise all asbestos work.
- f. Use only vacuum cleaners equipped with HEPA filters to collect all debris and dust containing ACM or PACM.
- g. Use wet methods, or wetting agents, to control employee exposure during asbestos handling, mixing, removal, cutting, application, and cleanup, except when there is an electrical hazard or another hazard.
- h. Critical barriers shall be placed over all openings to the regulated area.
- i. Shutdown and lockout the HVAC system.

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018



- j. All objects within the regulated area shall be covered with impermeable drop cloths or plastic sheeting that is secured by duct tape or equivalent.
- k. Prep all walls with two layers of 4-mil. Plastic if applicable.
- l. Construct decontamination and load-out units.
- m. Establish negative pressure.
- n. Conduct pre-abatement visual inspection with the Project Manager.
- o. Any impermeable objects that are not ACM; must be HEPA vacuumed or wet wiped, then passed through the bag out as non-ACM waste.
- p. Remove ACM along with amended water. Materials should be removed intact, unless the Contractor demonstrates that intact removal is not possible.
- q. Promptly cleanup and disposal of wastes and debris contaminated with asbestos in leak-tight containers. Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors.
- r. Wet wipe and clean entire work area.
- s. Conduct final visual inspection with the Project Manager.
- t. Encapsulate the entire work area.

5.3 Waste Disposal

- a. Disposal bags will be 6-mil polyethylene bags that are preprinted with labels as required by EPA *NESHAPS Standard 40 CFR Part 61, Subpart M*. Each will be double-bagged and goose-necked at the top to prevent fiber release.
- b. The Contractor shall take care to prevent asbestos material for clinging to the outside of the filled bags or containers. The bags shall be HEPA vacuumed or wet wiped prior to leaving the work area.
- c. The waste transporter will have a TDSHS asbestos transporter license.
- d. Authorized persons will be protected by disposable clothing and a minimum of half-face respirator while loading asbestos waste.
- e. The enclosed cargo area of the truck or dumpster will be lined with 6-mil polyethylene sheeting to prevent contamination from leaking containers.
- f. Waste containers will not be thrown into or out of the truck cargo area or dumpster.
- g. Asbestos waste shall be disposed of in an approved landfill according to current state requirements.


Srihari Krishnaprasad
 IAC#105478
 Expires 02/08/2018



- h. A proper manifest shall be required of all off-site asbestos shipments per *Texas Regulations 21 TAC 335.10 (per Texas Department of Health, Occupational Health Division) and EPA NESHAPS Standard 40 CFR Part 61, Subpart M.*
- i. A copy of the waste manifest and all abatement documents (logs, PEL monitoring, etc.) shall be sent to Professional Service Industries, Inc. and the owner upon completion of the project.

END SECTION 5.0

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018



SECTION 6.0 – CLEAN-UP PROCEDURES

6.1 Work Area Clean-up

The work area and the decontamination area shall be thoroughly cleaned after all work is finished.

6.2 Method of Clean-up

The area shall be cleaned with a HEPA vacuum or wet-wiped.

6.3 Clean-up of Polyethylene Sheeting

After vacuuming or wet wiping, the inner layer of plastic sheeting that covers the floors, walls, and all non-removable equipment shall be sprayed with an encapsulant and removed.

6.4. Post Clearance Clean-up

Contractor shall remove all waste materials and equipment from job site within 24 hours of completion of the project (Final Clearance Notification verbally or written from the Consultant).

END SECTION 6.0

SECTION 7.0 - AIR MONITORING PLAN

7.1 General Procedures

Monitoring of airborne concentrations of asbestos fibers shall be in accordance with *TDSHS regulation 25 TAC 295.58(i)*, *OSHA regulation 29 CFR 1926.1101(f)* and *Appendices A and B*, and *EPA-AHERA regulation 40 CFR 763.90 Subpart E*, and as specified in this plan. The Contractor shall employ his own Consultant for personal air monitoring and submit the results to the Owner's representative.

7.2 Monitoring Prior to Abatement (Baseline)

Area monitoring shall be conducted in the ACM work area prior to abatement operations in order to establish the airborne asbestos fiber concentration in the work area prior to the commencement of removal operations. This result will establish an airborne fiber concentration in the work area during normal environmental conditions. A minimum of three samples shall be collected on 0.8 micron mixed cellulose ester (MCE) filters loaded in conducting cassettes with extension cowls. Sampling and analysis will be in accordance with the latest edition of NIOSH 7400 protocol, counting rules A. The minimum sample volume will be 1,250 liters. These samples may be analyzed or archived at the Consultant's discretion. The samples shall be preserved for no less than 60 days following achieving clearance.

7.3 Monitoring During Abatement

Area and personal monitoring shall be conducted to determine airborne asbestos fiber concentrations in and around the working environment. All air samples shall be referenced in the daily log.

7.3.1 Area Sampling

Monitoring of the area inside and surrounding the abatement site shall be conducted on a daily basis. A minimum of two (2) general area samples shall be collected inside the regulated area and three (3) outside the regulated area. The outside samples shall be located at the negative air exhaust, in the adjacent space, and at the decontamination unit. If air monitoring outside the abatement area shows air concentrations greater than the permissible exposure limit [PEL - 0.1 f/cc of air as an eight (8) Hour Time Weighted Average (TWA)], the TDSHS-licensed Asbestos Contractor/Supervisor shall be immediately notified.


7.3.2 Personal Sampling

Monitoring of workers shall be conducted as required by the *OSHA regulation 29 CFR 1926.1101(f)* and *Appendices A and B*. Personal sampling is the responsibility of the Contractor.

7.4 Final Clearance (AHERA 40 CFR 763)

All project activities, except operations and maintenance (O&M), shall be cleared by using aggressive air sampling. Aggressive air sampling is the use of an air blower, such as a leaf blower with the force of air unaltered and operating as it comes from the factory, directed at all surfaces in order to cause loose asbestos fibers to become airborne. Final phase contrast microscopy (PCM)

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018




sampling shall be conducted after a final inspection by the on-site project manager. A minimum of 1,250 liters to a maximum of 3,850 liters of air shall be collected for final clearance samples. A minimum of five (3) inside samples shall be collected from each containment area greater than 160 square feet. Areas less than 160 square feet shall have at least three samples collected per containment area and analyzed via phase contrast microscopy (PCM). The results of the PCM analysis for each sample shall be below 0.01 f/cc. The results of the TEM analysis for all samples shall average less than 70 s/mm². The "Z" shall not be conducted for any reason during the conduct of this project. *Contractor shall reimburse the Owner for all additional monitoring due to failures for clearances (\$700.00 per clearance set of 5 samples).*

7.5 Air Sample Analysis

PCM air samples shall be analyzed in accordance with the TDSHS- required "NIOSH 7400 Analytical Method for Asbestos and Other Fibers by PCM" by a Proficiency Analytical Testing/Asbestos Analytical Registry (PAT/AAR)-certified and TDSHS-licensed PCM laboratory. The TEM air samples shall be analyzed in accordance with AHERA 40 CFR 763 Appendix A to Subpart E by a National Voluntary Laboratory Accreditation Program (NVLAP)-certified and TDSHS-licensed Asbestos Laboratory. Collecting and analyzing area and clearance samples as well as inspecting the site will be the responsibility of Professional Service Industries, Inc. 4087 Shilling Way, Dallas, Texas 75237 (214) 330-9211. The laboratory results will be available in 24 hours after completion of the sampling and delivery to the laboratory.

END SECTION 7.0

Srihari Krishnaprasad
IAC#105478
Expires 02/08/2018



APPENDICES

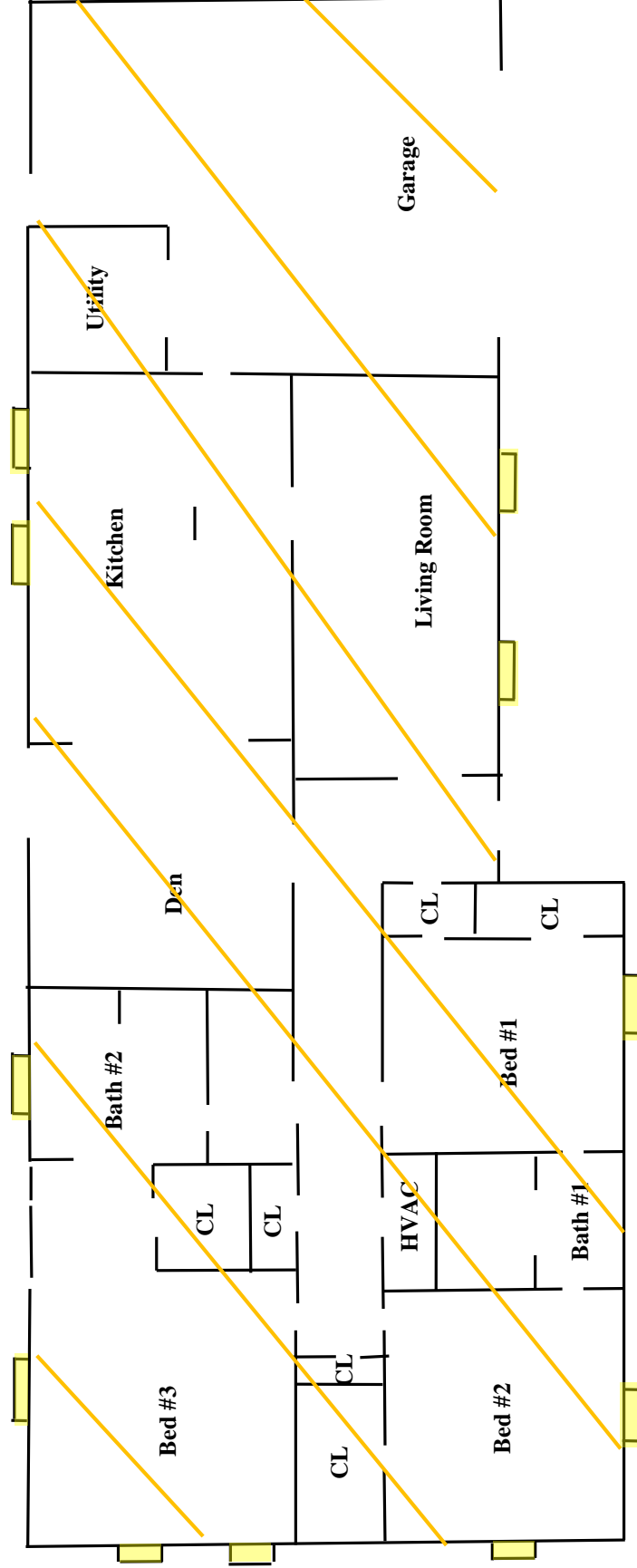
APPENDIX A

CONTAINMENT DRAWINGS




Shed

No Suspect
ACM



LEGEND

- Wall & Ceiling System
- Window Frame Caulking

 <p>Information To Build On Engineering • Consulting • Testing 310 Regal Row #500 - Dallas, Texas 75247 (214) 330-9211 - FAX (972) 263-2612</p>	<p>Date Drawn: 10/8/2016</p> <p>Figure 1 Material Location Map</p>	<p>6113 La Rue Cir NRH, TX PSI Project No.: 06332753</p>
---	---	--

APPENDIX B

LICENSES



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

PROFESSIONAL SERVICE INDUSTRIES INC

is certified to perform as a

Asbestos Consultant Agency

in the State of Texas within the purview of Texas Occupations Code, chapter 1954, so long as this license is not suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.

A handwritten signature in cursive script, appearing to read "John Hellerstedt", written over a horizontal line.

JOHN HELLERSTEDT, M.D.
COMMISSIONER OF HEALTH

License Number: 100047

Control Number: 96870

Expiration Date: 3/19/2018

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE



TEXAS DEPARTMENT OF STATE HEALTH SERVICES

PROFESSIONAL SERVICE INDUSTRIES INC

is certified to perform as a

**Asbestos Laboratory
PCM, PLM, TEM**

*in the State of Texas within the purview of Texas Occupations Code, chapter 1954, so long as this license is not
suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.*

A handwritten signature in dark ink, appearing to read "David Lakey MD".

DAVID LAKEY, M.D.
COMMISSIONER OF HEALTH

License Number: 300047

Control Number: 96038

Expiration Date: 6/10/2017

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE



**Texas Department of
State Health Services**

Asbestos Individual Consultant

SRIHARI L KRISHNAPRASAD

License No. 105478

Control No. 96968

Expiration Date: 2/8/2018

