HIDALGO COUNTY
ASBESTOS ABATEMENT FOR HIDALGO COUNTY OLD ADMINISTRATION BUILDING
2009-071D-08-04-MSS

EXHIBIT "A"

SCOPE OF WORK -SPECIFICATIONS

Raba Kistner

Engineering • Testing • Environmental • Facilities • Infrastructure

ASBESTOS ABATEMENT SPECIFICATIONS

FOR THE

OLD HIDALGO COUNTY ADMINISTRATION BUILDING
100 EAST CANO BOULEVARD
EDINGBURG, TEXAS

Prepared For

Alcocer, Garcia, and Associates Design Consultants
Mr. Eduardo Alcocer

R-K PROJECT NO.: ASF08-271-20-00
February 2009

Austin, TX
Brownsville, TX
El Paso, TX
Houston, TX
McAllen, TX
Mexico
Pflugerville, TX
San Antonio, TX

-ASBESTOS ABATEMENT SPECIFICATIONS

Old Hidalgo County Administration Building
100 East Cano Boulevard
Edinburg, Texas

Prepared for
Alcocer, Garcia and Associates Design Consulting
Mr. Eduardo Alcocer

Prepared By:

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AUSTIN, TEXAS 78754-3822
(512) 339-1745
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R-K PROJECT NO.: ASF08-271-00

February 18, 2009

Michael P. Cosgrove

Michael P. Cosgrove
Individual Asbestos Consultant
TDH License No. 105473

ASBESTOS SPECIFICATIONS
Old Hidalgo County Administration Building
100 East Cano Boulevard

DIVISION 1 - GENERAL REQUIREMENTS

DIVISION 2 - SITE WORK

SECTION 01901
SUMMARY OF WORK

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. General provisions of Contract, including Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

1.2 PROJECT DESCRIPTION - SUMMARY OF WORK

A. This Section includes the following:

1. The Project consists of Asbestos Abatement at the Old Hidalgo Administration Building Edinburg, Texas, all as shown on the Contract Documents prepared by Raba-Kistner Consultants, Inc.

2. The work on this Project consists of the abatement and disposal of identified asbestos from the following specified areas:

3. Abatement contractor must regulate south wing with 2 layers of 6 mil poly and barrier tape.

4. PCM's Final Clarence will be run.

QUANTITIES ARE ESTIMATES ONLY AND MUST BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO PROPOSAL.

The contractor must confine operations to areas within Contract limits established. Portions of the site beyond areas in which operations are established are not to be disturbed. Keep driveways and entrances serving the premises clear, clean and available to the Owner and his employees at all time

1.3 GENERAL

A. This project is to be conducted in accordance with the requirements of 25 TAC, section 15, Article 4477-3a and 29 CFR 1926.1101.

1. The location and approximate quantities of asbestos materials provided in these specifications are estimates only and do not include any hidden materials not identified. The Contractor is responsible to field verify for actual quantities which these plans and specifications represent. No additional compensation will be made to the Contractor(s) for differences

between the estimated quantities and the actual quantities unless prior written approval is obtained from the Owner or his representative.

B. RELATED DOCUMENTS

Drawings, general provisions of Contract, including General and Supplementary Conditions, and other Division-1 Specification sections, apply to work of this section.

1.4 PROJECT/WORK IDENTIFICATION

A. 1. General:

Old Hidalge County Administration Building
100 West McIntyre Street
Edinburg , Texas

2. As shown on contract documents.

The purpose of this specification is the removal of all the asbestos containing materials in specified areas of the building, as identified in this specification.

B. Briefly and without force and effect upon the contract Documents, the work of the Contract can be summarized as follows:

1. The purpose of this project is to remove and dispose of the following identified asbestos containing materials (ACM's):
   - Floor mastic
   - Filler on CMU walls
   - Pink sink soundproofing
   - 9"X9" off-white floor tile and black mastic
   - Joint compound under non-asbestos sheetrock and wall texture
   - 2" grey pipe mastic paper wrap
   - Black mastic under non-asbestos brown 12"X12" floor tile
   - Black AC Duct black mastic
   - 9"X9" off-white floor tile and black mastic

The purpose of this specification is the removal of all the asbestos containing materials in specified areas of the building, as identified in this specification.

B. Briefly and without force and effect upon the contract Documents, the work of the Contract can be summarized as follows:

2. The purpose of this project is to remove and dispose of the following identified asbestos containing materials (ACM's):

   - Floor mastic
   - Filler on CMU walls
   - Pink sink soundproofing
   - 9"X9" off-white floor tile and black mastic
   - Joint compound under non-asbestos sheetrock and wall texture
   - 2" grey pipe mastic paper wrap
   - Black mastic under non-asbestos brown 12"X12" floor tile
   - Black AC Duct black mastic
   - 9"X9" off-white floor tile and black mastic

C. The Contractor will remove and dispose of as ACM the above listed material. A summary of the sampling of these items follows:

1.5 ASBESTOS CONTAINING MATERIALS:

A. The following asbestos containing materials require abatement prior to renovation. If any other materials are found, which are suspected of containing asbestos, immediately notify the Owner's Representative. The amounts of ACM listed below are approximate. The Contractor will field verify the quantities.

First Floor

DESCRIPTION	***QUAN./LOCATION***	***COMMENTS***
9"x9" floor tile & underlying black mastic	Approximately 300 sf South section-middle storage office Southeast stairs storage room	Full containment, pre cleaning, four foot splash guards, wet methods, criticals, barrier tape, negative air pressure that vents to the exterior, and 3 stage decontamination units. Proper PPE and **half face respirator**, double bag and disposal in sealed container in compliance with TAHPR rules.
Joint compound under non-asbestos sheetrock and wall texture	Approximately 9,000 sf Southeast stairs Southeast stair storage area Southeast stair hallway South section offices	Full containment(2 layers of 6-mil poly on floors, windows and doors), pre cleaning, wet methods, negative air pressure that vents to the exterior, and 3 stage decontamination units. Install barrier tape and signs to regulate access into work areas and have restricted entry to authorized persons only. Proper PPE and **PAPR** respirator double bag and disposal in sealed container in compliance with TAHPR rules.
Pink soundproofing Under sinks	Kitchen UBC Office 2nd floor	Remove as whole components double wrap Proper PPE and ½ face respirator double bag and disposal in sealed container in compliance with TAHPR rules.

FIRST FLOOR

DESCRIPTION	*QUAN./LOCATION*	*COMMENTS*
Wall block filler	Vault records room 660 square feet	Full containment(2 layers of 6-mil poly on floors, windows and doors), pre cleaning, wet methods, negative air pressure that vents to the exterior, and 3 stage decontamination units. Install barrier tape and signs to regulate access into work areas and have restricted entry to authorized persons only. Proper PPE and **PAPR** respirator double bag and disposal in sealed container in compliance with TAHPR rules.

SECOND FLOOR

DESCRIPTION	*QUAN./LOCATION*	*COMMENTS*
2" grey pipe mastic paper wrap	Above ceiling throughout 2nd story northeast area Approximately 2,000 square feet	Full containment(2 layers of 6-mil poly on floors, windows and doors), pre cleaning, wet methods, negative air pressure that vents to the exterior, and 3 stage decontamination units. Install barrier tape and signs to regulate access into work areas and have restricted entry to authorized persons only. Proper PPE and **PAPR** respirator double bag and disposal in sealed container in compliance with TAHPR rules.
Black mastic under non-asbestos brown 12"X12" floor tile	Approximately 1,800 square feet Southeast area Offices and hallways	Full containment, pre cleaning, four foot splash guards, wet methods, criticals, barrier tape, negative air pressure that vents to the exterior, and 3 stage decontamination units. Proper PPE and **half face respirator**, double bag and disposal in sealed container in compliance with TAHPR rules.
Pink soundproofing Under sinks	Kitchen UBC Office 2nd floor	Remove as whole components double wrap Proper PPE and ½ face respirator double bag and disposal in sealed container in compliance with TAHPR rules.
Black AC Duct black mastic	Approximately 2,500 square feet Throughout ceiling in 2nd story South building section	Wet glove bag methods, criticals, barrier tape, negative air pressure that vents to the exterior in work area, and 3 stage decontamination units. Proper PPE and **half face respirator**, double bag and disposal in sealed container in compliance with TAHPR rules. Or Full containment(2 layers of 6-mil poly on floors, windows and doors), pre cleaning, wet methods, negative air pressure that vents to the exterior, and 3 stage decontamination units. Install barrier tape and signs to regulate access into work areas and have restricted entry to authorized persons only. Proper PPE and ½ facer respirator double bag and disposal in sealed container in compliance with TAHPR rules.

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Second Floor

DESCRIPTION	*QUAN./LOCATION*	*COMMENTS*
Joint compound under non-asbestos sheetrock and wall texture	Approximately 8,000 square feet Southeast area Offices and hallways	Full containment(2 layers of 6-mil poly on floors, windows and doors), pre cleaning, wet methods, negative air pressure that vents to the exterior, and 3 stage decontamination units. Install barrier tape and signs to regulate access into work areas and have restricted entry to authorized persons only. Proper PPE and **PAPR** respirator double bag and disposal in sealed container in compliance with TAHPR rules.
9"X9" off-white floor tile and black mastic	Approximately 300 square feet Southeast stairway hall area	Full containment, pre cleaning, four foot splash guards, wet methods, criticals, barrier tape, negative air pressure that vents to the exterior, and 3 stage decontamination units. Proper PPE and **half face respirator**, double bag and disposal in sealed container in compliance with TAHPR rules.

B. Personal air monitoring will be conducted during the entire abatement process. Personal pumps will also be placed on one of every four workers. All of this activity must be conducted under the supervision of a TDSHS licensed air monitor.

The abatement must comply with these Specifications, the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), State of Texas March, 2003 revisions, and local regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions are applicable.

C. The Contractor will inform the Owner and Owner's Representative of any hidden or unidentified conditions that may result in a Change Order or additional cost to the Bid Price of the Contract as soon as they are found. This notice will require written approval by the Owner's Representative prior to accomplishing any additional work.

The Contractor will be required to repair any damage to the facility or equipment of the Owner as the result of the Abatement Project. Any replacement items (paint, wall coverings, panels, etc.) will be of equal quality and color of the damaged items.

1.6 General and Administrative Requirements: Are set forth in the following specification sections:

A. 01901 Summary of Work
B. 01902 Project Coordination
C. 01903 Definitions and Standards
D. 01904 Codes and Regulations
E. 01905 Submittals

1.7 Abatement Work:

A. Requirements are set forth in the following specification sections, listed here according to the sequence of the work:

1. 01904 - Applicable Codes: Sets forth-governmental regulations and industry standards that are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits that are known to the Owner and either must be applied for and received or which must be given to governmental agencies before start of work.

2. 01907 - Temporary Facilities: Sets forth the support facilities needed such as electrical and plumbing connections.

3. 01906 - Test Laboratory Services: Describes air monitoring by Owner's Representative so that the building beyond the work area will remain uncontaminated. Air monitoring to determine required respiratory protection is the responsibility of the Contractor.

4. 01914 - Decontamination Units: Explains the setup and operation of the personnel and material decontamination units.

5. 01908 - Temporary Pressure Differential and Air Circulation System: Sets forth the procedures to set up negative air machines and ventilation of the work area.

6. 01910 - Worker Protection: Describes the equipment and procedures for protecting workers against asbestos contamination and other work place hazards except for respiratory protection.

7. 01911 - Respiratory Protection: Sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.

B. Asbestos Removal Work Procedures: Are described in the following specification sections:

1. 01916 - Removal of Asbestos Containing Material

2. 01917 - Disposal of Asbestos Containing Waste Material

C. Decontamination of the Work Area: Is described in the following section:

1. 01914 – Project Decontamination

2. 01915 - Work Area Clearance: Describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.

1.8 PLAN OF ACTION

A. Submit a detailed plan of the procedures proposed for use in complying with the requirements of this Specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of other trades and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the area HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris.

1.9 POTENTIAL ASBESTOS HAZARD

A. The disturbance or dislocation of asbestos containing materials may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health hazard to workmen and other trades. Apprise all workers, supervisory personnel, subcontractors and consultants who will be at the job site of the seriousness of the hazard and of proper work procedures, which must be followed.

B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos containing materials, take appropriate continuous measures as necessary to protect the building from the contamination with airborne asbestos. Such measures will include the procedures and methods described herein, and compliance with regulations of applicable federal, state and local agencies.

1.10 CONTRACTOR USE OF PREMISES

A. General: The Contractor will limit his use of the premises to the work indicated.

1. Use of the Site: Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to site rules and regulations affecting the work while engaged in project abatement.

2. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage to areas indicated at the pre-abatement meeting.

3. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.

4. Owner Occupancy: The Owner during the asbestos abatement project(s) will not occupy the facility.

-END OF SECTION-

SECTION 01902
PROJECT COORDINATION

PART 1 - PROJECT COORDINATION

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 ABATEMENT TIME

A. The use of insufficient labor or equipment for abatement purposes or inadequate scheduling of materials or equipment will not be allowed as cause for delay. Extension of time or extra cost will not be allowed for failure to complete the project on time due to insufficient labor or equipment.

1.3 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General Superintendent: Provide a full-time General Superintendent on site who is licensed in accordance with Texas Civil Statutes, Article 4477-3a, Section 295.46 and experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Competent Person as required by OSHA in 29 CFR 1926 for the Contractor and is the Contractor's representative responsible for compliance with all applicable federal, state and local regulations, particularly those relating to asbestos containing materials.

B. Asbestos Workers: All workers actively involved in the removal of asbestos material will be Registered Asbestos Workers with the State of Texas.

1.4 PRE-CONSTRUCTION CONFERENCE

A. An initial progress meeting, recognized as the "Pre-Construction Conference", will be convened by the Owner and the Owner's Representative prior to the start of any work. The General Superintendent of the Contractor, Owner's Representative(s), Project Administrator, and other entities concerned with the asbestos abatement work will attend the meeting.

1.5 DAILY LOG

A. General: Maintain within the Decontamination Unit a Daily Log documenting the dates and time of, but not limited to, the following items:

Personnel, by name, entering and leaving the work area, air monitoring results and any equipment/supplies decontaminated and brought out through the decontamination unit.

1.6 SPECIAL REPORTS

A. General: Except as otherwise indicated, submit special reports directly to the Owner's Representative or the Owner within one day of occurrence requiring special report, with copy to others affected by occurrence.

B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of negative pressure system, rupture of temporary enclosures), prepare and submit a special report listing chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner in advance at earliest possible date.

C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, or where the event posed a significant threat of loss or personal injury.

1.7 CONTINGENCY PLAN

A. Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, negative air system failure, or any other event that may require modification or abridgement of decontamination or work area isolation procedures. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.

B. Post: In clean room of the Personnel Decontamination Unit telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

1.8 NOTIFICATIONS

A. Notify other entities at the job site of the nature of the asbestos abatement activities, location of asbestos containing materials, requirements relative to asbestos set forth in these specifications and applicable regulations.

-END OF SECTION-

SECTION 01903
DEFINITIONS AND STANDARDS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DEFINITIONS

A. General Explanation: A substantial amount of specification language constitutes definitions for terms found in other contract documents, including the drawings. (Drawings must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon.) Certain terms used in contract documents are defined in this article. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the work to the extent they are not stated more explicitly in another element of contract documents.

1. General Requirements: The provisions or requirements of Division-1 sections apply to entire work of Contract and, where so indicated, to other elements which are included in projects.

2. Indicated: The term "Indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar requirements in Contract Documents. Where terms such as "shown", "noted", and "scheduled" are used, it is to help locate the reference; no limitation on location is intended except as specifically noted.

3. Directed, Requested, etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by Owner's Representative," "requested by "Owner's Representative," and similar phrases. However, no such implied meaning will be interpreted to extend Owner's Representative's responsibility into Contractor's responsibility for construction supervision.

4. Project Site: The term "project site" is defined as the space available to Contractor for performance of the work, either exclusively or in conjunction with others performing other work as part of the project. The extent of project site is shown on the drawings, and may or may not be identical with the description of land upon which the project is built.

5. Approve: The term "approved", where used in conjunction with the Owner's Representative's actions on the Contractor's submittals, applications, and requests, is limited to the responsibilities and duties of the Architect stated in Supplementary

6. Conditions. Such approval will not release the Contractor from responsibility to fulfill Contract Document requirements, unless otherwise provided in the Contract Documents.

7. Regulation: The term "Regulations" includes laws, statutes, ordinances and lawful orders issued by authorities having jurisdiction, as well as rules, conventions and agreements within the construction industry that control performance of the Work, whether they are lawfully imposed by authorities having jurisdiction or not.

8. Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.

9. Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing protecting, cleaning and similar operations, as applicable in each instance.

10. Provide except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.

11. Installer: The term "installer" is defined as the entity (person or firm) engaged by Contractor, or its sub-contractor or sub-subcontractor for performance of a particular unit of work at project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (Installers) be expert in operations they are engaged to perform.

12. Testing Laboratory: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the work, either at project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

13. Owner's Representative: Is the entity described as the Consultant and/or Architect. All references to Consultant or Architect in the contract documents will in all cases refer to the Owner's Representative. This Representative will represent the Owner during abatement until final payment is due.

14. Project Administrator: Is the entity described as the "Project Representative" or "Engineer". The Project Administrator is a full-time representative of the Owner at the job site with the authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgment of the Project Administrator, Owner's Representative, the interest of the Owner, safety of any person or the Owner's property are jeopardized by the work.

15. General Superintendent: Is the Contractor's representative at the work site. This person will generally be the competent person required by OSHA in 29 CFR 1926.

1.3 DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT

A. This Section includes the following:

1. Accredited or Accreditation (when referring to a person or laboratory): A person or laboratory accredited in accordance with Section 206 of Title II of the Toxic Substances Control Act (TSCA).

2. Aerosol: A system consisting of particles, solid or liquid, suspended in air.

3. Air Cell: Insulation normally used on pipes and duct work that is comprised of corrugated cardboard which is frequently comprised of asbestos combined with cellulose or refractory binders.

4. Air Monitoring: The process of measuring the fiber content of a specific volume of air.

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

6. Asbestos: The asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above minerals and any of these materials that have been chemically treated and/or altered will be considered as asbestos.

7. Asbestos Containing Material (ACM): Any material containing more than 1% by weight of asbestos of any type or mixture of types.

8. Asbestos Containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on the interior structural members or other parts of a building.

9. Asbestos Containing Waste Material: Any material that is or is suspected of being or any material contaminated with an asbestos containing material that is to be removed from a work area for disposal.

10. Asbestos Debris: Pieces of ACBM that can be identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

11. Authorized Visitor: The Owner's Representative, testing lab personnel, the Architect/Engineer or a representative of any federal, state and local regulatory or other agency having authority over the project.

12. Barrier: Any surface that seals off the work area to inhibit the movement of fibers.

13. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.

14. Ceiling Concentration: The concentration of an airborne asbestos substance that will not be exceeded.

15. Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified in Comprehensive Practice by the American Board of Industrial Hygiene.

16. Demolition: The wrecking or taking out of any building component, system, finish or assembly of a facility together with any related handling operations.

17. Disposal Bag: True 6-mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site. Each is labeled as follows:

DANGER
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

CAUTION
Contains Asbestos Fibers
Avoid Opening or Breaking Container
Breathing Asbestos Is Hazardous To Your Health

AND

Project Building Name
Location
Date
Building Owner Name

18. Encapsulant: A material that surrounds or embeds asbestos fibers in an adhesive matrix, to prevent release of fibers.

19. Bridging encapsulant: An encapsulant that forms a discrete layer on the surface of an in situ asbestos matrix.

20. Penetrating encapsulant: An encapsulant that is absorbed by the in situ asbestos matrix without leaving a discrete surface layer.

21. Removal encapsulant: A penetrating encapsulant specifically designed for removal of asbestos containing materials rather that for in situ encapsulation.

22. Encapsulation: Treatment of asbestos containing materials, with an encapsulant.

23. Enclosure: The construction of an airtight, impermeable, permanent barrier around asbestos containing material to control the release of asbestos fibers into the air.

24. Filter: A media component used in respirators to remove solid or liquid particles from the inspired air.

25. Friable Asbestos Material: Material that contains more than 1.0% asbestos by weight, and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

26. Glovebag: A sack (typically constructed of 6-mil transparent polyethylene or polyvinylchloride plastic) with two inward projecting long-sleeve gloves, which are designed to enclose an object from which an asbestos containing material is to be removed.

27. HEPA Filter: A High Efficiency Particulate Absolute (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.

28. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air (absolute) filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

29. High-Efficiency Filter: A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles having a mean particle diameter of 0.3 micrometer.

30. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

31. Negative Pressure Ventilation System: A pressure differential and ventilation system.

32. Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).

33. Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

34. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.

35. Repair: Returning damaged ACBM to an undamaged condition or to an intact state to prevent fiber release.

36. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.

37. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

38. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.

39. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

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

41. Work Area: The area where asbestos related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.

1.4 DRAWING SYMBOLS

A. General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated.

B. Mechanical/Electrical Drawings: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by ASHRAE.

1.5 INDUSTRY STANDARDS

A. This Section includes the following:

1. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, applicable standards of the construction industry have the same force and effect (and are made a part of contract documents by reference) as if copied directly into contract documents, or as if published copies were bound herewith. Refer to the other contract documents for resolution of overlapping and conflicting requirements that result from the application of several different industry standards to the same unit of work. Refer to individual unit of work sections for indications of which specialized codes and standard the Contractor must keep at the project site, available for reference.

2. Referenced standards (referenced directly in contract documents or by governing regulations) have precedence over non-referenced standards that are recognized in industry for applicability to work.

3. Non-referenced standards are hereby defined to have no particular applicability to the work, except as general requirements of whether the work complies with standards recognized in the construction industry.

4. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of contract documents.

5. Updated Standards: At the request of the Owner's Representative, submit a change order proposal where an applicable industry code or standard has been revised and reissued after the date of the contract documents and before the performance of the work affected. The Owner's Representative will decide whether to issue the change order to proceed with the updated standard.

6. Copies of Standards: Each entity engaged in work on the Project is required to be familiar with industry standards applicable to that entities' construction activity. Copies of applicable standards are not bound with the Contract Documents.

    a. Where copies of standards are needed for proper performance of the work, the Contractor is required to obtain such copies directly from the publication source.

    b. Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Owner's Representative reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.

7. Abbreviations and Names: Where acronyms or abbreviations are used but not identified in specifications or other contract documents they are defined to mean the industry recognized name of trade association, standards generating organization, governing authority or other entity applicable to context of text provision. Refer to "Encyclopedia of Associations," published by Gale Research Co., available in large libraries.

8. Abbreviations and Names: The following acronyms or abbreviations as referenced in contract documents are defined to mean the associated names. Both names and addresses are subject to change, and are believed to be, but are not assured to be, accurate and up-to-date as of

date of contract documents:

a. AIHA - American Industrial Hygiene Association
475 Wolf Ledges Parkway
Akron, OH 44311
216/762-7294

b. AIA - American Institute of Architects
1735 New York Ave. NW; Washington, DC 20006
202/626-7474

c. ANSI - American National Standards Institute
1430 Broadway; New York, NY 10018
212/354-3300

d. ASHRAE - American Society for Heating, Refrigerating, and Air Conditioning Engineers
1791 Tullie Circle NE; Atlanta, GA 30329
404/636-8400

e. ASME - American Society of Mechanical Engineers
345 East 47th Street
New York NY 10017
212/705-7722

f. ASPE - American Society of Plumbing Engineers
3716 Thousand Oaks Blvd., Suite 210
Westlake, CA 91362
805/495-7120

g. ASTM - American Society for Testing and Materials
1916 Race St.; Philadelphia, PA 19103
215/299-5400

h. CFR - Code of Federal Regulations
Available from Government Printing Office;
Washington, DC
20402 (usually first published in Federal Register)

i. CGA - Compressed Gas Association
1235 Jefferson Davis Highway; Arlington, VA 22202
703/979-0900

j. CS - Commercial Standard of NIST (U.S. Dept. of Commerce)
Government Printing Office; Washington, DC 20402
202/377-2000

k. DOT - Department of Transportation
400 M Street, SW
Washington, DC 20590
202/426-4000

l. EPA - Environmental Protection Agency
401 M St., SW; Washington, DC 20460
202/382-3949

m. FS - Federal Specification (General Services Admin.)
Obtain from your Regional GSA Office, or purchase from GSA Specifications Unit (WFSIS); 7th and D Streets, SW; Washington, DC 20406
202/472-2205 or 2140

n. GA - Gypsum Association
1603 Orrington Ave.; Evanston; IL 60201
312/491-1744

o. GSA - General Services Administration
F St. and 18th St., NW; Washington, DC 20405
202/655-4000

p. IEEE - Institute of Electrical and Electronic Engineers
345 E. 47th Street
New York, NY 10017
202/705-7900

q. MIL - Military Standardization Documents
(U.S. Dept. of Defense)
Naval Publications and Forms Center
5801 Tabor Ave.; Philadelphia, PA 19120

r. NEC - National Electrical Code (by NFPA)

s. NFPA - National Fire Protection Association
Batterymarch Park; Quincy, MA 02269
617/770-3000

t. NIST - National Institute of Standards and Technology
(U.S. Dept. of Commerce)
Gaithersburg, MD 20234
301/921-1000

u. OSHA - Occupational Safety & Health Administration
(U.S. Dept. of Labor)
Government Printing Office; Washington, DC 20402

v. PS - Product Standard of NBS (U.S. Dept. of Commerce)
Government Printing Office; Washington, DC 20402
202/783-3238

w. RFCI - Resilient Floor Coverings Institute
966 Hungerford Drive, Suite 12-B
Rockville, MD 60062
312/272-8000

x. UL - Underwriters Laboratories
333 Pfingsten Rd.; Northbrook, IL 60062
312/272-8800

1.6 SUBMITTALS

A. Permits, Licenses and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

-END OF SECTION-

SECTION 01904
CODES AND REGULATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF THE WORK

A. This section sets forth-governmental regulations and industry standards, which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

B. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.

C. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS

A. This Section includes the following:

1. General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.

    a. Contractor Responsibility: The Contractor will assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor will hold the

Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

b. Federal Requirements: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

c. U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

d. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite; Final Rules, Title 29, Part 1910, Section 1001 and Part 1926, Section 1101 of the Code of Federal Regulations

e. Respiratory Protection; Title 29, Part 1910, Section 134 of the Code of Federal Regulations Construction Industry; Title 29, Part 1926, of the Code of Federal Regulations

f. Construction Industry, Title 29, Part 1926 of the Code of Federal Regulations

g. Access to Employee Exposure and Medical Records; Title 29, Part 1910, Section 2 of the Code of Federal Regulations

h. Hazard Communication; Title 29, Part 1910, Section 1200 of the Code of Federal Regulations

i. Specifications for Accident Prevention Signs and Tags; Title 29, Part 1910, Section 145 of the Code of Federal Regulations

j. U. S. Department of Transportation:

k. Hazardous Substances, Title 29, Part 171 and 172 of the Code of Federal Regulations

l. U. S. Environmental Protection Agency (EPA) including but not limited to:

m. Asbestos Abatement Projects Rule 40

n. 40 CFR Part 762

o. CPTS 62044, FRL 2843-9

p. Title 34, Part 231, Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos

q. Title 40, Part 61, Sub-part A of the Code of Federal Regulations National Emission Standard for Asbestos

r. Title 40, Part 61, Sub-part M (Revised Sub-part B) of the Code of Federal Regulations.

s. American National Standards Institute (ANSI) Publication:

t. Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems

u. American Society for Testing and Materials (ASTM) Publication:

v. E 849-82 Safety and Health Requirements relating to Occupational Exposure to Asbestos

w. State Requirements: (1) 25TAC Part 289.141-289.156 (Texas Civil Statutes, 4477-3a, and all additions to this rule, Asbestos Exposure Abatement in Public Buildings, (2) 25 TAC 325.136(b)(6-7) Municipal Solid Waste Management Regulations.

x. Local Requirements: Abide by all local requirements that govern asbestos abatement work or hauling and disposal of asbestos waste materials.

y. Texas Asbestos Health Protection Act, Texas Civil Statutes, Article 4477-3a.

1.4 STANDARDS

A. General Applicability of Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.

B. Contractor Responsibility: The Contractor will assume full responsibility and liability for the compliance with all standards pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying area adjacent to the site. The Contractor will hold the Owner and the Owner's

Representative harmless for failure to comply with any applicable standard on the part of himself, his employees, or his sub-contractors.

C. Standards: Which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

1. American National Standards Institute (ANSI)
   1430 Broadway
   New York, New York 10018
   (212) 354-3300

2. Fundamentals Governing the Design and Operation of Local Exhaust Systems
   Publication Z9.2-79

3. Practices for Respiratory Protection
   Publication Z288.2-80

4. American Society for Testing and Materials
   1916 Race Street
   Philadelphia, PA 19103
   215/299-5400

5. Safety and Health Requirements Relating to Occupational Exposure to Asbestos
   E 849-82

6. Specification for Encapsulants for Friable Asbestos Containing Building Materials
   Proposal P-189
   "Guide" Specification - 02080 Asbestos Removal AIA Service Corporation
   1735 New York Avenue NW
   Washington, DC

7. AWCI Guide Specifications for the abatement of asbestos release from spray or trowel applied materials in buildings and other structural designs

8. U.S. Department of Commerce

9. National Bureau of Standards

10. National Engineering Lab

11. Center for Building Technology

1.5 EPA GUIDANCE DOCUMENTS

A. EPA Guidance Documents: Which discuss asbestos abatement work or hauling and disposal of asbestos waste materials are listed below for the contractor's information only. These documents do not describe the work and are not a part of the work of this contract. EPA maintains an information number (800-334-8571), publications can be ordered from (800-424-9065) and (554-1404 in Washington, DC):

1. Asbestos Containing Materials in School Buildings - A Guidance Document
   Part 1 & 2 (Orange Books)
   EPA C00090 (out of print)

2. Guidance for Controlling Asbestos Containing Materials in Buildings
   EPA 560/5-85-024 (Purple Book)

3. Friable Asbestos Containing Materials in Schools: Identification and Notification Rule (40CFR Part 763)

4. Evaluation of the EPA Asbestos-in-Schools Identification and Notification Rule
   EPA 560/5-84-005

5. Asbestos in Buildings: National Survey of Asbestos Containing Friable Materials
   EPA 560/5-84-006

6. Asbestos in Buildings: Guidance for Service and Maintenance Personnel
   EPA 560/5-85-018

7. Asbestos Waste Management Guidance
   EPA 530-SW-85-007

8. Asbestos Fact Book
   EPA Office of Public Affairs

9. Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials

10. Commercial Laboratories with Polarized Light Microscopy Capabilities for bulk asbestos identification

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

1.6 NOTICES

A. U.S. Environmental Protection Agency notification to the US EPA is mandated by the National Emission Standards for Hazardous Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M) for any project which involves the removal of asbestos containing materials. Notification of encapsulation projects is not required, but is not discouraged by EPA.

Demolition/Renovation Notification Form: The Texas Department of State Health Services Demolition/Renovation form combines the requirements of the **National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR, Subpart M** and the **Texas Asbestos Health Protection Rules (TAHPR)**. Both of these regulations require that written notification be submitted before beginning renovation projects which include the disturbance of any asbestos containing material (ACM) in a building or facility or before the demolition of a building or facility,. **The abatement contractor is responsible for submitting the notification form on behalf of the owner and payment of all notification fees.**

B. Written notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M) to the Regional Asbestos NESHAPS Contact at least 10 working days prior to beginning any work on asbestos containing materials will be submitted by the Contractor to the following address:

Texas Department of State Health Services
Asbestos Notification & Information Section
PO Box 143538
Austin, TX 78714-3538

C. Changes in the information on the notice will necessitate the refiling of an amended notice by the Contractor.

D. Notification: The following information will be included in the notification sent to the NESHAPs Contact:

1. Name and address of owner or operator.

2. Description of the facility that is being demolished or renovated, including the size, age, and prior use of the facility.

3. Estimate of the approximate amount of friable asbestos material present in the facility in terms of linear feet of pipe, and surface area on other facility components.

4. Location of the facility being renovated.

5. Scheduled starting and completion dates of renovation.

6. Nature of planned renovation and method(s) to be used.

7. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).

8. Name and location of the waste disposal site where the friable asbestos waste material will be deposited.

9. Supplement information maybe required on the Contractor's part to obtain approval. The Contractor will provide whatever information requested by the regulatory agencies.

E. Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice.

F. Permits: All asbestos waste is to be transported by an entity maintaining a current "Industrial Waste Hauler Permit" specifically for asbestos containing materials, as required for transporting of asbestos containing materials to a disposal site.

G. Licenses: Maintain current State Asbestos Abatement Contractor License or local jurisdiction for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

-END OF SECTION-

SECTION 01905
SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 SUMMARY

A. This section specifies administrative and procedural requirements for submittals required for performance of the Work, including:

1. Contractor's construction schedule.
2. Product data.
3. Miscellaneous submittals.

1.3 ADMINISTRATIVE SUBMITTALS

A. Refer to other Division-1 sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

1. Permits.
2. Applications for Payment.
3. Insurance Certificates.
4. Performance and Payments Bonds.
5. List of Subcontractors.

1.4 COORDINATION

A. Coordinate both the listing and timing of reports and activities required by provisions of this section and other sections, so as to provide consistency and logical coordination between reports. Maintain coordination and correlation between separate reports by updating at weekly intervals. Make appropriate distribution of each report and updated report to all parties involved in the work, including the Owner's Representative and the Owner. In particular provide close coordination of the progress schedule, listing of subcontractors, progress reports, and payment.

B. Coordinate transmittal of different types of submittals for the related elements of the work so processing will not be delayed by the need to review submittals concurrently for coordination.

C. The Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

1.5 SUBMITTAL

A. Prepare a schedule, including work dates, work shift time, number of employees, dates of start and estimated completion including dates of preparation work, pre-abatement demolition, asbestos removal, clearance dates, and final inspection dates to the Owner's Representative prior to start of abatement.

B. Allow sufficient review time so that the project will not be delayed as a result of the time required to process submittals, including time for re-submittals.

C. Allow one week (5 working days) for review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner's Representative will promptly advise the Contractor when a submittal must be delayed for coordination.

D. No extension of the Contract Time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the work to permit processing.

1.6 PROGRESS MEETINGS

A. Representatives of the Contractor, the Consultant, and the Owner will meet at the building site or at some other designated meeting place at intervals as necessary to maintain an optimum degree of communication for the progress of the work.

B. Submit a revised schedule after each meeting or activity where revisions have been made. Issue the updated schedule within 3 days of the meeting.

1.7 PRE-ABATEMENT CONFERENCE

Before any abatement work is started, the Contractor will meet with the Owner's Representative to discuss methods and procedures to be followed during the abatement period.

1.8 REPORTING

A. Daily Log: The Contractor will maintain a daily log documenting the dates and time of but not limited to, the following items:

1. Meetings; purpose, attendees, discussion (brief),

2. Visitations; authorized and unauthorized,

3. Personnel, by name, entering and leaving the work area,

4. Special or unusual events, i.e. barrier breaching, equipment failures,

5. Air monitoring tests and test results,

6. Documentation with the confirmation signature of the Owner's Representative of the following:

a. Inspection of the work areas preparation prior to start of removal and daily hereafter,
b. Removal of any polyethylene barriers,
c. Contractors inspection prior to encapsulation,
d. Removal of waste material from the work area, and
e. Decontamination of equipment (list items).

7. Provide two copies of this log at final closeout of the project to the Owner's Representative.

1.9 PAYMENT

. Progress and final payment instructions are set forth in the General and Supplemental Conditions.

2.0 INDEX OF SUBMITTALS

1. PRIOR TO BEGINNING WORK: Submit these in two (2) copies at least 5 working days before work is scheduled to start.

1. Plan of Action

2. Contingency Plan

3. Texas Department of Health Notice to Abate

1. Permits, License, Certificates

2. Asbestos Contractors Texas License

3. Texas License for Project Supervisor

4. Texas Worker's Registration for each asbestos worker.

5. Current signed physician's opinion.

6. Certificate of Worker's Acknowledgment

7. Project Work Schedule

8. Historic Airborne Fiber Data (specified in Section 01562, 1.04).

4. DURING THE COURSE OF ABATEMENT: These items will be submitted as available or required during the work period.

1. Daily sign in sheets – submit at the end of each shift.

2. Any request for change orders – submit as needed.

3. Report of any accident or injury – within 24 hours of occurrence.

4. Any breech of controlled area – within 2 hours of identification of breech.

5. Any incident affecting the ability of the Contractor to complete the project on time.

6. Visit of any official or representative of the media or regulatory agency – within 1 day of visit.

7. Addition of any new asbestos worker – prior to the worker reporting for work inside the containment.

5. POST ABATEMENT:

1. Copies of daily sign-in sheets not previously provided within three working days of project closeout.

2. Copy of all Disposal Waste Manifests – within 10 calendar days of project closeout.

1. END OF SECTION –

SECTION 01906
TEST LABORATORY SERVICES

PART 1 – GENERAL

The area and final clearance air monitoring will be accomplished under the direction of a **licensed individual asbestos consultant** retained by the Owner.

1.0 DESCRIPTION OF THE WORK

a. This section describes air monitoring carried out by the owner to verify that the outside environment remain uncontaminated. This section also sets forth-airborne fiber levels both inside and outside the work area as action levels, and describes the action required by the Contractor if an action level is met or exceeded.

b. Air monitoring required by OSHA is work of the Contractor and is not covered in this section.

2.0 RELATED DOCUMENTS

a. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

c. Air Monitoring: During work area clearance is described in Section 01915, Work Area Clearance.

3.0 AIR MONITORING

a. Work Area Isolation: The purpose of the Owner's Representative air monitoring will be to detect faults in the work area isolation such as:

b. Contamination of the building outside of the work area with airborne asbestos fibers,

c. Failure of filtration or rupture in the negative pressure system,

d. Contamination of the exterior of the building with airborne asbestos fibers.

e. Should any of the above occur, the contractor will immediately cease asbestos abatement activities until the fault is corrected. Work will not recommence until authorized by the Owner's Representative.

f. Work Area Airborne Fiber Count: The Owner's Representative will monitor airborne fiber counts in the work area. The purpose of this air monitoring will be to detect airborne fiber counts which may significantly challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from contamination by airborne fibers.

g. Work area clearance: Will be collected to determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level. The Owner's Representative will ensure samples are collected and analyzed in accordance with this requirement.

h. The Owner's Representative will be conducting air monitoring throughout the course of the project.

1.4 AIRBORNE FIBER COUNTS

A. Inside Work Area: Where an enclosure is used, maintain an average airborne count in the work area of less than 0.1 fibers per cubic centimeter. If the fiber count rises above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8 hour period exceeds 0.2 fibers per cubic centimeter, stop all work, leave negative air system in operation, continue to periodically mist the atmosphere within the work area with amended water and notify Owner's Representative. Do not recommence work until authorized in writing by Owner's Representative.

B. If airborne fiber counts exceed 0.2 fibers per cubic centimeter for any period of time cease all work until fiber counts fall below 0.1 fibers per cubic centimeter and notify Owner's Representative. Do not recommence work until authorized in writing by the Owner's Representative.

C. Outside Work Area: If any air sample taken outside of the work area exceeds the action level of 0.01 fibers per cubic centimeter, immediately and automatically stop all work. If this air sample was taken inside the building and outside of critical barriers around the work area immediately erect new critical barriers as set forth in Section 01562 Temporary Enclosures to isolate the affected area from the balance of the building.

D. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, and floor).

E. Decontaminate the affected area in accordance with Section 01914 Cleaning & Decontamination Procedures.

F. Respiratory protection as set forth in Section 01911 Respiratory Protection will be worn in affected area until area is cleared for reoccupancy in accordance with Section 01914 Work Area Clearance.

G. Leave Critical Barriers in place until completion of work and insure that the operation of the negative pressure system in the work area results in a flow of air from the balance of the building into the affected area.

H. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a temporary decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 01563 Decontamination Units. After cleaning and decontamination of the affected area remove the Shower Room and leave the Changing Room in place as an air lock.

I. After certification of visual inspection in the work area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in the section on Work Area Clearance.

J. Effect on Contract Sum: Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities. The Contract Sum and schedule will be adjusted for additional work caused by high airborne fiber counts beyond the Contractor's control.

1.5 ANALYTICAL METHODS

A. The Owner's Representative in analyzing filters used to collect air samples during the abatement process will use the following methods.

B. Mixed Cellulose ester filters will be analyzed using NIOSH 7400 method. A representative of the Consultant who has successfully completed a NIOSH 582 course or equivalent and is a licensed Air Monitoring Technician will carry out this analysis at a Texas Licensed laboratory located off the job site or on site. PCM mixed Cellulose ester filters will be used for analysis of samples collected for the duration of the project, including but not limited to clearance sampling.

1.6 SAMPLE VOLUMES

A. General: The number and volume of air samples taken by the Owner's representative will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used.

1.7 SCHEDULE OF AIR SAMPLES

A. Before Start of Work: The Owner's Representative will secure the following Air Samples to establish a base line before start of work.

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Outside Abatement Area	1	Cellulose Ester	0.01	1250	2-15
Abatement Area	2	Cellulose Ester	0.01	1250	2-15

B. Base Line: Is an action level expressed in fibers per cubic centimeter that is the highest actual result from the background sampling process.

C. During Abatement: The Owner has retained the services of Raba-Kistner Consultants, Inc. to provide inspections and air sampling at the areas being abated throughout the course of the project.

D. Periodic sampling conducted as follows:

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	DETECTION LIMIT (FIBERS/CC)	MINIMUM VOLUME	RATE LPM
Inside Work Area	2/Day	Cellulose Ester	0.01	960	2-15
Outside Work Area	2/day	Cellulose Ester	0.01	960	2-15
Output Negative Pressure System	2/day	Cellulose Ester	0.01	960	2-15
Clean Room	2/day	Cellulose Ester	0.01	960	2-15

E. If airborne fiber counts exceed allowed limits, additional samples will be taken as necessary to monitor fiber levels.

F. Clearance Samples: Upon successful completion of a visual inspection of regulated abatement areas, as scheduled by the contractor followed by encapsulation of the abatement area and a drying period, the Owner's Representative will take the following PCM samples:

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	MINIMUM VOLUME	RATE LPM
Outside Work Area	3	Cellulose Ester	1200	<16

LOCATION SAMPLED	NUMBER OF SAMPLES	FILTER MEDIA 25 mm	MINIMUM VOLUME	RATE LPM
Work Space	2(minimum)	Cellulose Ester	1200	<16

NOTE: Retesting of clearance samples will be at the Contractor's expense.

H. Clearance will be given to a work space area, when all samples collected and analyzed by PCM are below 0.01 F/cc

I. Inspection: The Consultant or his Representative (Owner's Representative), in addition to providing air monitoring services will provide periodic, on-site inspection of all work activities. Twenty-four (24) hour advance notice of the work is required. The following project points will be key, critical inspections:

1. Inspection of Work Area(s) and Containments Prior to Start of Removal:

   a. Removal operations will not proceed until the Owner's Representative has completed inspection of the work area preparations and provided written approval to proceed.

2. Inspection during Removal: The Owner's Representative will conduct periodic inspections throughout the duration of the project.

3. Inspection of the work area(s) or Containment After Completion of Removal Work, but prior to Encapsulation of Surfaces: A visual inspection of the work site and/or containment area and removal surface will be conducted at this point by the Owner's Representative and encapsulation will not proceed until written approval to do so has been received by the Contractor.

4. Work Area(s) or Containment Clearance, after Encapsulation but prior to Work Area or Containment Disassembly: Air clearance tests will be conducted after a visual inspection of the encapsulation, **but not until the encapsulant is fully dry.** A level of equal to or below 70 s/mm^3.of air sampled on ALL filters, as evaluated by TEM, will be required for clearance.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 ADDITIONAL TESTING

A. The Contractor may conduct his own air monitoring and laboratory testing. If he elects to do this, the cost of such air monitoring and laboratory testing will not be included in the Contract Sum and will be at the Contractor's expense.

3.2 PERSONAL MONITORING

A. Perform air monitoring as required to meet OSHA Requirements for maintenance of Time Weighted Averaged (TWA) fiber counts for types of respiratory protection provided. Owner Representatives will not be performing air monitoring to meet these OSHA requirements as part of this contract.

B. A copy of the Personnel Monitoring results will be submitted to the Owner's Representative at least every three days.

C. Retests and Reinspections: as required.

D. Additional sample collection and inspections by the Owner's Representative, if required due to failure of the Contractor to achieve clearances, containment failure, retests, etc. will be backcharged by the Owner to the Contractor at the Owner's cost for time and testing.

E. Testing Outside of Project Schedule:

F. If the Contractor fails to achieve completion within the Contract time schedule, the costs of inspections and air monitoring services will be backcharged to the Contractor by the Owner at the Owner's cost for time and testing.

-END OF SECTION-

SECTION 01907
TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

B. DESCRIPTION OF REQUIREMENTS

1. General: Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

C. PRODUCTS

D. MATERIALS AND EQUIPMENT

1. General: Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

1.2 SCAFFOLDING

A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding will comply with all applicable OSHA provisions.

B. Equip rungs of all metal ladders, etc. with an abrasive non-slip surface.

C. Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

D. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damage. Clean, as necessary, debris from non-slip surfaces.

E. At the completion of abatement work, clean all construction aids within the work area, wrap in one layer of 6-mil polyethylene sheet and seal before removal from the work area.

1.3 WATER SERVICE

A. Temporary Water Service Connection: All connections to the Owner's water system will include backflow protection. Valves will be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings will be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves will be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

B. General: Water service will be provided for at the Owner's expense. Supply hot and cold water to the Decontamination Unit in accordance with Section 01563. Hot water may be secured from the buildings hot water system, if available. Maintain hose connections and outlet valves in leak proof condition. Where spillage or leakage might damage finish work below an outlet, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

C. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

1.4 ELECTRICAL SERVICE

A. General: Electrical services will be provided at the Owner's expense. The Contractor will bear the cost of all temporary connections if the service is not available from normal on-site services. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the abatement period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

B. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be least exposed to damage from abatement operations.

C. Temporary Wiring: In the work area will be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

D. Lockout: Lockout all existing power to or through the work area. Unless specifically noted otherwise, existing power and lighting circuits to the work area are not to be used. All power and lighting to the work area and decontamination units are to be provided from a temporary electrical panel.

E. Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.

F. Temporary Power: Provide service to Decontamination Unit, if used, subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect will be sized and equipped to accommodate all electrical equipment required for completion of the work.

G. Voltage Differences: Provide identification warning signs at power outlets that are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers will be provided where required to provide voltages necessary for work operations.

H. Ground Fault Protection: Provide receptacle outlets equipped with groundfault circuit interrupters, reset button and pilot light, for plug-in connection of power tools and equipment.

I. Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

J. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage indicated or required for adequate illumination. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

1.5 FIRST AID

A. First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

1.6 FIRE EXTINGUISHERS

A. Fire Extinguishers: Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of recommended types for the exposures in each case.

B. Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate fire extinguishers where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher in each Work Area, in equipment room and one outside work area in clean room.

1.7 INSTALLATION, GENERAL

A. General: Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

B. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

1.8 SANITARY FACILITIES

A. Toilets: Contractor personnel may use Toilets that have been designated by the Owner. Facilities will be cleaned on a daily basis.

-END OF SECTION-

SECTION 01908
TEMPORARY PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

PART 1 - GENERAL

A. Drawings and general provisions of the contract, and other Division-1 Specification sections, apply to work of this section.

B. Monitoring: Continuously monitor and record the pressure differential between the work area and the building outside of the work area with a monitoring device incorporating a continuous recorder (e.g. strip chart). If more than one containment is operated concurrently, a separate continuous record will be required for each containment.

PART 2 - PRODUCTS

2.1 HEPA FILTERED FAN UNITS

A. General: Supply the required number of asbestos air filtration units to the site in accordance with these specifications. Each unit will include the following:

B. Cabinet: Constructed of steel or other durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard-size doorways. Cabinet will be factory sealed to prevent asbestos containing dust from being released during use, transport, or maintenance. Access to and replacement of all air filters will be from intake end. Unit will be mounted on casters or wheels.

C. Fans: Rate capacity of fan according to useable air-moving capacity under actual operating conditions. Use centrifugal-type fan.

D. HEPA Filters: The final filter will be the HEPA type. The filter media (folded into closely pleated panels) must be completely sealed on all edges with a structurally rigid frame.

1. A continuous rubber gasket will be located between the filter and the filter housing to form a tight seal.

2. Each filter will be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles. Testing will be in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A.

3. Each filter will bear a UL586 label to indicate ability to perform under specified conditions.

4. Each filter will be marked with the name of the manufacturer, serial

number, airflow rating, efficiency and resistance, and the direction of test airflow.

E. Pre-filters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required.

1. The first-stage pre-filter will be a low-efficiency type (e.g., for particles 10 um and larger).

2. The second-stage (or intermediate) filter will have a medium efficiency (e.g., effective for particles down to 5 um).

3. Pre-filters and intermediate filters will be installed either on or in the intake grid of the unit and held in place with special housings or clamps.

F. Instrumentation: Each unit will be equipped with a Magnahelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed. A table indicating the useable air-handling capacity for various static pressure readings on the Magnahelic gauge will be affixed near the gauge for reference, or the Magnahelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point. Provide units equipped with an elapsed time meter to show the total accumulated hours of operations.

G. Safety and Warning Devices: The unit will have an electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter. Units will be equipped with automatic shutdown system to stop fan in the event of a major rupture in the HEPA filter or blocked air discharge. Warning lights are required to indicate normal operations, too high a pressure drop across the filters (i.e., filter overloading), and too low of a pressure drop (i.e., major rupture in HEPA filter or obstructed discharge).

H. The National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL) will approve electrical components. Each unit will be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet will be grounded.

I. Manufacturers: Subject to compliance with requirements.

PART 3 - EXECUTION

3.1 PRESSURE DIFFERENTIAL

A. Isolate the work area from all-adjacent areas or systems of the building with a pressure differential that will cause a movement of air from outside to inside at any breech in the physical isolation of the work area.

3.2 MONITORING

A. Vent HEPA filtered fan units to outside of the building unless authorized in writing by the Owner's Representative.

B. Mount units to exhaust directly or through disposable ductwork.

C. Use only disposable ductwork except for sheet metal connections and elbows.

D. Use ductwork and fittings of the same diameter or larger than the discharge connection on the fan unit.

E. Use inflatable, disposable plastic ductwork in lengths not greater than 100 feet.

F. Use spiral wire-reinforced flex ductwork in lengths not greater than 50 feet.

G. If the direction of the discharge from a fan unit is not aligned with the duct, use sheet metal elbow to change direction. Use six (6) feet of spiral reinforced duct after direction change.

3.3 PREPARATION OF THE WORK AREA

A. NOTE: The Contractor will provide an adequate number of HEPA filtered fan units to exhaust fumes or vapors from the work area to an area outside of the building.

B. Air Circulation: For purposes of this section, air circulation refers to either the introduction of outside air to the work area or the circulation and cleaning of air within the work area.

C. Air circulation in the work area is a minimum requirement (four complete air changes per hour) intended to help maintain airborne fiber counts at a level that does not significantly challenge the work area isolation measures. The contractor may also use this air circulation as part of the engineering controls in his worker protection program.

3.4 USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

A. Use of System during Abatement Operations: Start fan units before beginning work (before any asbestos containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant pressure differential and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.

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

C. At completion of abatement work, allow exhaust units to turn, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.

D. Dismantling the System: When a final inspection and the results of final air tests indicate that the area has been decontaminated, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

-END OF SECTION-

SECTION 01909
TEMPORARY ENCLOSURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 SUBMITTALS

A. Submit Contingency Plans for safe evacuation of the work area in case of fire or injury.

1.3 SAFETY

A. Contact fire control agencies to review procedures prior to start of work.

PART 2 - PRODUCTS

2.1 Polyethylene Sheet: Provide flame-resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Where a fire hazard exists, the Underwriters Laboratory (UL) will certify all plastic sheeting as being fire retardant. Provide largest size possible to minimize seams, 6.0 mils thick, and frosted or black as indicated.

2.2 Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.

2.3 Spray Cement: Provide adhesive that is specifically formulated to stick tenaciously to sheet polyethylene.

PART 3 - EXECUTION

3.1 SEQUENCE OF WORK

A. Carry out work of this section sequentially. Complete each activity before proceeding to the next.

3.2 GENERAL

A. Work Area: Is the location where asbestos related work occurs. It is a variable of the extent of work of the contract. It may be a portion of a room, a single room, or a complex of rooms. A "work area" is considered contaminated during the work, and must be isolated from the balance of the building, and decontaminated at the completion of the asbestos-control work.

1. Completely isolate the work area so as to prevent asbestos containing dust or debris from passing beyond the isolated area. Should the areas beyond the work area(s) become contaminated with asbestos containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in section 01711. Perform all such required cleaning or decontamination at no additional cost to the Owner.

2. Place all tools, scaffolding, staging, etc. necessary for the work in the building prior to erection of plastic sheeting temporary enclosure.

3. Disable Ventilating Systems or any other system bringing air into or out of the work area. Disable system by disconnecting wires, removing circuit breakers, by lockable switch or other positive means that will prevent accidental premature restarting of equipment.

4. Lockout power to the work area by switching off all breakers serving power or lighting circuits to the work area (this is applicable where full enclosure is required). Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Contractor's Superintendent.

5. Lockout power to circuits running through work area wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Contractor's Superintendent. If circuits cannot be shut down for any reason, label at intervals 4'- 0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard". Label circuits in hidden locations but which may be affected by the work in a similar manner.

6. Emergency Exits: Provide emergency exits and emergency lighting, as set forth below, where full containment will be utilized.

7. At each existing exit door from the Work Area, provide the following means for emergency exiting:

8. Arrange exit door so that it is secure from outside the Work Area but permits exiting from the Work Area.

9. Mark outline of door on Primary and Critical Barriers with luminescent paint at least 1" wide. Hang a razor knife on a string beside outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least one foot high and 2" thick.

10. Provide battery-operated emergency lighting that switches on automatically in the event of a power failure.

3.3 CONTROL ACCESS

A. Permit access to the work area only through the Decontamination Unit. All other means of access will be closed off and sealed and warning signs displayed on the clean side of the sealed access.

B. Provide Warning Signs at each locked door leading to Work Area reading as follows in both English and Spanish:

LEGEND	NOTATION
KEEP OUT	3" Sans Serif Gothic or Block
BEYOND THIS POINT	1" Sans Serif Gothic or Block
ASBESTOS ABATEMENT WORK IN PROGRESS	1" Sans Serif Gothic or Block
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH	14 Point Gothic

3.4 ALTERNATE METHODS OF ENCLOSURE

A. Alternate methods of containing the work area may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without prior written approval of the Owner's Representative.

3.5 RESPIRATORY AND WORKER PROTECTION

A. Before proceeding beyond this point in providing Temporary Enclosures:

1. Provide Respiratory Protection per Section 01911.
2. Provide Worker Protection per Section 01910.

3.6 CRITICAL BARRIERS

A. Completely separate the work area from other portions of the building and the outside by sheet plastic barriers at least 6 mil in thickness and by sealing with

duct tape.

B. Individually seal: All ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors, speakers, and other openings into the work area with duct tape alone or with polyethylene sheeting at least 6 mil in thickness, taped securely in place with duct tape. Maintain seal until all work including Project Decontamination is completed. Take care in sealing off lighting fixtures to avoid melting or burning of sheeting.

C. Provide Sheet Plastic barriers at least 6 mil in thickness as required to completely seal openings from the work area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape and spray cement.

D. Provide Decontamination Units per Section 01912.

E. Mechanically Support sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic.

F. Provide Negative Pressure System per Section 01908.

G. Clean housings and ducts of all overspray materials prior to erection of the Critical Barrier Polyethylene sheeting.

3.7 PREPARE AREA

A. Scaffolding: If fixed scaffolding is to be used to provide access, HEPA vacuum and wet clean area prior to scaffolding installation.

B. Clean all fixtures, equipment, etc., with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Section 01711 Cleaning and Decontamination Procedures, prior to being moved or covered. All fixtures, equipment, etc., are deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by the Owner's Representative.

C. Clean all surfaces in work area with a HEPA filtered vacuum or by wet wiping prior to the installation of primary barrier.

3.8 PRIMARY BARRIER

A. Protect building and other surfaces in the Work Area from damage from water and high humidity or from contamination from asbestos containing debris, slurry, or high airborne fiber levels by covering with a primary barrier as described below:

B. Enclose Work Areas with two (2) layers of plastic sheeting on floor and one (1) layer on walls opposite the work area, or as otherwise directed on the contract drawings or in writing by the Owner's Representative.

C. Cover floor of work Area with 2 individual layers of clear polyethylene sheeting, each at least 6-mil in thickness. Both spray-glue and duct tape all seams in floor covering as well as perimeter edge. Locate seams in top layer six feet (6') from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc., which cover any part of the surface to be worked on.

D. Cover all walls opposite the Work Area, including "Critical Barrier" sheet plastic barriers, with one layer of polyethylene sheeting, at least 6 mil in thickness, mechanically supported and sealed with duct tape or spray-glue in the same manner as "Critical Barrier" sheet plastic barriers. Tape all joints including the joining with the floor covering with duct tape or as otherwise indicated on the contract documents or in writing by the Owner's Representative.

E. Cover sheet plastic in areas where scaffolding is to be used with a single layer of 1/2" CDX plywood or 1/4" tempered hardboard. Wrap edges and corners of each sheet with duct tape. At completion of abatement work, wrap plywood or hardboard with 2 layers of 6-mil polyethylene and move to next Work Area or dispose of as an asbestos- contaminated waste material in accordance with Section 01917 of this specification.

F. **Viewing Window: Where feasible, construct a plexiglass-viewing window in accordance with TDH latest revised rules.**

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

H. Repair of Damaged Polyethylene Sheeting: remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dries.

3.9 STOP WORK

A. If the Critical or Primary barrier fails or is breached in any manner, stop work immediately. Do not start work until authorized in writing by the Owner's Representative.

3.10 EXTENSION OF WORK AREA

A. Extension of Work Area: If the enclosure barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the work area, enclose it as required by this Section of the specification and decontaminate it as described in Section 01912.

3.11 SECONDARY BARRIER

A. Secondary layer of plastic as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work is specified in the appropriate work sections.

-END OF SECTION-

SECTION 01910
WORKER PROTECTION

PART 1 - GENERAL

The minimum respiratory protection during removal of non-friable ACM is half face respirators. The minimum respiratory protection during removal of all friable ACM is PAPR respirators. The contractor will provide information to assure that the above respiratory protection is sufficient in accordance with 29 CFR 1926.1101 / 29 CFR1910.134.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Respiratory Protection is specified in Section 01911.

1.4 WORKER TRAINING

A. Train, in accordance with 29 CFR 1926 and 40 CFR PART 763 all workers in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. Include but do not limit the topics covered in the course to the following:

B. Methods of recognizing asbestos.

C. Health effects associated with asbestos.

D. Relationship between smoking and asbestos in producing lung cancer.

E. Nature of operations that could result in exposure to asbestos.

F. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:

1. Engineering controls
2. Work Practices

3. Respirators
4. Housekeeping procedures
5. Hygiene facilities
6. Protective clothing
7. Decontamination procedures
8. Emergency procedures
9. Waste disposal procedures

G. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134

H. Appropriate work practices for the work

I. Requirements of medical surveillance program

J. Review of 29 CFR 1926

K. Negative air systems

L. Work practices including hands on or on-job training

M. Personal decontamination procedures

N. Air monitoring, personal and area

1.5 MEDICAL EXAMINATIONS

A. Provide medical examinations for all workers who may encounter an airborne fiber level of 0.1 f/cc or greater for an 8-hour time weighted average. In the absence of specific airborne fiber data provide medical examination for all workers who will enter the work area for any reason. Examination will as a minimum meet OSHA requirements as set forth in 29 CFR 1926 In addition, provide an evaluation of the individuals ability to work in environments capable of producing heat stress in the worker.

1.6 SUBMITTALS

A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.

B. Certificate Worker Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section, for each worker who is to be at the job site or enter the work area.

C. Report from Medical Examination: Conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the work area. Submit, at a minimum, for each worker the following:

D. Name and Social Security Number

E. Physicians Written Opinion from examining physician including at a minimum the following:

F. Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.

G. Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.

H. Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.

I. Copy of information that was provided to physician in compliance with 29 CFR 1926.

J. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING

A. Coveralls: Provide disposable (Tyvek type) full-body coveralls and disposable head covers and require that all workers in the work area wear them. Provide a sufficient number for all required changes, for all workers in the work area.

B. Hard Hats: Provide head protection (hard hats) as required by OSHA for all workers, and provide spares for use by Owner. Label hats with same warning labels as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the work area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from work area at the end of the work.

C. Goggles: Provide eye protection (goggles) as required by OSHA for all workers

involved in scraping, spraying, or any other activity which may potentially cause eye injury.

D. Gloves: Provide work gloves to all workers and require that they be worn at all times in the work area. Do not remove gloves from work area. Dispose gloves as asbestos contaminated waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT

A. Respirators, disposable coveralls, head covers, and footwear covers will be provided by the contractor for the Owner and other authorized representatives. Provide two (2) **unused** respirators and six (6) complete **unused** coveralls and, where applicable, six (6) **unused** respirator filter changes per day.

PART 3 - EXECUTION

3.1 GENERAL

A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the work area.

B. Each time work area is entered remove street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3.2 DECONTAMINATION PROCEDURES

A. Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the work area with a half or full face cartridge type respirator:

B. When exiting area, remove disposable coveralls, disposable headcovers, and disposable footwear covers or boots in the equipment room.

C. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid asbestos fibers while showering. The following procedure is required as a minimum:

1. Thoroughly wet body from neck down.

2. Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.

3. Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, and respirator and filter (air purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breath.

4. Dispose of wet filters from air purifying respirator.

5. Carefully wash face piece of respirator inside and out.

6. Shower completely with soap and water.

7. Rinse thoroughly.

8. Rinse shower room walls and floor prior to exit.

9. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

D. Require that workers NOT eat, drink, smoke, chew gum or tobacco in the work area. To eat, chew, drink or smoke, workers will follow the procedure described above, then dress in street clothes before entering the non-work areas of the building.

3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

A. Following this section is a Certificate of Worker Training. After each worker has been included in the Contractor's Respiratory Protection Program, completed the training program, and medical examination secure a fully executed copy of this form.

-END OF SECTION-

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT

PROJECT NAME _____ DATE _____
PROJECT ADDRESS _____
CONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you. By signing this certification you are assuring the owner that your employer has met these obligations to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

- Physical characteristics of asbestos
- Health hazards associated with asbestos
- Respiratory protection
- Use of protective equipment
- Negative pressure systems
- Work practices including hands on or on-job training
- Personal decontamination procedures
- Air monitoring, personal and area

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months, which was paid for by my employer. This examination included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

Signature _____
Printed Name _____
Social Security Number _____
Witness _____

SECTION 01911
DECONTAMINATION UNITS

PART 1 - GENERAL

A decontamination unit, as described in this section, will be required during the removal of all asbestos containing materials.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Provide separate personnel and equipment decontamination facilities. Require that the Personnel Decontamination Unit be the only means of ingress and egress for the work area. Require that all materials exit the work area through the Equipment Decontamination Unit.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Refer to Section 01907 Temporary Facilities - Asbestos Abatement for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

PART 2 - PRODUCTS

2.1 Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick as indicated, clear, frosted, or black as indicated.

2.2 Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.

2.3 Spray Cement: Provide adhesive that is specifically formulated to stick tenaciously to sheet polyethylene.

2.4 Shower: Provide a shower that meets approval of the Owner's Representative.

2.5 Shower Head and Controls: Provide a factory made showerhead producing a spray of water that can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.

2.6 Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos contaminated water from the work area. Provide units with

disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.

2.7 Primary Filter - Pass particles 20 microns and smaller
Secondary Filter - Pass particles 5 microns and smaller

2.8 Sump Pump: Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.

PART 3 - EXECUTION

3.1 GENERAL

A. Personnel Decontamination Unit: Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Shower Room, Equipment Room. Require all persons without exception to pass through this decontamination unit for entry into and exiting from the work area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit. Provide temporary lighting within decontamination units as necessary to reach a lighting level of 100-foot candles.

B. Changing Room (clean room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing. Construct using black polyethylene sheeting, at least 6-mil in thickness, to provide an airtight seal between the Changing Room and the rest of the building. Locate so that access to Work Area from Changing Room is through Shower Room. Separate Changing Room from the building by a sheet polyethylene flapped doorway.

C. Require workers to remove all street clothes in this room, dress in clean disposable coveralls, and don respiratory protection equipment. Do not allow asbestos contaminated items to enter this room. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.

D. An existing room may be utilized as the Changing Room if it is suitably located and of a configuration whereby workmen may enter the Changing Room directly from the Shower Room. Protect all surfaces of room with sheet plastic. Authorization for this must be obtained from the Owner's Representative in writing prior to start of construction.

E. Maintain floor of changing room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.

F. Damp wipe all surfaces twice after each shift change with a disinfectant solution.

G. Provide a continuously adequate supply of disposable bath towels.

H. Provide posted information for all emergency phone numbers and procedures.

I. Shower Room: Provide a completely water tight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Changing Room, or for showering by workers headed out of the Work Area after undressing in the Equipment Room.

1. Separate this room from the rest of the building with airtight walls fabricated of 6-mil polyethylene.

2. Separate this room from the Changing and Equipment Rooms with airtight walls fabricated of 6-mil polyethylene.

3. Provide splashproof entrances to Changing and Equipment Rooms with 2 doors.

4. Provide showerhead and controls.

5. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.

6. Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.

7. Arrange so that water from showering does not splash into the Changing or Equipment Rooms.

8. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the work area.

9. Provide flexible hose showerhead.

10. Pump wastewater to drain or to storage for subsequent disposal. If pumped to drain, provide 20 micron and 5 micron waste water filters in line to drain or waste water storage. Change filters daily or more often if necessary. Locate filters inside shower unit so that water lost during filter changes is caught by shower pan.

11. Provide hose bib.

12. Airlock: Provide an airlock between the shower room and the equipment room. This is a transit area for workers. Separate this room from the equipment room by a sheet plastic doorway.

13. Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers. Separate this room from the work area by a 6-mil polyethylene flap doorway.

14. Separate this room from the rest of the building with airtight walls fabricated of 6-mil polyethylene.

15. Separate this room from the Shower Room and Work Area with airtight walls fabricated of 6-mil polyethylene.

J. Work Area: Separate work area from the Equipment Room by black polyethylene barriers. If the airborne asbestos level in the work area is expected to be high, as in dry removal, add an intermediate cleaning space between the Equipment room and the Work area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6-mil polyethylene per shift change and remove contaminated layer after each shift.

3.2 CONSTRUCTION

A. Walls and Ceiling: Construct air tight walls and ceiling using polyethylene sheeting, at least 6-mil in thickness. Attach to existing building components or a temporary framework.

B. Floors: Use 2 layers (minimum) of 6-mil. Polyethylene sheeting to cover floors in the Equipment, Shower (underneath shower pan), and Changing Rooms. Provide an additional layer in the Equipment Room for every shift change expected. Roll one layer of plastic from Equipment Room into Work Area after each shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

C. Doors: Fabricated from overlapping sheets with openings a minimum of three

feet (3') wide. Configure so that sheeting overlaps adjacent surfaces. Weigh sheets at bottoms as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6') between entrance and exit of any room.

D. If the decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 3 inch hardboard or 2 inch plywood "ceiling" with polyethylene sheeting, at least 6 mil in thickness covering the top of the "ceiling".

E. Alternate methods of providing decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.

F. Electrical: Provide subpanel at Changing Room to accommodate all removal equipment. Power subpanel directly from a building electrical panel. Connect all electrical branch circuits in decontamination unit and particularly any pumps in shower room to a ground-fault circuit protection device.

3.3 DECONTAMINATION SEQUENCE

A. Entering Work Area:

B. Worker enters Changing Room and removes street clothing, puts on clean disposable overalls and respirator, and passes through the Shower Room into the Equipment Room.

C. Any additional clothing and equipment left in Equipment Room needed by the worker are put on in the Equipment Room.

D. Worker proceeds to Work Area.

E. Exiting Work Area:

F. Before leaving the work area, require the worker to remove all gross contamination and debris from overalls and feet. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment. Extra work clothing may be stored in contaminated end of the Equipment Room. Disposable coveralls are placed in a bag for disposal with other material. Decontamination procedures found in Section 01914 will be followed by all individuals leaving the work area.

G. After showering, the worker moves to the Changing Room and dresses in either new coveralls for another entry or street clothes if leaving.

3.4 EQUIPMENT DECONTAMINATION UNITS

A. Provide an Equipment Decontamination Unit consisting of a serial arrangement of rooms, Clean Room, Holding Room, Wash Room for removal of equipment and material from work area. Do not allow personnel to enter or exit work area through Equipment Decontamination Unit.

B. Wash Down Station: Provide an enclosed shower unit located in work area just outside Wash Room as an equipment, bag and container cleaning station.

C. Wash Room: Provide wash room for cleaning of bagged or containered asbestos containing waste materials passed from the work area. Separate this room from the work area by a single flap of 6-mil polyethylene sheeting.

D. Holding Room: Provide Holding Room as a drop location for bagged asbestos containing materials passed from the Wash Room. Separate this room from the adjacent rooms by double flaps fabricated from ±1/16" thick single ply rubber roofing material either EPDM or Neoprene.

E. Clean Room: Provide Clean Room to isolate the Holding Room from the building exterior.

F. Separate this room from the exterior by a single flap of 6-mil polyethylene sheeting.

G. Equipment or Material: Take all equipment or material from the work area through the Equipment Decontamination Unit according to the following procedure:

1. At washdown station, thoroughly wet-clean contaminated equipment or sealed polyethylene bags and pass into Wash Room.

2. When passing equipment or containers into the Wash Room, close all doorways of the Equipment Decontamination Unit, other than the doorway between the Washdown Station and the Wash Room. Keep all outside personnel clear of the Equipment Decontamination Unit.

3. Once inside the washroom, wet-clean the bags and/or equipment.

4. When cleaning is complete pass items into Holding Room. Close all doorways except the doorway between the Holding room and the Clean Room.

5. Workers from the building exterior enter Holding Area and remove

decontaminated equipment and/or containers for disposal.

6. Require these workers to wear full protective clothing and wearing appropriate respiratory protection.

4. At no time is a worker from an uncontaminated area to enter the enclosure when a removal worker is inside.

3.5 CLEANING OF DECONTAMINATION UNITS

A. Clean debris and residue from inside of Decontamination Units on a daily basis or as otherwise indicated on contract drawings. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.

B. If the Changing Room of the Personnel Decontamination Unit becomes contaminated with asbestos containing debris, abandon the entire decontamination unit and erect a new decontamination unit. Use the former Changing Room as an inner section of the new Equipment Room.

3.6 SIGNS

A. Post an approximately 20 inch by 14 inch manufactured caution sign at each entrance to the work area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

LEGEND

Danger

Asbestos

Cancer and Lung Disease Hazard

Respirators and Protective Clothing are Required in this Area

B. Provide spacing between respective lines at least equal to the height of the respective upper line. Post an approximately 10 inch by 14 inch manufactured sign at each entrance to each work area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

LEGEND	NOTATION
No Food, Beverages or Tobacco Permitted	:" Block
All Persons Will Don Protective Clothing (Coverings) Before Entering the Work Area	:" Block
All Persons Will Shower Immediately After Leaving Work Area and Before Entering the Changing Area	:" Block

-END OF SECTION-

SECTION 01912
PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

A. Definitions: Project closeout is the term used to describe certain collective project requirements, indicating completion of the Work, that are to be fulfilled near the end of the Contract time in preparation for final acceptance and occupancy of the Work by the Owner, as well as final payment to the Contractor and the normal termination of the Contract.

B. Time of closeout is directly related to "Substantial Completion"; therefore, the time of closeout may be either a single time period for the entire Work or a series of time periods for individual elements of the Work that have been certified as substantially complete at different dates. This time variation, if any, will be applicable to the other provisions of this section.

1.3 SUBSTANTIAL COMPLETION

A. Inspection Procedures: Upon receipt of Contractor's request for inspection, the Owner's Representative will either proceed with inspection or advise Contractor of unfulfilled prerequisites.

B. Following initial inspection, Owner's Representative will either prepare the certificate of substantial completion, or will advise Contractor of work that must be performed before the certificate will be issued. The Owner's Representative will repeat the inspection when requested and when assured that the Work has been substantially completed.

C. Results of the completed inspection will form the initial "punch-list" for final acceptance.

1.4 PREREQUISITES TO FINAL ACCEPTANCE

A. General: Complete the following before requesting the Owner's Representative's final inspection for clearance of final acceptance, and final payment as required by the General Conditions. List known exceptions, if any, in request:

B. Submit the payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products

and completed operations where required.

C. Submit an updated final statement, accounting for final additional changes to the Contract Sum.

D. Submit a certified copy of the Owner's Representatives final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Owner's Representative and Owner.

E. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

F. Re-inspection Procedure: The Owner's Representative will re-inspect the Work upon receipt of the Contractor's notice that the work, including punch-list items resulting from earlier inspections, has been completed, except for these items whose completion has been delayed because of circumstances that are acceptable to the Owner's Representative.

G. Upon completion of re-inspection, the Owner's Representative will either prepare a certificate of final acceptance, or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.

H. If necessary, the re-inspection procedure will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Specific requirements for record documents are indicated in the individual sections of these specifications. Other requirements are indicated in the General Conditions. General submittal requirements are indicated in "submittals" sections.

B. Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect/Engineer's reference during normal working hours.

C. Note related change-order number where applicable.

D. Record Specifications: Maintain one complete copy of the Project Manual, including specifications and addenda, and one copy of other written construction documents such as change orders and similar modifications issued in printed form during construction. Mark these documents to show substantial variations in the actual work performed in comparison with the text of the specifications and modifications as issued. Give particular attention to substitutions, selection of options and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record

drawing information and product data, where applicable.

E. Upon completion of the Work, submit record specifications to the Owner's Representative for the Owner's records.

F. Record Sample Submittal: Immediately prior to date or dates of substantial completion, the Contractor will meet at the site with the Owner's Representative and the Owner's personnel, if desired, to determine which, if any, of the submitted samples that have been maintained by the Contractor during progress of the Work, are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's sample storage space.

G. Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record keeping and submittals in connection with the actual performance of the Work. Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

1.6 FINAL CLEANING

A. General: General Cleaning during the regular progress of the Work is required by the General Conditions and is included under section "Temporary Facilities".

B. Removal of Protection: Except as otherwise indicated or requested by the Owner's Representative's, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

C. Compliance: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

D. Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these to the Owner's best advantage as directed.

-END OF SECTION-

SECTION 01913
PROJECT DECONTAMINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

A. General: This section applies to areas where surfacing ACM is to be abated. Since the asbestos removal for these areas is primarily friable materials, the workspace is deemed contaminated before start of the work and in need of decontamination. In this case the work is a four-step procedure with two cleanings of the room surfaces to remove any new or existing contamination. In both cases, operation of the negative pressure system is used to remove airborne fibers generated by the abatement work.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Removal of Gross Debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:

1. Section 0916 – Removal of Asbestos Containing Materials

B. Work Area Clearance: Air testing and other requirements that must be met before release of Contractor and re-occupancy of the work area are specified in this section.

1.4 GENERAL

A. Work of This Section: Includes the decontamination of air in the Work Area which has been, or may have been contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos containing materials in the space.

B. Work of This Section: Includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work including:

Critical barriers erected by work of Section 01909.
Decontamination Unit erected by work of Section 01915.

C. Work of This Section: Includes the cleaning, and decontamination of all surfaces

(ceiling, walls, floor) of the Work Area, and all furniture or equipment in the Storage Work Area.

1.5 START OF WORK

A. Previous Work: During completion of the asbestos abatement work specified in other sections, the Secondary Barrier of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.

B. Start of Work: Work of this section begins with the cleaning of the work area. At start of work the following will be in place:

1. Primary Barriers

2. Critical Barriers

3. Decontamination Units for personnel and equipment in operating condition.

1.6 FIRST CLEANING

A. First Cleaning: Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Absolute (HEPA) filtered vacuum. (Note: A HEPA vacuum will fail if used with wet material.) Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.

B. Remove all filters in the pressure handling system and dispose of them as asbestos containing waste in accordance with the requirements of Section 01917.

1.7 SECOND CLEANING

A. Carry out a second cleaning of all surfaces in the work area in the same manner as the first cleaning.

B. Immediately following the second cleaning of the work area, remove the primary barrier sheets and Material Decontamination Unit, if there is one, leaving only:

C. Critical Barrier: Which forms the sole barrier between the work area and other portions of the building.

D. Critical Barrier Sheeting: Over lights, ventilation openings, doorways, and other openings.

E. Decontamination Unit: For personnel in operating condition.

1.8 FINAL CLEANING

A. Final Cleaning: If dust is apparent, carry out a final cleaning of all surfaces in the work area in the same manner as the previous cleaning.

1.9 VISUAL INSPECTION

A. After Final Cleaning, Perform a Complete Visual Inspection of the entire work area including: decontamination unit, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. If any such debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the verification, by the Owner's Representative.

1.10 FINAL AIR SAMPLING

A. Phase Contrast Microscopy (PCM): After the work space work area is found to be visually clean, and then encapsulated, air samples will be taken and analyzed in accordance with the procedures for PCM sampling.

B. If Release Criteria is not met, repeat Final Cleaning and continue decontamination procedure from that point.

C. If more than one final clearance inspections and samplings are required, the Contractor will bear the cost of analysis and time involved.

D. If release criteria is met, remove the Critical Barriers separating the work area from the rest of the building and shut down and remove the negative pressure system.

1.11 COMPLETION OF ABATEMENT WORK

A. Seal negative air machines with 6-mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from work area.

B. Asbestos Abatement Enclosure Work is Complete upon meeting the work area

clearance criteria and fulfilling the following:

C. Remove all equipment, materials, and debris from the work site.

D. Dispose of all asbestos containing waste material as specified in Section 01917.

E. Asbestos Abatement Enclosure Work is Substantially Complete upon meeting the requirements of this section and section 01909, including submission of Certificate of Visual Inspection.

G. Receipts documenting proper disposal as required by section 01917.

1.12 VERIFICATION OF VISUAL INSPECTION

A. Following this section is a "Verification of Visual Inspection". This document is to be completed by the Contractor and verified by the Owner's Representative.

B. Submit completed document with application for final payment. Final payment will not be made until this verification is executed.

-END OF SECTION-

VERIFICATION OF VISUAL INSPECTION

In accordance with Section 01914 "Project Decontamination" the contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, Decontamination Unit, sheet plastic, etc.) and has found no dust, debris or residue.

BY: (Signature)_____(Date) _____

(Print Name) _____

(Print Title) _____

OWNER REPRESENTATIVE VERIFICATION

The Owner Representative hereby verifies that he has accompanied the contractor on his visual inspection and that this inspection has been thorough and to the best of his knowledge and belief, the contractor's verification above is a true and honest one.

BY: (Signature)_____(Date) _____

(Print Name) _____

(Print Title) _____

SECTION 01914
WORK AREA CLEARANCE

PART 1 - GENERAL:

Interior clearance air samples will be collected and the samples from the work areas will be analyzed using PCM method.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 1 Specification sections, apply to work of this section.

1.2 CONTRACTOR RELEASE CRITERIA

A. The Work is Complete when the work area is visually clean and airborne fiber levels have been reduced to the level specified below.

1.3 AIR MONITORING

A. To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to the specified level, the Owner's Representative will secure samples and analyze them according to the following procedures.

B. Fibers Counted: "Fibers" referred to in this section will be as defined in NIOSH Method 7400, NIOSH 7402, or the AHERA Method.

1.4 SAMPLING

A. Aggressive air samples will be collected based upon the individual circumstances under which the abatement was completed. The Consultant retained by the Owner will determine the type or sample to be collected. In the case of aggressive sampling, the technique is as follows:

1. There are no standards available for flow rate of leaf blowers or large fans. However this information is not critical to the success of the procedure.

2. Before sampling pumps are started the exhaust from forced air equipment (leaf blower with at least 1 horsepower electric motor) will be swept against the abated area and all surfaces.

1.5 SCHEDULE OF AIR SAMPLES

A. General: The number and volume of air samples taken and analytical methods used by the owner will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used.

B. Air Monitoring: Performed by the Owner during abatement work is described in section 01916.

1. If results of the first set of air samples show that the contractor has not achieved clearance level, it is the Contractor's responsibility to perform the additional work required for clearance. In addition, the Contractor will be responsible for all costs involved with any additional air sampling to be performed (cost of analysis and collection).

C. PHASE CONTRAST MICROSCOPY:

1. In each work space area after completion of all cleaning work, samples **may** be taken and analyzed as follows:

Location Sampled	Number of Samples	Filter Media, 25mm	Detection Limit (f/cc)	Minimum Volume (l)	Flow Rate LPM
Work Area	3 per work area	Cellulose Ester	0.01	1250	<15
At Job Site (Blank)	1	Cellulose Ester	0.01	---	---
At Laboratory (Blank)	1	Cellulose Ester	0.01	---	---

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

-END OF SECTION-

SECTION 01915
REMOVAL OF ASBESTOS CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Installation of Critical and Primary Barriers, and work area isolation procedures if used by the Contractor, are set forth in Section 01909.

B. Project Decontamination procedures after removal of the secondary barrier is specified in Section 01.

C. Disposal of asbestos containing waste is specified in Section 01917.

1.3 SUBMITTALS

A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.

B. Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.

C. Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.

D. Adhesive Removal Solvent: Submit product data, use instructions and recommendations from manufacturer of removal solvent intended for use. Include data substantiating that material complies with requirements. Solvents must have a flash point of at least 140° Fahrenheit.

E. NESHAPS Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet asbestos containing materials to which it is applied as required by the National Emission Standard for Hazardous Pollutants (NESHAPS) Asbestos Regulations (40 CFR

61, Subpart M).

F. Material Safety Data Sheet: Submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29CFR 1910.1200) for each surfactant, encapsulating material, or solvent proposed for use on the work. Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

PART 2 - PRODUCTS

2.1 Wetting Materials: For wetting prior to disturbance of asbestos containing materials uses either amended water or a removal encapsulant:

2.2 Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

2.3 Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of asbestos containing material. Use a material which results in wetting of the asbestos containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

2.4 Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 4.0 or 6.0 mils thick as indicated, clear, frosted, or black as indicated.

2.5 Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive that is formulated to aggressively stick to sheet polyethylene.

2.6 Spray Cement: Provide spray adhesive in aerosol cans that is specifically formulated to stick tenaciously to sheet polyethylene.

2.7 Fiberboard Drums: Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.

2.8 Paper board Boxes: Provide heavy duty corrugated paperboard boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.

2.9 Felt: Standard felt approximately 1/16" thick and 36" to 72" in width.

2.10 Disposal Bags: Provide true 6-mil thick leak-tight polyethylene bags labeled with the owners name, building name, project location, date and one of the two labels with text

as follows:

1. First Label:

CAUTION
CONTAINS ASBESTOS FIBERS

AVOID OPENING OR BREAKING CONTAINER
BREATHING ASBESTOS IS HAZARDOUS TO YOUR HEALTH

2. Second Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE ASBESTOS, TREMOLITE, ANTHOPHYLLITE, OR ACTINOLITE FIBERS IS HAZARDOUS TO YOUR HEALTH

PART 3 - EXECUTION

3.1 SECONDARY BARRIER

A. Secondary Barrier: Over the Primary Barrier, install as a drop cloth a clear 6-mil sheet plastic in all areas where asbestos removal work is to be carried out. Completely cover floor with sheet plastic. Where the work is within 10'-0" of a wall, extend the Secondary Barrier up wall to ceiling. Support sheet plastic on wall with duct tape, seal top of Secondary plastic to Primary Barrier with duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall support as necessary to support sheet plastic and prevent its falling during removal operations.

B. Install: Secondary Barrier at the beginning of each work shift. Install only sufficient plastic for work of that shift.

C. Remove: Secondary Barrier at end of each work shift or as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags. Keep material on sheet continuously wet until bagged.

3.2 WORKER PROTECTION

A. Before beginning work with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.3 WET REMOVAL

A. Thoroughly wet to satisfaction of Owner's Representative asbestos **contaminated floor tile** to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with manufacturer's written instructions.

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

C. Removal of the flooring mastics will be removed until the deck is exposed. Flooring mastic removal from floors will be achieved by using hand tools in conjunction with amended water or removal solvents. Solvents must have a flash point of at least 140° Fahrenheit.

D. All waste shall be bagged while wet. Do not allow material to dry out. Bagging of waste shall be performed as follows: twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to washdown station adjacent to equipment decontamination unit. Contractor shall perform all work in compliance to all applicable rules.

3.4 AIRBORNE FIBER COUNTS

A. General: Use work procedures that result in an 8 hour Time Weighted Average (TWA) airborne fiber count less than that indicated in the section of these specifications on "Air Monitoring - Test Laboratory Services". If airborne fiber counts exceed this level, immediately mist the area with amended water to lower fiber counts and revise work procedures to maintain airborne fiber levels within the required limit.

-END OF SECTION-

SECTION 01916
DISPOSAL OF ASBESTOS CONTAINING WASTE MATERIAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions apply to work of this section.

1.2 DISPOSAL

A. Friable asbestos containing waste material and debris which is packaged in accordance with the provision of this Specification may be disposed of at designated sanitary landfills when certain precautions are taken.

B. Notice to Appropriate Environmental Protection Agency regional office.

C. Notice and Permit from Appropriate State and/or Local Agencies.

D. See Section 01904 for Agency Locations and Codes.

E. Dispose of non-friable asbestos containing material in accordance with applicable regulations.

1.3 SUBMITTALS

A. Submit copies of all manifests and landfill receipts to Owner's Representative within 10 calendar days of project completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

A. Carefully load containerized waste on sealed trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.

B. Do not store disposal-bagged material outside of the work area. Take bags from the work area directly to a sealed truck or dumpster. Label containers or bags with the name of the waste generator and the location at which the waste was generated.

C. Do not transport disposal-bagged materials on open trucks. Double-bagged

material may be transported on open trucks if they are first loaded in sealed drums. Label drums with same warning labels as bags. Uncontaminated drums may be reused. Treat drums that have been contaminated as asbestos containing waste and dispose of in accordance with this specification.

D. Advise the sanitary landfill operator, at least twenty-four hours in advance of transport, of the quantity of material to be delivered.

E. At the burial site, sealed plastic bags may be carefully removed from the truck. If bags are broken or damaged in transit, leave in the truck and clean entire truck and contents.

F. Retain receipts from landfill for materials disposed of.

G. The Owner until all the properly executed manifests have been submitted to the Owner's Representative may withhold final payment.

-END OF SECTION-

Appendix A

Survey Sample Log

MATERIAL SAMPLING LOG

PROJECT NO.: ASF08-219-00

SAMPLED BY: Al Gurrola

CLIENT: Alcocer Garcia Associates

LICENSE NO.: 205447

Old Hidalgo County Administration Building, 1st, 2nd & 3rd Floors, 100 East Cano Boulevard, Edinburg, Texas

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/24/08	1	**Area behind teller's desk** (north 1st floor building)	A: 12"X12" Floor Tile (beige w-maroon, brown, blue specks B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	2	**Office area on NE side**	A: 12"X12" Floor Tile (beige w-maroon, brown, blue specks B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	3	**NE corner offices**	A: 12"X12" Floor Tile (beige w-maroon, brown, blue specks B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	4	**Kitchen**	A: 12"X12" Floor Tile, lt. brown w-brown specks B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	5	**Dining room**	A: 12"X12" Floor Tile, lt. brown w-brown specks B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	6	**2nd Story kitchen**	A: 12"X12" Floor Tile, lt. brown w-brown specks B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	7	**NE computer rooms (2)**	A: 12"X12" Floor Tile (gray) B: Mastic, black	M	ND	A: None Detected B: None Detected
9/24/08	8	**Kitchen, above ceiling**	A: 12"X12" Floor Tile (gray) B: Mastic, black	M	ND	A: None Detected B: None Detected
9/24/08	9	**Kitchen, above ceiling**	A: 12"X12" Floor Tile (gray) B: Mastic, black	M	ND	A: None Detected B: None Detected
9/24/08	10	**Center office room with round northwest corner**	A: 12"X12" Floor Tile (lt. tan) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	11	**Storage room** – west side of AC unit	A: 12"X12" Floor Tile (lt. tan) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	12	**Storage room** – west side of AC unit	A: 12"X12" Floor Tile (lt. tan) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	13	**Round desk top**	Counter Tops, tan	M	ND	None Detected
9/24/08	14	**Round desk top**	Counter Tops, tan	M	ND	None Detected
9/24/08	15	**Round desk top**	Counter Tops, tan	M	ND	None Detected

Raba-Kistner

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/24/08	16	**Throughout building –** north section of building	2'X2' Ceiling Tile, white/beige with cut and dot indentions	M	ND	None Detected
9/24/08	17	**Throughout building –** mid north section	2'X2' Ceiling Tile, white/beige with cut and dot indentions	M	ND	None Detected
9/24/08	18	**Throughout building –** North office area	2'X2' Ceiling Tile, white/beige with cut and dot indentions	M	ND	None Detected
9/24/08	19	**East column – east open area**	A: Wall Board, tan B: J-Compound/texture, white	M	ND	A: None Detected B: None Detected
9/24/08	20	**NE Office**	A: Wall Board, tan B: J-Compound/texture, white	M	ND	A: None Detected B: None Detected
9/24/08	21	**Office north of cty comrs meeting room**	A: Wall Board, tan B: J-Compound/texture, white	M	ND	A: None Detected B: None Detected
9/24/08	22	**Throughout office west and south areas.**	2'X4' Ceiling Tile, white/beige with cut and dot indentions	M	ND	None Detected
9/24/08	23	**Throughout office west and south areas.**	2'X4' Ceiling Tile, white/beige with cut and dot indentions	M	ND	None Detected
9/24/08	24	**Throughout office west and south areas.**	2'X4' Ceiling Tile, white/beige with cut and dot indentions	M	ND	None Detected
9/24/08	25	**1st Story middle area**	Ventilation Damper, black with white fibers	M	ND	None Detected
9/24/08	26	**2nd Story – above ceiling**	Ventilation Damper, black with white fibers	M	ND	None Detected
9/24/08	27	**3rd Story east side**	Ventilation Damper, black with white fibers	M	ND	None Detected
9/24/08	28	**West of mid information desk *ceiling***	A: 2" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/24/08	29	**West of mid information desk *ceiling***	A: 2" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/24/08	30	**West of mid information desk *ceiling***	A: 2" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/24/08	31	**North mid side – ceiling**	A: 6" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	None Detected
9/24/08	32	**North mid side – ceiling**	A: 6" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	None Detected
9/24/08	33	**North mid side – ceiling**	A: 6" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	None Detected
9/24/08	34	**Middle round columns**	Mud, white	M	ND	None Detected
9/24/08	35	**Middle round columns**	Mud, white	M	ND	None Detected
9/24/08	36	**Middle round columns**	Mud, white	M	ND	None Detected

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/24/08	37	**West tax records vault**	A: Wall Mud, white B: Wall texture, white	M	ND	A: None Detected **B: 3% Chrysotile**
9/24/08	38	**West tax records vault**	A: Wall Mud, white B: Wall texture, white	M	ND	A: None Detected B: None Detected
9/24/08	39	**West tax records vault**	A: Wall Mud, white B: Wall texture, white	M	ND	A: None Detected B: None Detected
9/24/08	40	**Kitchen adjacent to com. meeting room**	A: 12"X12" Floor Tile (lt. gray) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	41	**Kitchen adjacent to com. meeting room**	A: 12"X12" Floor Tile (lt. gray) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	42	**Kitchen adjacent to com. meeting room**	A: 12"X12" Floor Tile (lt. gray) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/24/08	43	**Kitchen adjacent to com. meeting room**	Sink Undercoat, light pink	M	ND	**15% Chrysotile**
9/24/08	44	**UBC office (2nd story)**	Sink Undercoat, light pink	M	ND	**15% Chrysotile**
9/24/08	45	**County judge office (2nd Story)**	Sink Undercoat, light pink	M	ND	**15% Chrysotile**
9/24/08	46	**Throughout north building**	A: 4" Cove base Mastic, yellow B: 4" Cove base Mastic, beiger	M	ND	None Detected
9/24/08	47	**Throughout north building**	A: 4" Cove base Mastic, yellow B: 4" Cove base Mastic, beiger	M	ND	None Detected
9/24/08	48	**Throughout north building**	A: 4" Cove base Mastic, yellow B: 4" Cove base Mastic, beiger	M	ND	None Detected
9/24/08	49	**County commissioners meeting room**	Spray-On Ceiling texture, white	M	ND	None Detected
9/24/08	50	**County commissioners meeting Room**	Spray-On Ceiling texture, white	M	ND	None Detected
9/24/08	51	**County commissioners meeting room**	Spray-On Ceiling texture, white	M	ND	None Detected
9/24/08	52	**NE office area – ceiling**	A: 2" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/24/08	53	**NE office area – ceiling**	A: 2" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/24/08	54	**NE office area – ceiling**	A: 2" Paper Wrap, canvas tape B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/24/08	55	**South section – middle storage office**	A: 12"X12" Floor Tile (pink) B: Mastic, yellow C: 9"X9" Floor tile, off-white D: Mastic, black	M	ND	A: None Detected B: None Detected C: **3% Chrysotile** **D: 5% Chrysotile**

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/24/08	56	**SE stair area**	A: 12"X12" Floor Tile (pink) B: Mastic, yellow C: 9"X9" Floor tile, off-white D: Mastic, black	M	ND	A: None Detected B: None Detected C: **3% Chrysotile** **D: 3% Chrysotile**
9/24/08	57	**SE Stairs storage**	A: 12"X12" Floor Tile (pink) B: Mastic, yellow C: 9"X9" Floor tile, off-white D: Mastic, black	M	ND	A: None Detected B: None Detected C: **3% Chrysotile** **D: 3% Chrysotile**
9/24/08	58	**South section – middle storage office**	A: Wall Board, tan B: Joint Compound, beige C: Texture, off-white	M	D	A: None Detected **B: 2% Chrysotile** C: None Detected
9/24/08	59	**SE Stairs hall**	A: Wall Board, tan B: Joint Compound, beige C: Texture, off-white	M	D	A: None Detected **B: 2% Chrysotile** C: None Detected
9/24/08	60	**East mens restroom**	A: Wall Board, tan B: Joint Compound, beige C: Texture, off-white	M	D	A: None Detected **B: 2% Chrysotile** C: None Detected
9/24/08	61	**South section – north side offices**	A: Wall Board, tan B: Joint Compound/texture, white	M	ND	A: None Detected B: None Detected
9/24/08	62	**South section** – north side offices	A: Wall Board, tan B: Joint Compound/texture, white	M	ND	A: None Detected B: None Detected
9/24/08	63	**South section** – north side offices	A: Wall Board, tan B: Joint Compound, beige C: Texture, off-white	M	ND	A: None Detected **B: 2% Chrysotile** C: None Detected
9/25/08	64	**North section** – middle office	Mastic, yellow	M	ND	None Detected
9/25/08	65	**North Section** – SECY.CDS	Mastic, yellow	M	ND	None Detected
9/25/08	66	**North section** – middle office	Mastic, yellow	M	ND	None Detected
9/25/08	67	**2nd Story walls** – north wall	A: Wall Board, white B: Joint Compound/texture, white	M	ND	A: None Detected B: None Detected
9/25/08	68	**2nd Story** – NE wall	A: Wall Board, white B: Joint Compound/texture, white	M	ND	A: None Detected B: None Detected
9/25/08	69	**2nd Story** – mid office north wall	A: Wall Board, white B: Joint Compound/texture, white	M	ND	A: None Detected B: None Detected
9/25/08	70	**2nd Story** – northeast ceiling area	A: 4" -6" Paper wrap, white/silver B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/25/08	71	**2nd Story** – northeast ceiling area	A: 4" -6" Paper wrap, white/silver B: Mastic, white	TSI	ND	A: None Detected B: None Detected

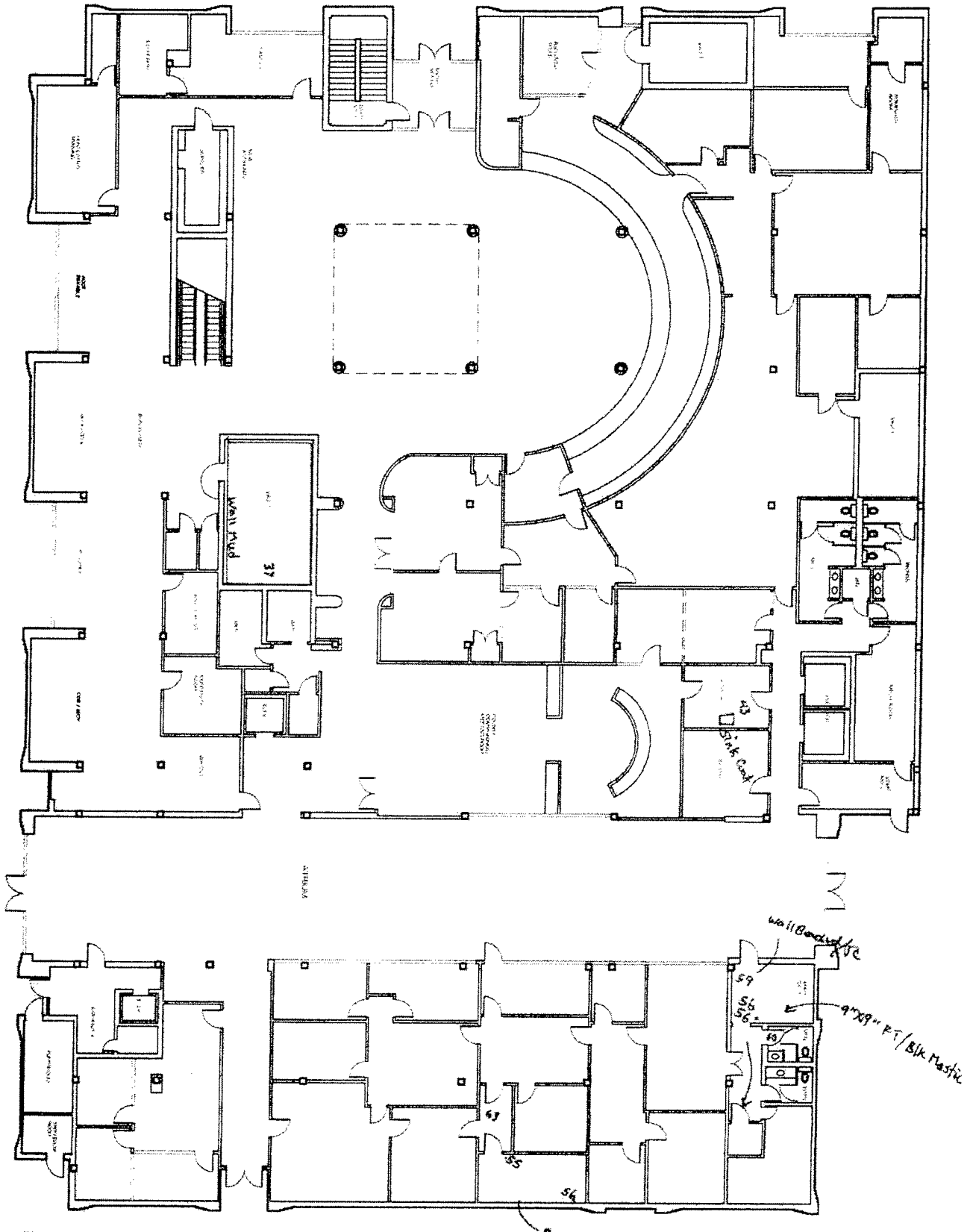
DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/25/08	72	**2nd Story** – northeast ceiling area	A: 4" -6" Paper wrap, white/silver B: Mastic, white	TSI	ND	A: None Detected B: None Detected
9/25/08	73	**2nd Story** – northeast ceiling area	A: 2" elbow paper wrap, white B: Mastic, white	TSI	ND	A: None Detected **B: 10% Chrysotile**
9/25/08	74	**2nd Story** – northeast ceiling area	A: 2" elbow paper wrap, white B: Mastic, white	TSI	ND	A: None Detected **B: 10% Chrysotile**
9/25/08	75	**2nd Story** – northeast ceiling area	A: 2" elbow paper wrap, white B: Mastic, white	TSI	ND	A: None Detected **B: 10% Chrysotile**
9/25/08	76	**2nd Story – kitchen adjacent to E. elevator**	Sink Undercoat, white	M	ND	None Detected
9/25/08	77	**2nd Story – kitchen adjacent to E. elevator**	Sink Undercoat, white	M	ND	None Detected
9/25/08	78	**3rd Story – kitchen**	Sink Undercoat, white	M	ND	None Detected
9/25/08	79	**2nd Story** – UC File storage rm, north side	A: 12"X12" Floor Tile (blue) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/25/08	80	**2nd Story** – UC File storage rm, north side	A: 12"X12" Floor Tile (blue) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/25/08	81	**2nd Story** – UC File storage rm, north side	A: 12"X12" Floor Tile (blue) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/25/08	82	**2nd Story** – UBC office	2'X2' Ceiling Tile, gray-rough texture	M	ND	None Detected
9/25/08	83	**2nd Story** – UBC office	2'X2' Ceiling Tile, gray-rough texture	M	ND	None Detected
9/25/08	84	**2nd Story** – UBC office	2'X2' Ceiling Tile, gray-rough texture	M	ND	None Detected
9/25/08	85	**2nd Story** – west office **bet. 2 secretaries offices**	A: 2" Paper wrap, canvas tape B: Mastic, off-white	TSI	ND	A: None Detected B: None Detected
9/25/08	86	**2nd Story** – west office **bet. 2 secretaries offices**	A: 2" Paper wrap, canvas tape B: Mastic, off-white	TSI	ND	A: None Detected B: None Detected
9/25/08	87	**2nd Story** – west office **bet. 2 secretaries offices**	A: 2" Paper wrap, canvas tape B: Mastic, off-white	TSI	ND	A: None Detected B: None Detected
9/25/08	88	**2nd Story, south bldg section** – throughout ceiling – AC duct	A: Mastic, black B: Silver Wrap	M	ND	A: **10% Chrysotile** B: None Detected
9/25/08	89	**2nd Story** – throughout ceiling – AC duct	A: Mastic, black B: Silver Wrap	M	ND	A: **10% Chrysotile** B: None Detected
9/25/08	90	**2nd Story** – throughout ceiling – AC duct	A: Mastic, black B: Silver wrap	M	ND	A: **10% Chrysotile** B: None Detected

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/25/08	91	**2nd Story** – columns throughout	A: Mud, white B: Toweled concrete, tan	T	ND	A: None Detected B: None Detected
9/25/08	92	**2nd Story** – columns throughout	A: Mud, white B: Toweled concrete, tan	M	ND	A: None Detected B: None Detected
9/25/08	93	**2nd Story** – columns throughout	A: Mud, white B: Toweled concrete, tan	M	ND	A: None Detected B: None Detected
9/25/08	94	**2nd Story** – SE corner room	A: Wall Board, white B: Joint Compound/texture, fine/white	M	MD	A: None Detected B: None Detected
9/25/08	95	**2nd Story** – SE hall	A: Wall Board, white B: Joint Compound/texture, fine/white	M	MD	A: None Detected B: None Detected
9/25/08	96	**2nd Story** – Stair wall	A: Wall Board, white B: Joint Compound/texture, fine/white	M	MD	A: None Detected B: None Detected
9/25/08	97	**2nd Story** – SE corner room	A: 4" cove base mastic, brown B: Mastic, tan	M	MD	None Detected
9/25/08	98	**2nd Story** – E office	A: 4" cove base mastic, brown B: Mastic, tan	M	MD	None Detected
9/25/08	99	**2nd Story** – south office renovation area	A: 4" cove base mastic, brown B: Mastic, tan	M	ND	None Detected
9/25/08	100	**2nd Story** – south office renovation area(#206)	A: 12"X12" Floor Tile (brown) B: Mastic, yellow C: Mastic, black	M	SD	A: None Detected B: None Detected **C: 5% Chrysotile**
9/25/08	101	**2nd Story** – – SE corner wall (#206)	A: 12"X12" Floor Tile (brown) B: Mastic, yellow C: Mastic, black	M	SD	A: None Detected B: None Detected **C: 8% Chrysotile**
9/25/08	102	**2nd Story** – SE office 206	A: 12"X12" Floor Tile (brown) B: Mastic, yellow C: Mastic, black	M	SD	A: None Detected B: None Detected **C: 8% Chrysotile**
9/25/08	103	**2nd Story** – – SE corner wall (#206)	A: Wall Board, tan B: Joint Compound, beige C: Texture, off-white	M	ND	A: None Detected **B: 2% Chrysotile** C: None Detected
9/25/08	104	**2nd Story** – SE office (#206)	A: Wall Board, tan B: Joint Compound, beige C: Texture, off-white	M	ND	A: None Detected **B: 2% Chrysotile** C: None Detected
9/25/08	105	**2nd Story** – – SE corner wall (#206)	A: Wall Board, tan B: Joint Compound, beige C: Texture, off-white	M	ND	A: None Detected **B: 3% Chrysotile** C: None Detected

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/25/08	106	**2nd Story** – SE office 202	A: 12"X12" Floor Tile (beige) B: Mastic, yellow/black C: 9" floor tile, off-white D: Mastic, black	M	SD	A: None Detected B: None Detected **C: 3% Chrysotile** **2% Tremolite** **D: 12% Chrysotile**
9/25/08	107	**2nd Story** – SE office 206	A: 12"X12" Floor Tile (beige) B: Mastic, yellow/black C: 9" floor tile, off-white D: Mastic, black	M	SD	A: None Detected B: None Detected **C: 3% Chrysotile** **2% Tremolite** **D: 10% Chrysotile**
9/25/08	108	**2nd Story** – SE office 206	A: 12"X12" Floor Tile (beige) B: Mastic, yellow/black C: 9" floor tile, off-white D: Mastic, black	M	SD	A: None Detected B: None Detected **C: 3% Chrysotile** **2% Tremolite** **D: 12% Chrysotile**
9/25/08	109	**2nd Story** – SW office rm.	4" cove base mastic, blk/brwn/tan	M	ND	None Detected
9/25/08	110	**2nd Story** – SW hall	4" cove base mastic, blk/brwn/tan	M	ND	None Detected
9/25/08	111	**2nd Story** – southeast mid office area	4" cove base mastic, blk/brwn/tan	M	ND	None Detected
9/25/08	112	**2nd Story** – SW office	A: Wall Board, tan B: J-Compound/Texture, white	M	ND	A: None Detected B: None Detected
9/25/08	113	**2nd Story** – SW hall	A: Wall Board, tan B: J-Compound/Texture, white	M	ND	A: None Detected B: None Detected
9/25/08	114	**2nd Story** – SW office mid open hall	A: Wall Board, tan B: J-Compound/Texture, white	M	ND	A: None Detected B: None Detected
9/25/08	115	**2nd Story** – mid hall area	A: 12"X12" Floor Tile (white) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/25/08	116	**3rd Story** – W office	A: 12"X12" Floor Tile (white) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/25/08	117	**3rd Story** – E. office	A: 12"X12" Floor Tile (white) B: Mastic, yellow	M	ND	A: None Detected B: None Detected
9/25/08	118	**3rd Story** – west office	A: Wall Board, beige B: J-Compound ,white C: Texture, white	M	ND	A: None Detected B: None Detected C: None Detected
9/25/08	119	**3rd Story** – mid office	A: Wall Board, beige B: J-Compound ,white C: Texture, white	M	ND	A: None Detected B: None Detected C: None Detected
9/25/08	120	**3rd Story** – E. office	A: Wall Board, beige B: J-Compound ,white C: Texture, white	M	ND	A: None Detected B: None Detected C: None Detected

DATE	SAMPLE NO.	SAMPLE LOCATION	MATERIAL SAMPLED	CATEGORY	CONDITION	RESULTS
9/25/08	121	**3rd Story** – E. hall area	A: 8" Paper Wrap, white/silver B: Tape Canvas, off-white C: Mastic, white	TSI	ND	A: None Detected B: None Detected C: None Detected
9/25/08	122	**3rd Story** – E. hall area	A: 8" Paper Wrap, white/silver B: Tape Canvas, off-white C: Mastic, white	TSI	ND	A: None Detected B: None Detected C: None Detected
9/25/08	123	**3rd Story** – E. hall area	A: 8" Paper Wrap, white/silver B: Tape Canvas, off-white C: Mastic, white	TSI	ND	A: None Detected B: None Detected C: None Detected
9/25/08	124	**3rd Story** – mechanical room	A: 4" -8" Paper Wrap, white/silver B: Tape Canvas, white C: Mastic, off-white	TSI	ND	A: None Detected B: None Detected C: None Detected
9/25/08	125	**3rd Story** – mechanical room	A: 4" -8" Paper Wrap, white/silver B: Tape Canvas, white C: Mastic, off-white	TSI	ND	A: None Detected B: None Detected C: None Detected
9/25/08	126	**3rd Story** – mechanical room	A: 4" -8" Paper Wrap, white/silver B: Tape Canvas, white C: Mastic, off-white	TSI	ND	A: None Detected B: None Detected C: None Detected
9/25/08	127	**2nd Story** – SE hall column	A: Wall Board, beige B: J-Compound ,white C: Texture, white	M	ND	A: None Detected B: None Detected C: None Detected
9/25/08	128	**2nd Story** – SW hall column	A: Wall Board, beige B: J-Compound ,white C: Texture, white	M	ND	A: None Detected B: None Detected C: None Detected
9/25/08	129	**1st Story** – Access Hall, north wall	A: Wall Board, beige B: J-Compound ,white C: Texture, white	M	ND	A: None Detected B: None Detected C: None Detected
9/25/08	130	**1st Story** – SW Mechanical Room	1st Story – SW Mechanical Room	M	D	None Detected
9/25/08	131	**1st Story** – SW Mechanical Room	1st Story – SW Mechanical Room	M	D	None Detected
9/25/08	132	**1st Story** – SW Mechanical Room	1st Story – SW Mechanical Room	M	D	None Detected

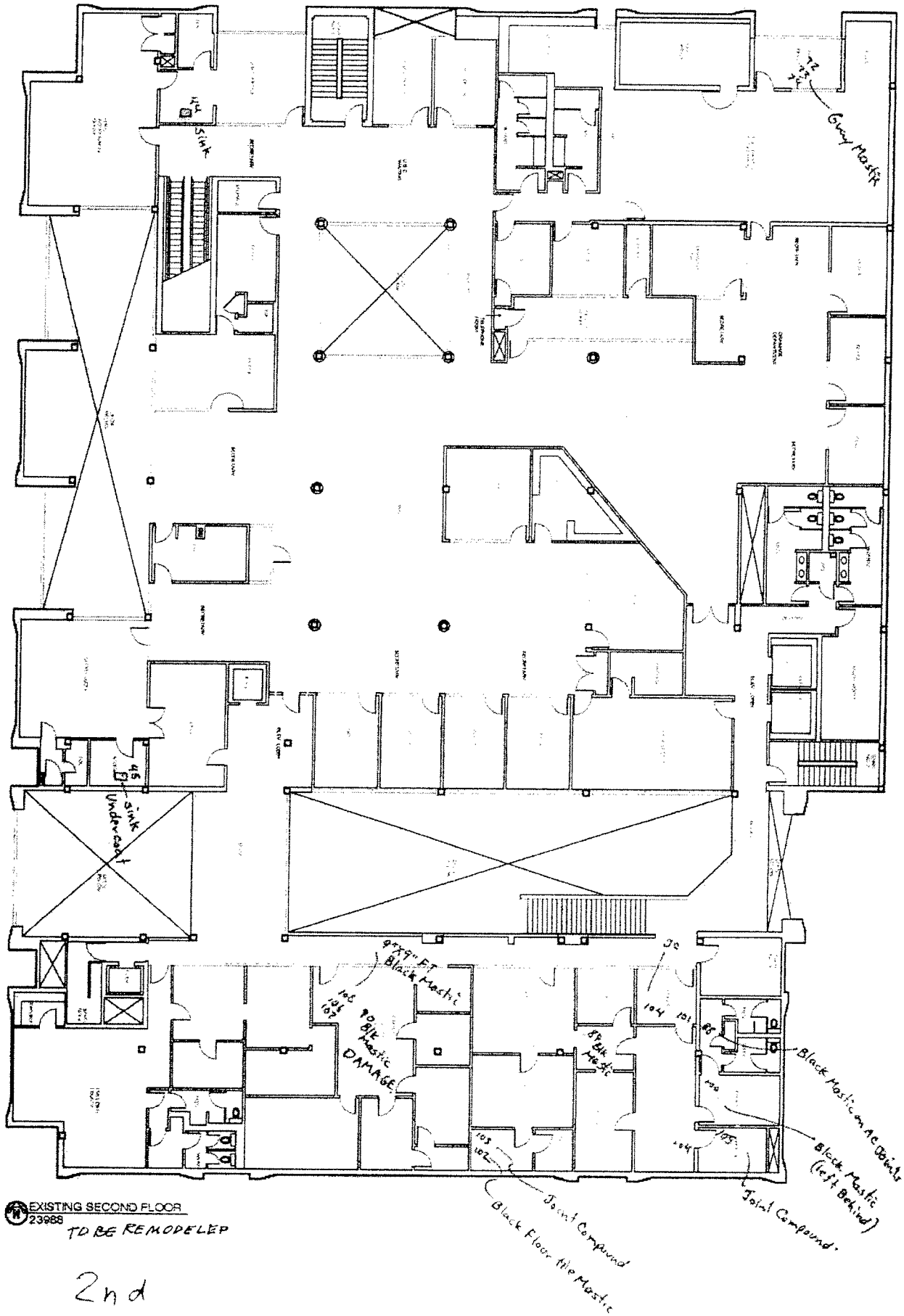
CATEGORY: S-Surface Sprayed-on or Troweled-on, T-Thermal, M-Miscellaneous (floor tile, ceiling tile, mastic, etc.)
CONDITION: ND-No Damage, MD-Minor Damage (small dents, tears), D-Damage (less than 3 sq. ft. of total area), SD-Significant Damage (greater than 3 sq. ft. of total area or heavy damage in local area)



EXISTING FIRST FLOOR
28605

TO BE REMODELED

1st



EXISTING SECOND FLOOR
23988
TO BE REMODELED

2nd

AUSTIN, TX
Raba-Kistner-Brytest
Consultants, Inc.
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