



Baer Engineering
and Environmental Consulting, Inc.

EXHIBIT 1
May 24, 2012

Williamson County
Facilities Maintenance Department
508 Holly Street
Georgetown, Texas 78628

Sent via electronic mail to dgossett@wilco.org.

Attention: Mr. Dwayne Gossett

Reference: **PROJECT MANUALS FOR ABATEMENT OF ASBESTOS
AND LEAD-BASED PAINT MATERIALS**
Johnson-Almquist House
2800 FM 1660, Hutto, Texas 78634
Baer Engineering Document No. 111060-8E.020

Dear Mr. Gossett:

Baer Engineering and Environmental Consulting, Inc. has completed the attached asbestos abatement plan and Lead Paint Abatement Procedures for the Johnson-Almquist House located at 2800 FM 1660 in Hutto, Texas. The scope of abatement included in the plan is based on our survey report dated December 11, 2011, and our experience with similar projects.

Sincerely,
BAER ENGINEERING AND ENVIRONMENTAL CONSULTING, INC.

Stephanie Ashley
Project Manager
DSHS Asbestos Consultant License No. 10-5713

Attachments: Project Manual - Abatement of Asbestos Materials, dated May 23, 2012
Project Manual – Lead-Based Paint Abatement Procedures

Stephanie Ashley
DSHS INDIVIDUAL ASBESTOS CONSULTANT NO. 105713, EXPIRES 12/10/13

**PROJECT MANUAL
ABATEMENT OF ASBESTOS MATERIALS**

**Johnson-Almquist House
2800 FM 1660
Hutto, Texas**

May 23, 2012



**Prepared For:
Williamson County
Facilities Maintenance Department
508 Holly Street
Georgetown, Texas 78628**

Prepared By:



Baer Engineering and Environmental Consulting, Inc.
7756 Northcross Drive, Suite 211, Austin, Texas 78757
Phone: 512/453-3733 – Fax: 512/453-3316
www.baereng.com

Baer Engineering Project Number 111060.01

Stephanie Ashley

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DSHS INDIVIDUAL ASBESTOS CONSULTANT NO. 105713, EXPIRES 12/10/13

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END OF CERTIFICATION PAGE

<u>Items Included:</u>	<u>Document/Section:</u>
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<u>Function</u>	<u>Representative/Company</u>	<u>Telephone/Fax</u>
Owner	Williamson County Facilities Maintenance Department 508 Holly Street Georgetown, Texas 78628	Voice: 512-873-8099
	Mr. Dwayne Gossett	dgossett@wilco.org
Abatement Consultant	Baer Engineering and Environmental Consulting, Inc. 7756 Northcross Drive, Suite 211 Austin, Texas 78757	Voice: 512-453-3733 Fax: 512-453-3316
	Ms. Stephanie Ashley	sashley@baereng.com
Abatement Contractor	To be determined.	

END OF PROJECT DIRECTORY

PART 1 - GENERAL**1.01 DESCRIPTION**

- A. Perform all planning, administration, execution, and cleaning necessary to safely remove and dispose of ACMs listed in Part 4 of this section.
- B. Consider any other concealed materials suspected to contain asbestos encountered during the project work as ACMs and abate in accordance with this section when disturbance is required to accomplish the project work.
- C. Approval by Owner of various construction activities or methods proposed by Contractor does not constitute an assumption of liability either by the Abatement Consultant or Owner for inadequacy or adverse consequences of said activities or methods.
- D. All work related to disturbance of asbestos materials shall be performed in accordance within the work hours established by the Owner.

1.02 WORK INCLUDED

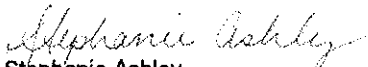
- A. The asbestos materials removal work is identified in Part 4 of this section.
- B. Coordinate and schedule all work with the project general construction contractor, as applicable, to avoid disruption to other construction and building operational activities.
- C. All work required to comply with applicable regulatory requirements even if not specifically stated or identified in the scope of work.

1.03 WORK NOT INCLUDED

- A. Installation of replacement materials where removed by asbestos abatement operations.

1.04 DEFINITIONS

- A. The following definitions pertain to the Work of these Contract Documents.
 - 1. **Abatement** – procedures to decrease or eliminate fiber release from precast, spray- or trowel-applied asbestos-containing building materials. Includes encapsulation, enclosure and removal.
 - 2. **ACM** – asbestos containing material.
 - 3. **Adequately Wet** – sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from ACM, then that material has not been adequately wetted.

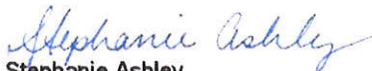


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SECTION 028213 – ASBESTOS ABATEMENT

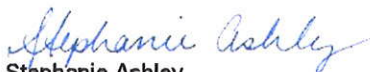
4. **Airlock** – system for permitting ingress or egress of personnel without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 3 feet apart.
5. **Air Monitoring** – the process of measuring the fiber content of a specific volume of air during a stated period of time.
6. **Amended Water** – water to which a surfactant has been added.
7. **ANSI** – American National Standards Institute.
8. **Asbestos Project Manager** – Owner's on-site representative for monitoring abatement Contractor's work for compliance with abatement specifications.
9. **ASTM** – American Society for Testing and Materials.
10. **Class II Asbestos Work** – activities involving the removal of ACM that is not thermal system insulation or surfacing material, including, but not limited to, removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
11. **Clean Room** – an uncontaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment. Also known as the "Change Room".
12. **Critical Barrier** – Seal applied to openings connecting the abatement area with adjacent spaces that will not be included in the containment. Critical barriers shall not be exposed to the gross removal environment. Examples of openings requiring critical barriers include, but are not limited to: HVAC vents and diffusers; doorways; windows; floor, wall, and ceiling penetrations; and air plenums.
13. **Curtained Doorway** – a device to allow ingress or egress from one room to another while minimizing air movement between the rooms. Two curtained doorways spaced a minimum of 3 feet apart to form an airlock.
14. **Decontamination Enclosure System** – a series of connected rooms, with curtained doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment. A worker decontamination enclosure system always contains at least five airlocks (rooms). An equipment decontamination system always contains at least three airlocks (rooms).
15. **Demolition** – a means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility
16. **DSHS** – Texas Department of State Health Services.
17. **Encapsulation** – the sealing of asbestos surfaces involving application of a material (encapsulant) that will envelop or coat the fiber matrix and eliminate fiber fallout and protect against contact damage.
18. **Enclosure** – procedures necessary to completely enclose material containing asbestos behind airtight, impermeable, permanent barriers.
19. **EPA** – United States Environmental Protection Agency.



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20. **Equipment Decontamination Enclosure System** – a decontamination enclosure system for materials and equipment, typically consisting of an airlock, a washroom, and a holding area.
21. **Equipment Room** – a contaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of contaminated clothing and equipment.
22. **Fixed Object (immoveable object)** – a unit of equipment or furniture in the Work Area which cannot be removed from the Work Area.
23. **Glove-bag** – A 6 to 12-mil plastic bag fitted with long-sleeved gloves, a tool pouch, and an opening for amended water and sealant application.
24. **HEPA Filter** – a High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97 percent of asbestos fibers greater than 0.3 microns in length.
25. **HEPA Vacuum Equipment** – vacuuming equipment equipped with a HEPA-filtration system.
26. **Holding Area** – a chamber between the washroom and uncontaminated area in the equipment decontamination enclosure system. The holding area comprises an airlock.
27. **HVAC** – Heating Ventilation and Air Conditioning (HVAC).
28. **Landfill** – a Texas state approved and licensed facility for disposal of asbestos and ACMs.
29. **Leak-tight** – solids and liquids cannot escape or spill out. It also means dust-tight.
30. **Moveable Object** – a unit of equipment or furniture in the Work Area which can be removed from the Work Area.
31. **MSHA** – Mine Safety and Health Administration.
32. **NEC** – National Electrical Code.
33. **NESHAP** – National Emissions Standard for Hazardous Air Pollutants.
34. **NIOSH** – National Institute for Occupational Safety and Health.
35. **OSHA** – Occupational Safety and Health Administration.
36. **Plastic Sheeting** – plastic sheet material of specified thickness used for protection of walls, floors, etc., and used to seal openings into the Work Area.
37. **Regulated Work Area** – the area of actual asbestos removal with access restricted to DSHS asbestos licensees and DSHS inspectors.
38. **Removal** – the act of removing asbestos-containing or contaminated materials from the structure under properly controlled conditions to a suitable disposal site.
39. **Shower Room** – a room constituting an airlock, between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold or warm running water suitably arranged for complete showering during decontamination.
40. **Surfactant** – a chemical wetting agent added to water to improve penetrating ability, thus reducing the quantity of water required to saturate ACMs.
41. **TAHPR** – Texas Asbestos Health Protection Act Rules.



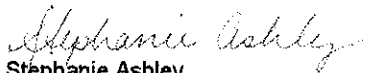
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SECTION 028213 – ASBESTOS ABATEMENT

- 42. **Testing Laboratory** – a DSHS licensed laboratory for performing polarized light microscopy (PLM) or transmission electron microscopy (TEM).
- 43. **Washroom** – a room between the Work Area and the holding area in the equipment decontamination enclosure system. The washroom comprises an air lock.
- 44. **Wet Cleaning** – the process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with amended water, disposing of these cleaning tools as asbestos-contaminated waste.
- 45. **Work Area** – area or areas of Project which undergo abatement or are contaminated.
- 46. **Worker Decontamination Enclosure System** – a decontamination enclosure system for workers, typically consisting of a clean room, an airlock, a shower room, an airlock, and an equipment room.
- 47. **Visible Emissions** – any emissions which are visually detectable without the aid of instruments, coming from asbestos-waste material or construction debris.

1.05 QUALIFICATIONS FOR PERFORMANCE OF WORK

- A. Contractor (or subcontractor) must be appropriately trained in accordance with EPA, NESHAP, and OSHA requirements.
- B. Contractor and worker qualifications for work outside the buildings are regulated by NESHAP. DSHS enforces these regulations in Texas.
 - 1. For asbestos abatement work outside the building (regulated under NESHAP). Project Supervision on-site shall be provided by a minimum of one Job Supervisor, to be approved by Owner prior to the start of work, and shall not be changed without prior approval of Owner. The Job Supervisor shall have completed a 40-hr asbestos competent person supervisor course in accordance with Occupational Exposure to Asbestos Final Rule, 29 CFR Parts 1910 (g)(7)(i) and (o)(4)(i) for Class II asbestos work. All removal workers must have completed an 8-hr asbestos abatement work training course for Class II work in accordance with Occupational Exposure to Asbestos Final Rule, 29 CFR Parts 1910 (k)(9)(iv). All other workers on site but not involved in asbestos abatement must receive asbestos awareness training.
 - 2. For asbestos abatement work inside buildings (regulated under TAHPR). Project Supervision on-site shall be provided by a minimum of one Job Supervisor, to be approved by Owner prior to the start of work, and shall not be changed without prior approval of Owner. The Job Supervisor, Job Foremen, Abatement Workers, and Abatement Company will be appropriately licensed by the DSHS for removal work. All other workers on site but not involved in asbestos abatement must receive asbestos awareness training.



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- C. Work Area supervision shall be provided by a minimum of one experienced Job Foreman for every ten asbestos removal workers or portion thereof utilized on this project. Job Foreman shall remain in the Work Area at all times that work is in progress.

1.06 REFERENCE STANDARDS

- A. Acknowledge, by execution of the Contract, awareness and familiarity with the contents and requirements of the following regulations, codes, standards, and guidance documents. Assume responsibility for the performance of the Work in strict compliance with these documents and for every instance of failure to comply with these documents. The current issue of each document shall govern. Where conflict exists between these documents and the Contract Documents, the more stringent requirements shall apply.
1. EPA Regulations for Asbestos (40CFR 61.140.61.157 and 40CFR 763).
 2. OSHA Asbestos Regulations (29CFR 1910, 29CFR 1926).
 3. EPA Office of Pesticide and Toxic Substances Guidance Document, "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings", EPA 560/5-85-024, June, 1985.
 4. The TAHPR, March 2003.
 5. All federal, state, county, and city codes and ordinances as applicable. Make available for review at the site one copy of EPA, OSHA, and applicable state, county and city regulations governing the Work.

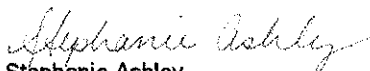
1.07 WORKSITE CONDITIONS

- A. Contractor is hereby advised that asbestos has been determined by the U.S. Government to be a CANCER-CAUSING AGENT. Provide workers with respirators (which, as a minimum, meet the requirements of OSHA 29CFR 1926.1101) and protective clothing during all phases of the work.
- B. Visible Emissions (NESHAP work - exterior) – At no time will visible emissions be allowed during the removal of ACM. If visible emissions are created, work is to stop immediately and all ACM and construction debris is to be thoroughly wetted until emissions are no longer visible.

1.08 PERSONNEL PROTECTION

The contractor shall:

- A. Instruct all workers in the appropriate procedures for personnel protection and asbestos removal prior to commencement of work. Ensure that workers are knowledgeable in these procedures.



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- B. Acknowledge and agree to sole responsibility for enforcing worker protection requirements at least equal to those specified in this Section.
- C. Provide workers with personally issued and marked respiratory equipment approved by NIOSH and MSHA for the type of work being performed.
- D. Provide sufficient replacement filters where respirators with disposable filters are used.
- E. Provide respiratory protection at all times that is in compliance with OSHA requirements. The minimum acceptable respiratory protection used for this project shall be P100 Powered Air Purifying Respirators for all workers.
- F. Be solely responsible for scheduling necessary air sampling by an independent testing laboratory for compliance monitoring of own respiratory protection with OSHA regulations. Pay for all costs associated with such testing.
- G. Permit no visitors, except for governmental inspectors having jurisdiction, in the Work Areas after commencement of asbestos disturbance or removal.
- H. Provide workers with sufficient sets of protective disposable clothing, consisting of full-body coveralls, head covers, gloves, and foot covers of sizes to properly fit individual workers.

1.09 SUBMITTALS

- A. Pre-Job Submittals. These items must be available on-site prior to the start of work.
 - 1. DSHS Contractor License.
 - 2. DSHS Transporter License.
 - 3. DSHS licenses, written physician's medical opinions, worker asbestos acknowledgement forms, asbestos training documentation, respirator training documentation for each employee who works on the Project.
 - 4. DSHS 10-working day notification.
- B. Post-Job Submittals.
 - 1. A copy of the Sign In/Out Log showing the following: date, name, social security number, entering and leaving time, company or agency represented, and reason for entry for all persons entering the Work Areas.
 - 2. An alphabetical listing of each employee and Social Security Number used on the Project and the exact dates on when present in the Work Areas.
 - 3. DSHS licenses, written physician's medical opinions, worker release forms, asbestos training documentation, respirator training documentation of all additional employees used on the Project. Requirements to match those presented in paragraph 1.09A of this Section.

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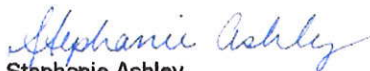
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4. Written report listing all accidents, reportable and/or lost time, which occurred during the Work, identifying personnel and specific details of accident. If no accidents occurred, then submit a letter to that effect. In addition, submit copy of safety meeting minutes.
5. A copy of all manufacturer's literature, procedures, and submittal information presented during the project.
6. Properly completed copies of the Uniform Hazardous Waste Manifest (EPA form 8700 (rev. 3-5)) with the appropriate information completed from the landfill, documenting the disposal of the asbestos-containing/contaminated waste material.
7. A copy of employee air monitoring results or negative exposure assessment relative to OSHA respiratory protection level compliance.
8. Documentation of all completed asbestos abatement activity. This documentation shall include the approximate quantity and locations of ACMs removed. Include a written justification for not removing materials included in the scope of work.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. **Impermeable Containers** - suitable to receive and retain asbestos-containing or contaminated materials until disposal at an approved site and labeled in accordance with OSHA Regulation 29CFR 1926.1101. Containers shall be both air and water tight.
- B. **Plastic Sheetting** - thicknesses as specified, in sizes to minimize the frequency of joints. Use of "spray-on poly" is not permitted. **Must meet requirements of the TAHPR.**
- C. **Surfactant (Wetting Agent)** - mixture of "Dust-Set Amended Water Base" (Matheson Chemical Corporation), or equivalent, and water, mixed to manufacturer's specifications.
- D. **Tape** - glass fiber or other type capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces under both dry and wet conditions.
- E. **Warning Labels and Signs** - as required by OSHA 29CFR 1926.1101.
- F. **Other Materials** - provide all other materials, such as lumber, nails and hardware, which may be required to construct and dismantle the decontamination system and the barriers that isolate the Work Area.



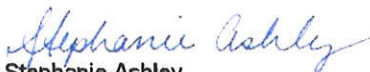
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2.02 TOOLS AND EQUIPMENT

- A. Provide suitable tools for ACM removal.
1. **Air Purifying Equipment** - HEPA Filtration Systems or Electronic Precipitators. Verify that no internal air movement system or purification equipment exhausts contaminated air from inside the Work Area into uncontaminated areas.
 2. **Half-Face Respirator Equipment** - positive pressure, half-face P100 air purifying respirators approved by NIOSH and MSHA for asbestos removal work.
 3. **Scaffolding** - as required to accomplish the specified work and meet all applicable safety regulations.
 4. **Transportation** - as required for loading, temporary storage, transit, and unloading of contaminated waste without exposure to persons or property. Use only enclosed or covered trucks to haul waste containers to prevent loss or damage of containers in route to the landfill.
 5. **Water Sprayer** - utilize airless or other low pressure sprayer for amended water application.
 6. **HEPA Vacuum** – As defined in Section 1.04 of this abatement plan.
- B. The following tools are not suitable for ACM removal operations and are prohibited from the Work Area.
1. Brooms
 2. Electric powered grinders
 3. Air Blowers

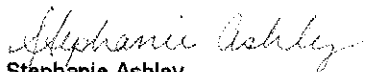
PART 3 - EXECUTION**3.01 PREPARATION**

- A. Coordinate sequence of Work Area preparation throughout the project with the Simon Property Group and other trades to properly segregate Work Areas from other construction activities being performed. The following Work Area preparation requirements apply to all Work Areas.
1. Secure Work Area with adequate barriers to prevent unauthorized entry to abatement Work Areas. If required, construction barriers to be constructed using wood studs and plywood sheeting. Wood studs shall be minimum 2-inch by 4-inch studs, and plywood sheeting shall be minimum 3/8-inch thickness. Position studs no greater than 24 inches on center to provide rigid barrier construction. Barriers to be a minimum of 8-feet high.
 2. Secure Work Areas outside with a minimum of Asbestos Warning Barrier tape to prevent unauthorized entry to abatement Work Areas, as required. Barriers are to surround the entire Work Area. As an alternate approach, abatement operation shall be continuous or security personnel shall be



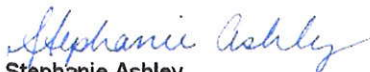
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- present at entry to Work Area at all times to prevent unauthorized entry to abatement Work Areas.
3. Flammable materials shall not be stored in the Work Area.
 4. Maintain emergency and fire exits from the Work Areas, or establish alternative exits satisfactory to fire officials. Provide fire extinguishers inside and outside the Work Area.
 5. Provide temporary power and lighting as necessary to maintain safe and comfortable work environment.
- B. Preparation of Work Area Enclosure for Removal of Flooring Material and Popcorn Ceiling Texture.
1. Segregate the work areas as described in 3.01A above. Notify Asbestos Project Manager for observation of the critical barriers prior to pre-cleaning work area.
 2. Remove movable objects from the work area as necessary to access asbestos-containing materials and store in a location outside of the work area designated by the Owner, or dispose of as construction waste as directed by the Owner.
 3. HEPA-vacuum and then wet clean all objects that will remain in the work area.
 4. Notify the Asbestos Project Manager for observation to determine completeness of cleaning prior to applying plastic sheeting.
 5. Seal all objects remaining in the work area with a minimum of one layer of 6-mil plastic sheeting.
 6. Install one layer of 6-mil plastic sheeting over walls, and on floors where no flooring removal is taking place.
 7. Install a decontamination unit with an airlock to allow controlled ingress and egress to the work area.
 8. Maintain a Sign In/Out Log in the immediate area of the entrance to the work area to be utilized by every person, each time upon entering and leaving the work area.
 9. Provide worker and equipment decontamination units in compliance with EPA guidelines concerning number, size and placement of airlocks, etc. Provide one decontamination unit for every 10 workers inside the work area. Shower in worker decontamination unit to open into airlock on both contaminated and uncontaminated sides. Decontamination units are to be constructed of appropriate materials (including plastic sheeting) to provide airtight barriers and allow continuous diminished pressure to be maintained in work areas. Post OSHA decontamination procedures in Change Room for duration of Project. Trap shower waste water using filters having a maximum pore size of not larger than 1.0 micron, and drain into a sanitary sewer. Replace contaminated filters when they become clogged but not less than every third working day. Dispose of filters as contaminated waste.
 10. Place each work area under diminished air pressure utilizing HEPA filtration systems which comply with ANSI Z9.2-79, local exhaust



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- ventilation. Allow no air movement system or air filtering equipment to discharge unfiltered air outside the work area. Maintain a diminished pressure in the work area continuously (24 hours per day) from the start of removal or disturbance of asbestos-containing material until the area is decontaminated and determined as such by the required air testing. Ensure that the air within the workspace is changed at least once every 15 minutes. Submit the proposed route of exhaust to Asbestos Project Manager prior to initiating its use.
11. Install a recording manometer to monitor differential pressure inside the work area. Maintain a minimum differential pressure of 0.02 inches of water inside the work area with respect to outside the work area.
 12. Notify the Asbestos Project Manager for observation of the completion of work area preparation prior to disturbing asbestos-containing material.
- C. Preparation of Exterior Work Area for Component Removal of Window Pane Glazing Compound.
1. Segregate the work areas as described in 3.01A above
 1. Place two layers of 6-mil plastic sheeting on the inside of the wall penetration in all rooms where window frame and glazing compound removal work will occur at the exterior of the building. The plastic sheeting shall completely seal off the interior building space from the exterior work area.
 2. Where window sealant caulking removal work will occur, install a curtained doorway consisting of one layer of 6-mil plastic sheeting with barrier warning tape on the entrance of each door to all rooms adjacent to work area to restrict access to interior spaces during abatement activity.
 3. Inspect the inside floor and ground adjacent to the work area for asbestos debris and remove and dispose of as asbestos waste.
 4. Cover the exterior horizontal surfaces below the window work area (where applicable) and any adjacent surfaces with two layers of 6-mil plastic sheeting a minimum of 5 feet out from the extent of the work area.
 5. Maintain a Sign In/Out Log in the immediate area to be utilized by every person, each time upon entering and leaving the work area.
 6. Notify the Asbestos Project Manager for observations of the completed work area preparation prior to disturbing asbestos-containing material.
- D. Preparation of Exterior Work Area for Removal of Roofing Materials.
1. Segregate the work areas as described in 3.01A above
 2. Cover the exterior horizontal surfaces below the work area and any adjacent surfaces with two layers of 6-mil plastic sheeting a minimum of 5 feet out from the extent of the work area.
 3. Provide a covered chute to a waste bin on the ground or a lift for removal of asbestos wastes from the roof in a manner that prevents visible emissions.
 4. Maintain a Sign In/Out Log in the immediate area to be utilized by every person, each time upon entering and leaving the work area.



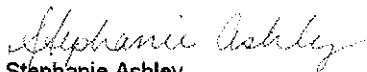
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5. Notify the Asbestos Project Manager for observations of the completed work area preparation prior to disturbing asbestos-containing material.

3.02 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

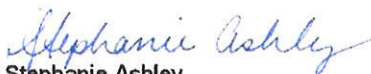
- A. Remove and properly dispose of all ACMs scheduled for removal in the Contract Documents in accordance with the methods and procedures outlined in the OSHA 29CFR 1926.1101 and as more stringently specified herein.
- B. Removal of Flooring Material in a Work Area Enclosure.
 1. Prepare work area as previously specified.
 2. Spray areas of asbestos-containing material as it is removed with amended water using spray equipment capable of providing a "mist" application to reduce the release of fibers. Spray the asbestos-containing material repeatedly during work process to maintain wet condition but do not use excessive amounts of water.
 3. Place removed floor tile or floor sheeting material in sealable plastic bags of 6-mil minimum thickness. Sheet flooring must be cut, not torn. Place sealed asbestos debris in second 6-mil plastic bag, appropriately labeled, and remove from work area.
 4. Once the floor tile or floor sheeting has been removed, apply floor tile/sheeting mastic remover to remove the remaining mastic on the floor. Use the mastic remover in accordance with the manufacturer's recommendations.
 5. After removal of mastic material, HEPA-vacuum and wet clean all surfaces in the work area to remove residual accumulated material. Continue wet cleaning until surfaces are visibly free of material.
 6. Notify the Asbestos Project Manager for observation of the completion of cleaning. Surfaces will be considered clean when free from dust, dirt, residue, film, or discoloration resultant from abatement operations or other activities subordinate to these operations.
- C. Removal of Popcorn Ceiling Texture in a Work Area Enclosure.
 1. Prepare work area as previously specified.
 2. Spray areas of asbestos-containing material as it is removed with amended water using spray equipment capable of providing a "mist" application to reduce the release of fibers. Spray the asbestos-containing material repeatedly during work process to maintain wet condition but do not use excessive amounts of water.
 3. Carefully scrape popcorn ceiling texture from ceiling.
 4. Place the texture material in sealable plastic bags of 6-mil minimum thickness. Place sealed asbestos debris in second 6-mil plastic bag, appropriately labeled, and remove from work area.
 5. After removal of the texture, HEPA-vacuum and wet clean all surfaces in the work area to remove residual accumulated material. Continue wet cleaning until surfaces are visibly free of material.



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6. Notify the Asbestos Project Manager for observation of the completion of cleaning. Surfaces will be considered clean when free from dust, dirt, residue, film, or discoloration resultant from abatement operations or other activities subordinate to these operations.
- D. Removal of Window Glazing Compound from Window Frames.
1. Prepare work area as previously specified.
 2. Remove window frames intact as component systems. As they are removed, wrap the frames in two layers of plastic sheeting of 6-mil minimum thickness, label appropriately as asbestos waste, and remove from work area. Any asbestos-containing debris generated during the window frame removal is to be disposed of as asbestos-containing waste. Place sealed asbestos debris in second 6-mil plastic bag, label appropriately as asbestos waste, and remove from work area.
 3. If ACM debris, generated by abatement activities, manages to get past the plastic barriers placed over each window at the inside the facility, all work is to stop immediately and the Job Supervisor is to be immediately notified.
 4. After removal of asbestos-containing material, wet clean and HEPA-vacuum all surfaces in the work area to remove residual accumulated material. Continue wet cleaning until surfaces are visibly free of material.
 5. Notify Job Supervisor or Foreman and the Asbestos Project Manager, if present, for observation of the completion of cleaning. Surfaces will be considered clean when free from dust, dirt, residue, film, or discoloration resulting from abatement operations or other activities subordinate to these operations.
 6. All waste and cleaning materials are to be properly manifested prior to disposal.
- E. Removal of Roofing Materials.
1. Prepare Work Area as previously specified.
 2. Remove roofing materials using either manual methods or slicing or other methods that do not sand, grind, cut, or abrade the materials. **Power saws are not allowed for cutting roofing materials.**
 3. Spray ACMs as they are removed with amended water using spray equipment capable of providing a "mist" application to reduce the release of fibers. Spray the ACM repeatedly during the work process to maintain wet condition but do not use excessive amounts of water.
 4. Place removed roofing materials in sealable plastic bags of 6-mil minimum thickness. Place sealed asbestos debris in second 6-mil plastic bag, appropriately labeled, and remove from Work Area.
 5. Place bags in covered chute to a waste bin on the ground or onto a lift for removal of waste ACM in a manner to prevent visible emissions.
 6. HEPA-vacuum and wet clean all surfaces in the Work Area to remove residual accumulated material. Continue wet cleaning until surfaces are visibly free of material.



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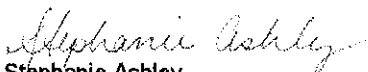
7. Notify the Asbestos Project Manager for observation of the completion of cleaning. Surfaces shall be considered clean when free from dust and debris resultant from abatement operations.

3.03 CLEAN-UP AND CLEARANCE TESTING

- A. Provide general clean-up of Work Area concurrent with the removal of all ACMs. Dispose of debris from removal operation, used cleaning materials, unsalvageable materials and any other materials remaining in the Work Area. Consider the materials to be contaminated and dispose of accordingly.
- B. HEPA-vacuum and wet clean all surfaces in the Work Area. Clean all equipment and materials used in the Work Area and remove from Work Area. Surfaces will be considered clean when free from dust, dirt, residue, film, or discoloration resultant from abatement operations or other activities subordinate to these operations.
- C. Final Air Clearance. Consider work areas and all other decontaminated and cleaned areas clean when:
 1. Level of cleanliness is approved by Asbestos Project Manager.
 2. Upon approval of cleanliness by Asbestos Project Manager, air samples shall be collected using aggressive sampling.
 3. Air shall be considered clean and the removal shall be considered complete if the air drawn for each of the samples collected within the regulated area is equal to or greater than 1,250 liters of air and the average concentration of asbestos as analyzed by the PCM Method does not exceed 0.01 f/cc.
 4. The Asbestos Project Manager will determine the number of clearance samples to be collected during the Final Air Clearance Testing. Air clearance testing is not required for roofing or window work.
 5. Once Final Air Clearance Testing has passed, the contractor will spray encapsulant prior to removal of the containment. Containment materials will be disposed of as asbestos contaminated waste.

3.04 DISPOSAL OF CONTAMINATED WASTE

- A. Wet clean bags of ACM waste and place bagged waste into covered buggies for transport to the lockable, fully enclosed, metal waste disposal container.
- B. Transportation to landfill shall be performed in accordance with all federal, state, and local laws and regulations.
 1. Place bags in the enclosed waste disposal container, which has been lined with a minimum of one layer of 6-mil plastic sheeting.
 2. Transport contaminated waste using a transporter licensed by the DSHS to transport asbestos waste.



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SECTION 028213 – ASBESTOS ABATEMENT

3. Provide a properly completed and legible copy of the Uniform Hazardous Waste Manifest (EPA form 8700 (rev. 3-5)) for transportation of all contaminated waste to landfill.
- C. Remove asbestos-containing waste materials, including labeled bags and materials in lined trucks or dumpsters, and transport to an approved landfill for disposal as follows:
1. Dispose of treated, packaged, labeled, asbestos-containing waste material in accordance with EPA 40CFR 61.150.
 2. Allow only sealed plastic bags or impermeable containers to be deposited in landfill.
 3. Ensure that there are no visible emissions to the outside air from site where materials and waste are deposited.
 6. Submit a complete set of copies of receipts from authorized representative of landfill operator with the post-job submittals.

PART 4 - ADDITIONAL NOTES AND FORMS

4.01 SCOPE OF ASBESTOS ABATEMENT WORK

- A. General Asbestos Abatement Notes
1. The contractor is responsible to visit the Work Areas and verify the quantity and extent of work related to the removal of the asbestos materials prior to submitting a price bid to perform the work or executing any work.
 2. Remove the following (see attached drawing):

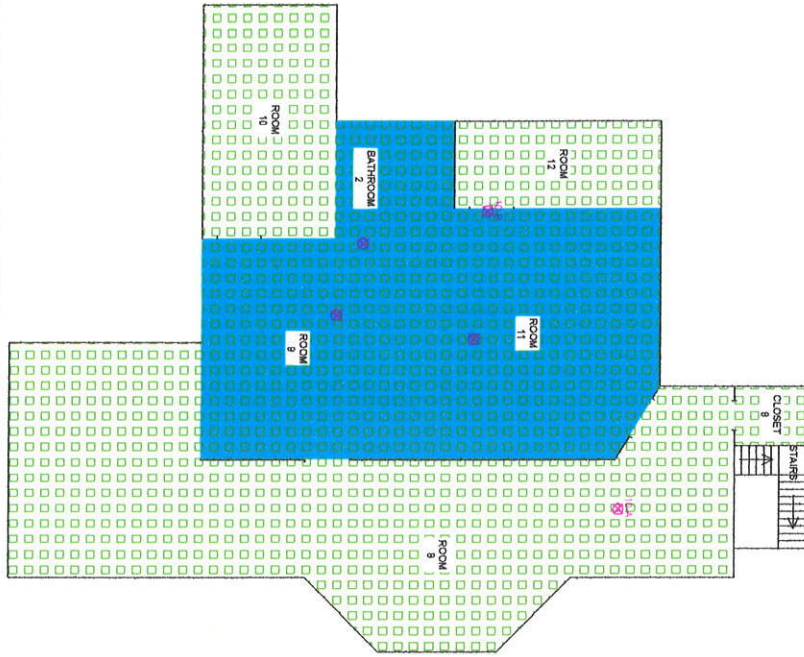
MATERIAL	LOCATION	QUANTITY
Popcorn Ceiling Texture	Rooms 1, 4, 5, 6, 7, 9, 11, Bathrooms 1 and 2, Closet Bathroom 1, Closets 4a, 4b, Kitchen, Stairs (1 st Floor)	1,800 square feet
Yellow Pebble Pattern Sheet Vinyl Flooring with Clear Adhesive	Rooms 6, 7, Pantry, Kitchen	550 square feet
Yellow Small Square Pattern Sheet Vinyl Flooring with Clear Adhesive	Rooms 8 through 12, Closet 8, Bathroom 2	1,400 square feet
Yellow Marble Pattern Sheet Vinyl Flooring with Yellow Mastic	Bathroom 1	60 square feet
White Window Glazing	Exterior of Residence	800 linear feet
Black Roof Mastic at Seams and Penetrations	Roof	1,800 linear feet

END OF SECTION

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SECOND FLOOR



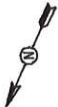
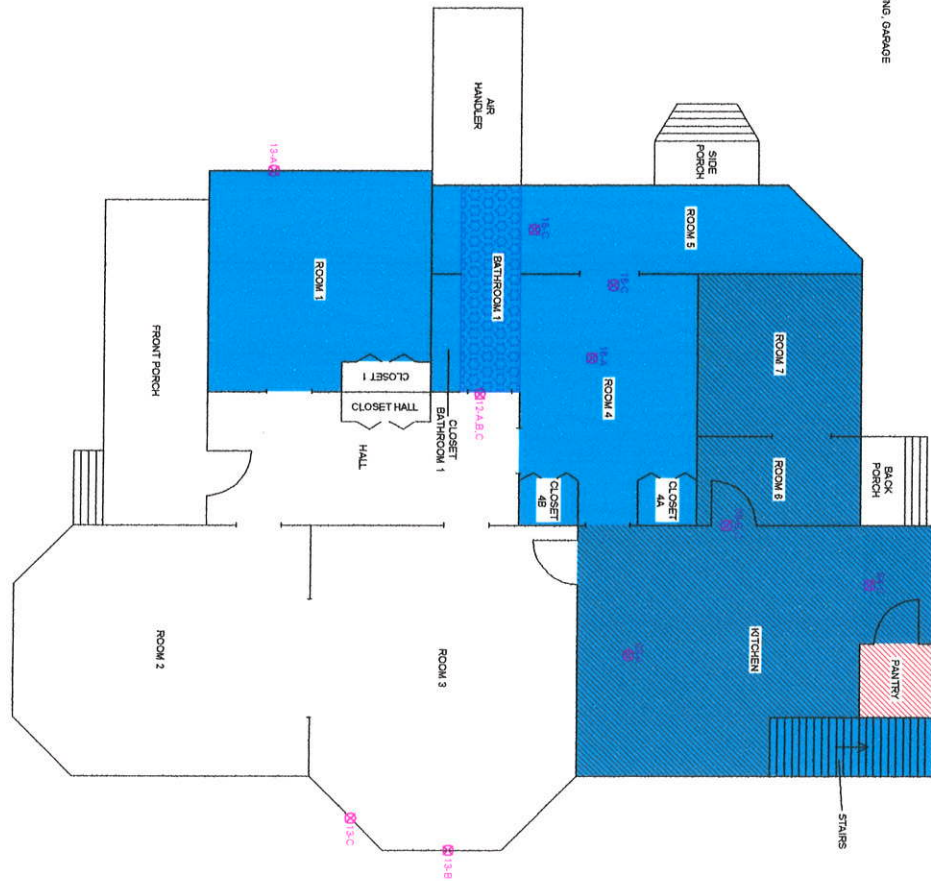
Legend

	POPCORN CEILING TEXTURE
	YELLOW PEBBLE PATTERN SHEET VINYL FLOORING WITH CLEAR ADHESIVE
	YELLOW SMALL SQUARE PATTERN SHEET VINYL FLOORING WITH CLEAR ADHESIVE
	YELLOW MARBLE PATTERN SHEET VINYL FLOORING WITH YELLOW MASTIC
	WHITE WINDOW GLAZING

- NOTES:**
1. BLACK ROOF MASTIC AT SEAMS AND PENETRATIONS LOCATED THROUGHOUT THE ROOF.

BARN, OUTBUILDING, GARAGE

FIRST FLOOR



Asbestos Consulting Agency License No. : 100002
Baer Engineering
and Environmental Consulting, Inc.

DRAWN BY: RAW	CHECKED BY: MM
APPROVED BY: SA	DATE: December, 2011
APPROXIMATE SCALE: 1/8" = 1'-0"	DRAWING NO.: 111060.01

Asbestos Material Location Plan
 Johnson Almquist House:
 House
 Hutto, Texas

PROJECT MANUAL LEAD-BASED PAINT ABATEMENT PROCEDURES

**JOHNSON-ALMQUIST HOUSE
2800 FM 1660
HUTTO, TEXAS**



May 24, 2012

Prepared For:

**Williamson County
Facilities Maintenance Department
508 Holly Street
Georgetown, TX 78628**

Prepared By:



Baer Engineering and Environmental Consulting, Inc.
7756 Northcross Drive, Suite 211, Austin, Texas 78757
Phone: 512.453.3733 Fax: 512.453.3316 Toll Free: 800.926.9242
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Baer Engineering Project Number 111060.020

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END OF CERTIFICATION PAGE

<u>Items Included:</u>	<u>Document/Section:</u>
Cover Page	00001
Certification Page	00002
Table of Contents.....	00003
Project Directory	00004

SPECIFICATIONS

Division 1 - General Requirements

Division 2 - Site Work

Lead-Based Paint Abatement	028319
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END OF TABLE OF CONTENTS

<u>Function</u>	<u>Company/Representative</u>	<u>Telephone/Email</u>
Owner	Williamson County Facilities Maintenance Department 508 Holly Street Georgetown, TX 78628 Mr. Dwayne Gossett	254-654-1495 dgossett@wilco.org
Abatement Consultant	Baer Engineering and Environmental Consulting, Inc. 7756 Northcross Drive, Suite 211 Austin, Texas 78757 Ms. Stephanie Ashley Mr. Christopher L. Gray	512.453.3733 sashley@baereng.com cgray@baereng.com

END OF PROJECT DIRECTORY

b

PART 1-GENERAL

1.01 DESCRIPTION

- A. Perform all planning, administration, execution, and cleaning necessary to safely remove and dispose of lead-based paint (LBP) materials listed in Part 4 of this section.
- B. Notify the project Abatement Consultant if any concealed painted materials are encountered during the project work. An X-Ray Fluorescence (XRF) analyzer will be used by the Lead Project Manager to test the material for lead content.
- C. Be aware that the house has asbestos containing materials (ACMs). Specifications for asbestos abatement are provided in the Project Manual for Abatement of Asbestos Materials, dated May 24, 2012.
- D. Approval of, or acceptance by, Owner of various construction activities or methods proposed by Contractor does not constitute an assumption of liability either by the Abatement Consultant or Owner for inadequacy or adverse consequences of said activities or methods.
- E. All work related to disturbance of LBP materials shall be performed in accordance with work hours established by the Owner.

1.02 WORK INCLUDED

- A. The LBP materials to be removed are identified in Part 4 of this section.
- B. Coordinate and schedule all work with Williamson County (Owner).
- C. General Contractor shall notify Owner within 24 hours before work begins and within 24 hours after work is completed.
- D. All work shall comply with applicable regulatory requirements, even if not specifically stated or identified in the scope of work.

1.03 DEFINITIONS

- A. The following definitions pertain to the Work of these Contract Documents.
1. **Abatement** – measures designed to permanently eliminate LBP materials including encapsulation, enclosure and removal.
 2. **Air Monitoring** - the process of measuring the lead content of a specific volume of air during a stated period of time.
 3. **Adequately wet** – sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from the work operations, then that material has not been adequately wetted.
 4. **Airlock** - system for permitting ingress or egress of personnel without permitting air movement between a contaminated area and a uncontaminated area, typically consisting of two curtained doorways at least 3 feet apart.
 5. **Amended water** - water to which a surfactant has been added.
 6. **ANSI** - American National Standards Institute.
 7. **ASTM** - American Society for Testing and Materials.
 8. **Biological Monitoring** - The analysis of a person's blood and/or urine to determine the lead levels in the body
 9. **Clean Room** - an uncontaminated area or room which is part of the worker decontamination enclosure system, with provisions for storage of workers' street clothes and protective equipment. Also known as the "Change Room".
 10. **Cleaning Solution** - Solution which contains at least one ounce of 5 percent trisodium phosphate (TSP) detergent to each gallon of hot water or according to the manufacturer's recommendations.
 11. **Critical Barrier** - Seal applied to openings connecting the abatement Work Area with adjacent spaces that will not be included in the Work Area(s). Critical barriers shall not be exposed to the gross removal environment. Examples of openings requiring critical barriers include, but are not limited to: HVAC vents and diffusers; doorways; windows; floor, wall, and ceiling penetrations; and air plenums.
 12. **Curtained Doorway** - a device to allow ingress or egress from one room to another while minimizing air movement between the rooms. Two curtained doorways spaced a minimum of 3 feet apart from an airlock.
 13. **Decontamination Enclosure System** - a series of connected rooms, with curtained doorways between any two adjacent rooms, for the decontamination of workers or of materials and equipment. A worker decontamination enclosure system always contains at least five airlocks (rooms). An equipment decontamination system always contains at least three airlocks (rooms).
 14. **DSHS** – Texas Department of State Health Services.
 15. **Encapsulation** - the sealing of painted surfaces involving application of a material (encapsulant) that will envelop or coat the lead paint and protect against contact damage.
 16. **EPA** - United States Environmental Protection Agency.

SECTION 028319 – LEAD-BASED PAINT ABATEMENT PROCEDURES

17. **Grinding** – to reduce to powder or small fragments and includes mechanical chipping or drilling.
18. **HEPA Filter** - a High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97 percent of asbestos fibers greater than 0.3 microns in length.
19. **HEPA Vacuum Equipment** - vacuuming equipment equipped with a HEPA-filtration system.
20. **HVAC** – Heating Ventilation and Air Conditioning (HVAC).
21. **Landfill**- a Texas state approved and licensed facility for disposal of lead-based materials.
22. **Lead Abatement Project** - any work performed to permanently eliminate lead paint hazards.
23. **Lead-based Substance** - any paint, plaster or other surface coating material containing measurable concentrations of lead.
24. **Lead Project Manager** - Owner's on-site representative for monitoring abatement Contractor's work for compliance with abatement specifications.
25. **Leak-tight**- solids and liquids cannot escape or spill out. It also means dust-tight.
26. **Moveable Object** - a unit of equipment or furniture in the Work Area which can be removed from the Work Area.
27. **MSHA** - Mine Safety and Health Administration.
28. **NEC** - National Electrical Code.
29. **NESHAP** - National Emission Standards for Hazardous Air Pollutants.
30. **NIOSH** - National Institute for Occupational Safety and Health.
31. **OSHA** - Occupational Safety and Health Administration.
32. **Plastic Sheeting** - plastic sheet material of specified thickness used for protection of walls, floors, etc., and used to seal openings into the Work Area.
33. **Removal** - the act of removing lead-based or contaminated materials from the structure under properly controlled conditions to a suitable disposal site.
34. **Shower Room** - a room constituting an airlock, between the clean room and the equipment room in the worker decontamination enclosure system, with hot and cold or warm running water suitably arranged for complete showering during decontamination.
35. **Surfactant** - a chemical wetting agent added to water to improve penetrating ability, thus controlling dust that could become airborne.
36. **TCLP** - EPA Toxic Characteristic Leaching Procedure (TCLP) for determining toxicity characteristics of waste materials.
37. **TSP** - Trisodium Phosphate.
38. **Wet Cleaning** - the process of eliminating lead contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with amended water or TSP solution, disposing of these cleaning tools as contaminated waste.
39. **Work Area** – regulated area or areas of Project that undergo abatement or are contaminated under controlled, limited access.
40. **Worker Decontamination Enclosure System** - a decontamination enclosure system for workers, typically consisting of a clean room, an airlock, a shower room, an airlock, and an equipment room.

SECTION 028319 – LEAD-BASED PAINT ABATEMENT PROCEDURES

41. **Visible Emissions** – any emissions which are visually detectable without the aid of instruments, coming from the work operations.

1.04 QUALIFICATIONS FOR PERFORMANCE OF WORK

- A. Contractor (or subcontractor) engaged to perform the Work of this Section shall have a valid Lead Firm Certification issued by the DSHS and be a DSHS-licensed asbestos abatement firm.
- B. Maintain on site a DSHS-licensed Asbestos Abatement Supervisor, approved by the Owner prior to the start of the Work of this Section. The supervisor shall not be changed without prior approval from Owner.
- C. Use only trained and experienced DSHS-licensed Asbestos Abatement Workers to perform the Work in this Section.
- D. Comply with the Lead; Renovation, Repair and Painting Program rule (40 CFR Part 745). Contractor must be an EPA Lead-Safe Certified Firm and provide at least one worker who has attended an 8-hour training program provided by an EPA-accredited trainer. A properly trained worker must be onsite at all times while this work is being performed.

1.05 REFERENCE STANDARDS

- A. Contractor acknowledges awareness and familiarity with the contents and requirements of the following regulations, codes, standards, and guidance documents. Contractor assumes responsibility for the performance of the work in strict compliance with these documents and for every instance of failure to comply with these documents. The current issue of each document shall govern. Where conflict exists between these documents and the Contract Documents, the more stringent requirements shall apply.
 - 1. Environmental Protection Agency (EPA) Regulations: Regulations Identifying Hazardous Waste (40CFR 261); Regulations for Hazardous Waste Generators (40CFR 262); Regulations for Hazardous Waste Transporters (40CFR 263); Lead-Based Paint Poisoning Prevention in Certain Residential Structures (40CFR 475).
 - 2. Occupational Safety and Health Administration (OSHA) Regulations: Respiratory Protection Standard (29CFR 1910.134); General Industry Standards for Lead (29CFR 1910.1025) and Construction Industry Standards for Lead (29CFR1926.62); Hazard Communication Program (29CFR 1926.59).
 - 3. Department of Housing and Urban Development (HUD) Lead-Based Paint Guidelines for Public and Indian Housing (55CFR 14556-14789).
 - 4. U.S. Department of Transportation (DOT) Hazardous Material Regulations (49CFR 171-179).
 - 5. EPA Resource Conservation and Recovery Act (RCRA).
 - 6. National Institute of Occupational Safety and Health (NIOSH) Occupational Health Guidelines for Chemical Hazards (NIOSH 81-123).

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7. American National Standard Institute (ANSI) Publication on Practices for Respiratory Protection (Z88.2-80).
8. Texas Environmental Lead Reduction Rules, amended May 10, 2005, enforced by the Department of State Health Services
9. All federal, state, county, and city codes and ordinances, as applicable. Make available for review at the site one copy of EPA, OSHA, HUD, and applicable state, county and city regulations governing the Work.

1.06 WORKSITE CONDITIONS

Worker Procedures: The Contractor is hereby advised that the U.S. Government has determined lead to be a HIGHLY TOXIC METAL, producing a range of adverse health effects. Provide workers with respirators, which, as a minimum, meet the requirements of OSHA 29 CFR 1910.134, and protective clothing as specified herein during all phases of the Work and until final observations and/or testing is completed.

1.07 PERSONNEL PROTECTION

- A. Comply with all the regulatory requirements for lead monitoring in accordance with OSHA's CFR 1926.62 and 1910.1025 and/or all applicable federal, state and local regulations, and/or the Contract Documents, whichever is more stringent.
- B. Provide blood lead level testing for workers prior to and at the completion of the Work.
- C. Prior to commencement of work, instruct all workers in the appropriate procedures for personnel protection and lead removal. Ensure that workers are knowledgeable in these procedures.
- D. Acknowledge and agree to sole responsibility for enforcing worker protection requirements at least equal to those specified in this Section.
- E. Provide respiratory protection and protective clothing that meets the requirements of OSHA 29 CFR 1926.62 and 29CFR 1910.1025 and ensure compliance with all OSHA requirements. CONTRACTOR will specify the respiratory protection and protective clothing that will be used for each method of lead abatement, including component removal, waste handling, and paint scraping and sanding in his site Health and Safety Plan. CONTRACTOR'S Health and Safety Plan will also include lead removal decontamination and work procedures to be followed by workers, which will also be posted in appropriately designated common areas. Provide workers with personally issued and marked respiratory equipment approved by NIOSH and MSHA for the type of work being performed. Where respirators with disposable filters are used, provide sufficient filters for replacement as necessary.

When not in violation of the above, the minimum acceptable respiratory protection used for this project shall be half-face dual cartridge respirators with P100 filter

SECTION 028319 – LEAD-BASED PAINT ABATEMENT PROCEDURES

cartridges. Provide additional "piggy-back" cartridges recommended by the chemical manufacturer whenever chemicals are used.

- F. Be solely responsible for scheduling necessary air sampling by an independent testing laboratory for compliance monitoring of own respiratory protection with OSHA regulations. Pay for all costs associated with such testing.
- G. Permit no visitors, except for governmental inspectors having jurisdiction, or as authorized by Owner, in the Work Areas after commencement of lead disturbance or removal.
- H. Provide workers with sufficient sets of protective disposal clothing, consisting of full-body coveralls, head covers, gloves, and foot covers, of sizes to properly fit individual workers.
- I. Leave reusable equipment, apparel and protection devices (excluding respirators) in designated area until the end of the lead abatement work, at which time such items shall be disposed of as contaminated waste or decontaminated for reuse.
- J. Provide and post in an appropriately designated common area the lead removal decontamination and work procedures to be followed by workers.

1.08 SUBMITTALS

- A. Pre-Job Submittals – Provide the following submittals to the Abatement Consultant and obtain approval prior to proceeding with any of the work. Provide updated submittal information where prior submittal information has been revised or superseded.
 - 1. Copy of insurance certificate issued and transmitted to Owner by Contractor's insurance carrier listing all coverage and listing the Owner and Baer Engineering as additional insureds.
 - 2. A copy of the Contractor's (lead firm), Job Supervisor's, and all workers' DSHS certifications for lead.
 - 3. A copy of the Contractor's EPA Lead-Safe Certification and EPA-accredited 8-hour training documentation for at least one worker.
 - 4. Proposed preliminary progress schedule for the Work. Identify proposed manpower loading for the Work.
 - 5. Lead paint removal work procedures or practices to be used on the project and methods of protecting historic materials. Provide a written description of basic work practices intended for use on this project.
 - 6. Contractor's site Health and Safety Plan addressing paint removal techniques, worker protection methods and equipment, waste handling and disposal procedures, worker decontamination procedures and equipment, and emergency notification and response procedures. Also include a project directory of telephone numbers and locations of emergency services, including but not limited to fire, ambulance, doctor, hospital, and police.
 - 7. Personnel submittals.

SECTION 028319 – LEAD-BASED PAINT ABATEMENT PROCEDURES

- a. General certifications from Contractor.
 - (1.) Written certification that each and every worker involved with lead removal to be used on the project by Contractor or subcontractor is actively involved in a medical surveillance and respiratory protection plan in accordance with OSHA and other regulatory requirements.
 - (2.) Written physician's statement that each and every worker has received pre-work blood lead level testing.
 - (3.) Written certification that each and every employee involved with lead removal to be used on the project by Contractor or sub-contractor has had instruction on the hazards of lead exposure, protective dress, and on all aspects of work procedures and protective measures regarding lead removal in an EPA approved course, as required by state and federal laws and regulations.
 - b. Personnel listings
 - (1.) Project directory of Contractor and sub-contractors' key personnel (supervisors, foremen and any additional project managers) including names, work, home, and cell phone numbers.
 - (2.) Listing of supervisory personnel (including foremen) and their experience, qualifications and training.
 - (3.) Alphabetical listing of workers to be used on project, including DSHS license numbers and dates of latest physical examination.
8. Manufacturer's Data
- a. Contractor shall provide data naming the manufacturer of respirator equipment and showing compliance with OSHA, MSHA, EPA, and all other pertinent regulatory agencies.
 - b. Manufacturer's specifications for vacuum equipment, and respiratory protection equipment, as well as any special tools or safety equipment to be used on this project.
 - c. Any special equipment, techniques, etc., proposed for use on this Project, including pressure washing, vacuum systems, and mechanical removal systems.
9. Specimen copy of Sign In/Out Log form to be used indicating the following: date, name, DSHS license number, entering and leaving time and company or agency represented.
10. Written Hazard Communication Program issued to the Owner, per OSHA Hazardous Communication Standards (29 CFR 1910.1200). Include a listing of all chemicals to be used during the project with material safety data sheets (MSDS).
11. Specimen copy of the Uniform Hazardous Waste Manifest EPA form 8700-22 (rev. 3-05) with the appropriate information completed and a transportation log, including but not limited to, documenting specific manifest number, date, time of day, and amount of waste material transported from the Work Area to the proposed waste dump site.

SECTION 028319 – LEAD-BASED PAINT ABATEMENT PROCEDURES

12. Identify arrangements for transport and disposal of lead-based materials. Include name, address, telephone number and copy of DSHS license of transporter and type of container to be used for transport.
13. Identify the state registered landfill disposal site which is proposed for use in disposing of the lead-based waste generated by the work. Include name of owner/operator, address and telephone number. Submit certification that disposal site to be used meets all EPA and DSHS regulatory standards.
14. Submit updated or revised Pre-Job Submittals as the work progresses.

B. Post-Job Submittals

1. A copy of the Sign In/Out Log showing the following: date, name, DSHS license number, entering and leaving time, company or agency represented and reason for entry for all persons entering the Work Areas.
2. An alphabetical listing of each employee with their DSHS certification number and EPA lead accreditation information used on the Project, and the exact dates on which present in the Work Areas.
3. A copy of employee monitoring test results relative to OSHA respiratory protection level compliance for employees, subcontractors and visitors.
4. A physician's written statement that each and every worker received post-work blood lead level testing.
5. Written report listing all accidents, reportable and/or lost time, which occurred during the Work, identifying personnel and specific details of accident. If no accidents occurred, then submit a statement to that effect. In addition, submit copy of safety meeting minutes.
6. Properly completed copies of the Uniform Hazardous Waste Manifest EPA form 8700-22 (rev. 3-05) with the appropriate information completed from the landfill, documenting the disposal of the lead-based/contaminated waste material.
7. Tipping receipts from the landfill.
8. Copies of all notifications and amendments if not previously submitted.
9. Documentation of all completed lead removal activity. This documentation shall include diagrams identifying all areas where lead paint was removed and the approximate quantity, and areas where lead paint was left in place. Include a written justification for not removing materials included in the scope of work. This documentation shall be submitted in hard copy and in portable document format (PDF).

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. **Cleaning Solution** - Provide cleaning products in accordance with the manufacturers' recommendations. Cleaning solution shall be, at a minimum, a mixture of at least one ounce of 5 percent TSP detergent to each gallon of hot water or per manufacturer's instructions.

- B. **Impermeable Containers** - Shall be suitable to receive and retain lead-based or contaminated materials until disposal at an approved site and shall be labeled in accordance with U.S. DOT 49CFR 171-179. Containers shall be both air and water tight. As a minimum, use one of the following types of impermeable containers:
1. All lead-based waste (LBP material debris) generated as a result of work activities shall be placed in 6-mil, plastic bags. The bagged waste shall then be placed in sealed DOT 17C open top 55 gallon drums lined with 6-mil plastic bags sized to fit within each drum.
 2. All lead-contaminated disposable items used in the course of the work (rags, sorbents, protective clothing, plastic sheeting, etc.) shall be placed in 6-mil, plastic bags. The bagged waste shall then be placed in sealed DOT 17C open top 55 gallon drums lined with 6-mil plastic bags sized to fit within each drum. Contractor shall not place lead-based waste in the same drum as the items described in this paragraph.
 3. All liquids generated as a result of clean-up activities shall be disposed of in DOT 17E closed top drums.
- C. **Plastic Sheeting** - Thickness shall be 6-mil or greater, in sizes to minimize the frequency of joints. Use of "spray-on poly" is not permitted.
- D. **Tape** - Glass fiber or other tape capable of sealing joints of adjacent sheets of plastic and for attachment of plastic sheet to finished or unfinished surfaces under both dry and wet conditions.
- E. **Warning Labels and Signs** - Shall be as required by OSHA regulation 29CFR 1926.62 and U.S. DOT 49CFR 171-179 (for impermeable containers).
- F. **Other Materials** - Provide all other materials, such as lumber, nails and hardware, which may be required to construct and dismantle the decontamination system and the barriers that isolate the Work Area(s).

2.02 TOOLS AND EQUIPMENT

- A. **Half-Face Respirator Equipment** - Negative pressure, half-face air purifying respirators approved by NIOSH and MSHA for lead removal work.
- B. **Powered Air Purifying Respirator (PAPR) Equipment** - Powered air purifying respirators (PAPRs) approved by NIOSH and MSHA for lead removal work.
- C. **Transportation** - as required for loading, temporary storage, transit, and unloading of contaminated waste without exposure to persons or property. Use only enclosed or covered trucks to haul waste containers to prevent loss or damage of containers in route to the landfill.
- D. **Water Sprayer** - Use airless or other low pressure sprayer for cleaning solution application.

- E. **Paint rollers, Brushes and Accessories** - For application of strippers, cleaning solutions, and primer.

PART 3 - EXECUTION

3.01 WORK AREA PREPARATION

- A. Coordinate sequence of Work Area preparation throughout the project site with Owner and site Lead Abatement Consultant.
- B. Work Area Preparation.
1. Segregate each Work Area from other areas with adequate barrier tape to restrict access to only project personnel.
 2. The following warning sign shall be posted 25 feet away from outside Work Areas:

**CAUTION
LEAD HAZARD
KEEP OUT**

3. Maintain emergency and fire exits from the Work Areas, or establish alternative exits satisfactory to fire officials. Provide fire extinguishers inside and outside the Work Area.
4. Provide temporary power and lighting as necessary to maintain a safe work environment.
5. Maintain adequate mechanical ventilation in the Work Areas continuously throughout the project.
6. Notify the Lead Abatement Consultant for observation of the completion of Work Area preparation prior to disturbing the LBP materials.
7. Secure two layers of 6-mil plastic sheeting to the floor directly adjacent to and below the painted item to be removed as a component, extending at least 5 feet beyond the component in each direction. Secure plastic sheeting so that the top layer of plastic can be removed during cleaning operations leaving the lower layer secured to the floor.
8. Removal of LBP Materials Intact with Component.
 - a) Prepare Work Area as previously specified.
 - b) Score the paint at edges, corners, etc. of the component to reduce chipping of paint. Carefully remove by wet scraping loose and flaking paint prior to removal of component.
 - c) Care should be taken to avoid damage to adjacent areas during the removal of components.
 - d) Carefully remove the component to minimize the disturbance of LBP and the generation of lead dust.
 - e) Components that are removed shall be wrapped in 6-mil plastic sheeting and disposed of in accordance with TCLP waste stream testing results.
 - f) Clean up paint dust, chips, and flakes by HEPA vacuum and wet clean with TSP solution.

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9. Maintain a Sign In/Out Log near the Work Area to be used by every person, each time upon entering and leaving the Work Area.
10. Use decontamination procedures, as described here, for personnel in all Work Areas:
 - a) Two sets of protective disposable clothing will be worn while performing abatement activities (one set is acceptable if shower facilities will be available and required by Contractor for use by workers prior to leaving the job site).
 - b) Remove the outer set of protective clothing in the Work Area and proceed to a designated decontamination area (e.g., shower facility or other decontamination process).
 - c) Complete the decontamination process inside the decontamination area.
 - d) Maintain respiratory protection throughout the decontamination process. Dispose of all used protective clothing and disposable filter cartridges as lead-contaminated waste.

3.02 CLEAN UP AND CLEARANCE TESTING

- A. After completion of the paint removal, contractor shall wet clean all surfaces in the Work Area with a solution containing at least 1 ounce of 5 percent TSP to each gallon of hot water.
- B. Standard of Cleaning for Final Clearance - Consider Work Areas and all other decontaminated and cleaned areas clean when:
 1. A visual observation of Work Area(s) has been performed by the Lead Abatement Consultant who determines that the Contractor has met the specification requirements.
 2. Wipe samples will be obtained on abated areas or adjacent surfaces which must have a lead residue level less than the following:
 - a. Floors: 40 micrograms per square foot
 - b. Window Sills: 250 micrograms per square foot
 - c. Window Troughs: 400 micrograms per square foot
 3. If any wipe samples exceed the above allowable lead level, the contractor will re-clean these Work Areas at his own expense.

3.03 WASTE CONTAINERIZATION AND MARKING

- A. All lead-based waste generated as a result of work activities shall be placed in 6-mil, plastic bags. The bagged waste shall then be placed in sealed DOT 17C open top 55-gallon drums lined with 6-mil plastic bags sized to fit within each drum. The waste can be placed directly into the drums during paint removal.
- B. All lead materials removed from their substrate shall be stored in sealed DOT 17C open top 55-gallon drums lined with 6-mil plastic bags sized to fit within each drum. Over-sized LBP-containing components may be doubled wrapped with 6-mil plastic sheeting for disposal.

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- C. All lead-contaminated disposable items used in the course of the work (rags, sorbents, protective clothing, plastic sheeting, etc.) shall be placed in 6-mil, plastic bags. The bagged waste shall then be placed in sealed DOT 17C open top 55-gallon drums lined with 6-mil plastic bags sized to fit within each drum. Contractor shall not place lead-based waste in the same drum as the items described in this paragraph.
- D. All liquids generated as a result of clean-up activities shall be disposed of in DOT 17E closed top drums.
- E. All drums shall be permanently marked as to specific contents and dated. In addition, each drum shall be marked with the standard EPA label shown below:

**CAUTION
CONTAINS
LEAD**

A toxic environmental contaminant requiring
special handling and disposal in accordance with
US Environmental Protection Agency Regulations
40 CFR 761 - For Disposal Information contact
the nearest US EPA Office

In case of accident or spill call toll free the US
Coast Guard National Response Center
800-424-8802

Also Contact: Mr. Dwayne Gossett
Tel. No.: 254-654-1495

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- F. All drums containing hazardous waste shall be marked with the label (properly completed) shown below.

**HAZARDOUS
WASTE**

**FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OF PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY**

GENERATOR INFORMATION

NAME _____
 ADDRESS _____ PHONE _____
 CITY _____ STATE _____ ZIP _____
 EPA MANIFEST
 ID NO./DOCUMENT NO. _____ / _____
 ACCUMULATION _____ EPA
 START DATE _____ WASTE NO. _____

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

- G. Notify the Lead Project Manager for observation of the labeling of the drum(s) prior to moving the drum(s) to the storage area.

3.04 TEMPORARY ON-SITE STORAGE

All drums shall be sealed, secured and labeled before being moved to a temporary on-site, secure storage location designated by the Owner. Handle drums with care during transportation between removal area and storage area. The Contractor will arrange for an off-site secure storage area if approved by the Owner.

3.05 WASTE CHARACTERIZATION AND DISPOSAL

- A. Lead waste materials from removal operations shall be containerized separately by type of material and TCLP tested by the Contractor to determine hazardous or non-hazardous toxicity characteristics prior to disposal. TCLP sampling by the Contractor must be performed in the presence of the Lead Project Manager. The Abatement Consultant may perform separate TCLP sampling and analysis in addition to the Contractor's tests. The Contractor and Abatement Consultant must agree on the waste characterization prior to disposal of the project waste.

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- B. All non-hazardous waste shall be disposed as construction or special waste at an approved construction waste landfill. All hazardous waste generated on this Project shall be disposed of at a registered hazardous waste disposal facility. Disposal facility to be used shall meet all EPA and TCEQ regulatory standards for disposal of hazardous waste.
- C. Transportation to disposal facility shall be performed in accordance with all federal, state, and local laws and regulations.
 - 1. Place sealed containers in enclosed truck, trailer or dumpster.
 - 2. Transport hazardous waste using a transporter registered to transport hazardous materials.
 - 3. Provide Uniform Hazardous Waste Manifest, EPA form 8700-22 (rev. 3-05) for transportation of all hazardous waste to disposal facility.
 - 4. Submit copies of waste manifests from authorized representative of disposal facility for each delivery of waste material to the Lead Project Manager after each delivery and a complete set of copies of receipts for all deliveries. Submit tipping receipt.

3.06 PROCEDURE FOR DETERMINING COMPLIANCE

- A. The Lead Abatement Consultant will observe each Work Area during the lead abatement project to monitor compliance with regulations and specifications.
- B. The observations performed shall be a visual observation to monitor whether surfaces requiring abatement have been abated.
- C. As required by the Abatement Consultant, wipe samples will be obtained on abated areas or adjacent surfaces during the project for Quality Control (QC) purposes. If any wipe samples exceed the above allowable lead levels, the contractor will re-clean these areas at their own expense.

PART 4 - ADDITIONAL DOCUMENTS

4.01 SCOPE OF LEAD PAINT ABATEMENT WORK

- A. General Lead Paint Abatement Notes:
The contractor is responsible to visit the Work Areas and verify the quantity and extent of work related to the removal of the LBP materials prior to executing any work.
- B. The following table and attached drawings summarize the locations and quantities of LBP to be removed:

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COLOR	SUBSTRATE-COMPONENT	LOCATION	QUANTITY
White	Wood/ Metal - Window Frames and Sills	Exteriors of All Windows	400 linear feet
Light Green	Wood - Ceilings	Front Porch, All 1 st Floor Locations of House	2,250 square feet
White	Wood - Ceiling Beam	Bathroom 1	10 linear feet
White	Gypsum Board - Ceiling	Room 6	Quantified with Light Green Wood Ceilings
White	Wood - Rail	Front Porch	15 linear feet
Light Green	Wood - Walls (under Vinyl Siding)	Exterior of Residence	7,800 square feet
Light Green	Wood - Soffit (under Vinyl Soffit)/Fascia	Exterior of Residence	Quantified with Light Green Wood Walls (under Vinyl Siding)
White	Wood - Gingerbread Shingles	Gables	Quantified with Light Green Wood Walls (under Vinyl Siding)
White	Wood - Decorative Architectural Trim (Wood Tracery Decorations)	Exterior of Residence	20 linear feet
Gray	Wood - Wall (behind Faux Wood Panel)	Stairs	100 square feet
White	Wood - Walls	Room 6, Pantry	50 square feet
Gray	Wood - Wall	Room 8, Room 8 Closet	75 square feet
White	Wood - Door Frames	Room 6	40 linear feet

END OF SECTION

Legend

	White Wood/Metal Window Frames and Sills
	Light Green Wood Ceilings
	White Wood Ceiling Beam
	White Gypsum Board Ceiling
	White Wood Rail
	Light Green Wood Walls (under Vinyl Siding), Light Green Wood Sill (under Vinyl Siding/Piazza), and White Wood Gingerbread Sillings
	White Wood Decorative Architectural Trim (Wood Trajectory Decorations)
	Gray Wood Wall (behind Fauc Wood Panel)
	White Wood Walls
	Gray Wood Wall
	White Wood Door Frames

