PAYNE ENVIRONMENTAL, LLC

Consulting Engineers and Scientists

CHURCH STREET SOUTH SPECIFICATIONS ABATEMENT OF ASBESTOS CEMENT PIPE

CHURCH STREET SOUTH
EW HAVEN, CONNECTICUT

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PAYNE PROJ. #: 24.100/001

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SECTION 01026 – UNIT PRICES

The following Unit Prices are to be used only for non-scope; unforeseen or concealed conditions from those identified by the Contract Documents, and are inclusive of all related costs, both direct and indirect, including overhead, profit, insurance, and bond. Unit prices are inclusive of all work necessary to access, handle and dispose of the materials. These Unit Prices may be used to calculate adds or deducts to the estimated quantities of regulated materials as defined in the Contract Documents. The estimated quantities noted in the Contract Documents are for the Contractors' general information only, and the Contractors shall familiarize themselves with the actual conditions of the project prior to submitting their bid, and shall include within their bid all costs associated with the removal and disposal of all hazardous materials as identified in the Contract Documents.

Item No.	Description	Unit Price to Add
1.	Excavate, remove, and dispose of one linear foot of 6" diameter exterior, underground asbestos transite pipe utilizing appropriate engineering controls.	_____
2.	Excavate, remove, and dispose of one linear foot of 8" diameter exterior, underground asbestos transite pipe utilizing appropriate engineering controls.	_____
3.	Excavate, remove, and dispose of one linear foot of 10" diameter exterior, underground asbestos transite pipe utilizing appropriate engineering controls.	_____
4.	Excavate, remove, and dispose of one linear foot of 15" diameter reinforced concrete pipe (RCP).	_____
5.	Excavation, loading, transportation, and disposal of one ton of asbestos-contaminated soil.	_____
6.	Excavation, stockpiling, loading, transportation, and offsite treatment of one ton of petroleum-contaminated soil.	_____
7.	Removal and disposal of one 30 yard waste container of friable asbestos-containing materials.	_____
8.	Removal and disposal of one 30 yard waste container of non-friable asbestos-containing materials.	_____

9. Removal and disposal of one 30 yard waste container of construction and demolition debris. _____

10. Removal and transport offsite to a metal recycling facility of one 30 yard container of scrap metal. _____

SECTION 02080 – ABATEMENT OF ASBESTOS CEMENT PIPE

PART 1: GENERAL

1.1 Scope of Work

A. This item shall govern the excavation, removal, handling, disturbance, cutting, and disposal of underground sanitary and storm sewer asbestos cement pipe (ACP), also known as transite pipe, located at Church Street South (CSS), New Haven, Connecticut. Buried ACP, which ranges in diameter from 6" – 10", typically contains 15 to 20 percent chrysotile asbestos, is considered to be asbestos-containing material (ACM). There is approximately ±2,000 LF of sanitary ACP and approximately ±1,000 LF of stormwater ACP.

The material is classified as non-friable unless broken, at which time its classification changes to friable ACM and it now becomes a regulated ACM (RACM). The removal and/or disturbance of RACM is governed by EPA's National Emissions Standards for Hazardous Air Pollutants (NESHAP) and the Occupational Safety and Health Administration (OSHA).

The work will also include the excavation, removal and onsite crushing of 15" diameter stormwater reinforced concrete pipe (RCP) to be utilized as backfill into excavation trenches upon removal of ACP and RCP. There is approximately ±1,800 LF of sanitary RCP. Onsite crushing of concrete shall be to a diameter of 3" minus.

The work specified herein shall be undertaken by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of these materials, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control of the job site at all times during the work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract.

B. The Contractor shall be licensed by the State of Connecticut in accordance with State of Connecticut Regulations, Sections 20-440-1 through 9 & 20-441. The asbestos supervisor and workers shall be licensed by the State of Connecticut in accordance with the State of Connecticut Regulations, Sections 20-437 and 20-438. Should any portion of the work be subcontracted, the subcontractor must also be licensed in accordance with these regulations. The licensing requirements are available from the Environmental Health Services Division, Department of Public Health, 410 Capitol Avenue, MS#51AIR, P.O. Box 340308, Hartford, CT 06134.

C. The New Haven Housing Authority (Owner) will retain the services of a Licensed Environmental Professional, Licensed Asbestos Project Designer, and Licensed Asbestos Project Monitor for protection of its interests and those using the building. Pre-abatement, during abatement and post-abatement visual inspections will be conducted.

D. Deviations from this Specification require the written approval of the Owner.

E. The Contractor is responsible for restoring all work areas and auxiliary areas utilized during abatement to conditions equal to or better than the original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor at no additional expense to the Owner.

F. The Contractor shall be responsible for the following general requirements:

1. Obtain all approvals and permits, and submit all notifications required.

2. Provide, erect, and maintain all shoring, barricades, and warning signs, as required.

3. Unless otherwise specified, all demolition debris resulting from the work shall become the property of the Contractor and shall be removed from the premises. Demolition debris, present as a result of past redevelopment, may include but not be limited to concrete, brick, wood, wire, etc.

4. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.

G. It shall be the responsibility of the Contractor to protect and preserve in operating condition, all active, buried utilities site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 Description

A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on asbestos and other hazardous materials), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.

B. The abatement work shall include the removal and disposal of all ACP described in Section 1.1.A above and on Drawing CSS-1. As observed by test pits conducted at the site, ACP sanitary sewer lines are typically 6”, 8” or 10” in diameter. ACP storm sewer lines are typically 6” in diameter. In addition, all reinforced concrete pipe (RCP) storm sewer lines are to be removed, stockpiled, and crushed onsite for reuse as backfill. The RCP is typically 15” in diameter.

1.3 Definitions

The following definition apply to this Work, as appropriate:

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

AHERA - Asbestos Hazard Emergency Response Act - U. S. EPA regulation 40 CFR Part 763 under Section 203 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2643. This rule mandates inspections, accreditations of persons involved with asbestos, and final air clearances following abatement in public and private schools, and public and commercial buildings.

Alternative Work Practice (AWP) - Deviation from Asbestos Standards (Sections 19a-332a-1 to 19a-332a-16 inclusive). Deviation requires a written approval letter from the State of Connecticut Department of Public Health and the Owner.

Asbestos - The term asbestos includes chrysotile, amosite, crocidolite, asbestiform tremolite, asbestos, anthophyllite asbestos, actinolite asbestos and any of these minerals that has been chemically treated and/or altered.

Asbestos Abatement - The removal, encapsulation, enclosure, renovation, repair, demolition, or other disturbance of asbestos-containing materials except activities which are related to the removal of asbestos cement pipe and are performed as defined in Section 25-32a of the Connecticut General Statutes.

Asbestos-Containing Material (ACM) - Any material containing more than one percent asbestos.

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

Asbestos Control Area - An area where asbestos abatement operations are performed which is isolated by physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris. Two examples of an Asbestos Control Area are a "full containment" and a "glove-bag."

Asbestos Fiber - A particulate form of asbestos, tremolite, anthophyllite, actinolite, or a combination of these minerals having a length of five micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.

Authorized Asbestos Disposal Facility - A location approved by the Connecticut Department of Environmental Protection for handling and disposing of asbestos waste or by an equivalent regulatory agency if the material is disposed of outside the State of Connecticut.

Category I Non-Friable Asbestos-Containing Material (AC) - Asbestos-containing packings, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II Non-Friable ACM - Any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Competent Person - Individual capable of identifying existing asbestos, tremolite, anthophyllite, or actinolite hazards and corrective measures to eliminate them, as specified in 29 CFR 1926.32. The duties of the Competent Person include at least the following: establishing the pressure differential, ensuring its integrity, and controlling entry to and exit from the enclosure; supervising any employee exposure monitoring required by the standard; ensuring that all employees working within such an enclosure wear the appropriate personal protective equipment, are trained in the use of appropriate methods of exposure control, and use the hygiene facilities and decontamination procedures specified; and ensuring that engineering controls in use are in proper operating condition and are functioning properly.

Decontamination Enclosure System - A series of rooms separated from the Work Area and from each other by air locks, for the decontamination of workers and equipment.

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

DEEP - The Connecticut Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106.

DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, MS#51AIR, P.O. Box 340308, Hartford, CT 06134.

Encapsulant - Specific materials in various forms used to chemically entrap asbestos fibers in various configurations to prevent these fibers from becoming airborne. There are four types of encapsulant as follows:

a) Removal Encapsulant (can be used as a wetting agent).

b) Bridging Encapsulant (used to provide a tough durable surface coating to asbestos-containing material).

c) Penetrating Encapsulant (used to penetrate the asbestos containing material down to substrate, encapsulating all asbestos fibers).

d) Lock-down Encapsulant (used to seal off "lock-down" minute asbestos fibers left on surfaces from which asbestos containing materials have been removed).

Equipment Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled transfer of materials and equipment into or out of the Work Area, typically consisting of a Washroom and a Holding Area.

Exposed - Open to view.

Fixed Object - A piece of equipment or furniture in the Work Area which cannot be removed from the Work Area, as determined by the Owner.

Friable Asbestos Material - Material containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, Section 1, Polarized Light Microscopy, that when dry can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Glove-Bag - A sealed compartment with attached inner gloves used for the handling of asbestos-containing materials. Properly installed and used glove bags provide a small Work Area enclosure typically used for small scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rule on occupational exposure to asbestos (29 CFR 1926.1101).

Glove-Bag Technique - A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contaminated work area. The glove-bag assembly is a manufactured or fabricated device consisting of a glove-bag (typically constructed of six (6) mil polyethylene or polyvinyl chloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process.

High-efficiency particulate air (HEPA) A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles 0.3 microns in diameter.

Lock-down - The procedure of spraying polyethylene sheeting and building materials with an encapsulant type sealant to seal in non-visible asbestos-containing residue.

Movable Object - A piece of equipment or furniture in the Work Area which can be removed from the Work Area, as determined by the Owner.

Non-Friable Asbestos-containing Material - Material containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy, that when dry cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Permissible Exposure Limit (PEL) - An airborne concentration of asbestos, tremolite, anthophyllite, actinolite or a combination of these minerals of 0.1 fibers per cubic centimeter (f/cc) of air calculated as an eight (8) hour time-weighted average, as determined by Phase Contrast Microscopy.

Personal Monitoring - Air sampling within the breathing zone of an employee.

Pre-Clean - The process of cleaning an area before asbestos abatement activities begin to ensure all dust and debris in the area considered to be asbestos-containing are properly contained and disposed of. This increases the likelihood the area will pass aggressive air sampling clearance requirements after asbestos-containing materials have been removed.

Regulated Area - Area established by the employer to demarcate areas where airborne concentrations of asbestos, tremolite, anthophyllite, actinolite or a combination of these minerals exceed, or can reasonably be expected to exceed, the Permissible Exposure Limit.

Regulated Asbestos-Containing Material (RACM) - (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting members are wrecked or taken out are demolitions.

Unfinished Space - Space used for storage, utilities, or work area where appearance is not a factor. Examples of an unfinished space include crawlspace; pipe tunnel and similar spaces.

Visible Emissions - Any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

Visible Residue - Any debris or dust on surfaces in areas within the Work Area where asbestos abatement has taken place, and which is visible to the unaided eye. All visible residue is assumed to contain asbestos.

Waste Generator - Any owner or operator of a source whose act or process produces asbestos-containing waste material.

Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track, and substantiate the disposition of asbestos-containing waste material.

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

Work Area - Specific area or location where the actual work is being performed or such other area of a facility which the Commissioner determines may be hazardous to public health as a result of such asbestos abatement.

Worker Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled passage of workers and authorized visitors, typically consisting of a Clean Room, a Shower Room, and an Equipment Room.

1.4 References

The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.

1. Occupational Safety and Health Administration (OSHA)

   29 CFR 1910.1001 - Asbestos, Tremolite, Anthophyllite, and Actinolite.

   29 CFR 1910.134 - Respiratory Protection.

   29 CFR 1926.21 - Safety Training and Education

   29 CFR 1926.32 - Definitions

   29 CFR 1926.51 - Sanitation

   29 CFR 1910.134 - Gases, Vapors, Fumes, Dusts, and Mists

   29 CFR 1926.59 - Hazard Communication.

   29 CFR 1926.200 - Accident Prevention Signs and Tags.

   29 CFR 1926.417 - Lockout and Tagging of Circuits.

   29 CFR 1926.1101 - Asbestos

2. Environmental Protection Agency (EPA)

   40 CFR 61, Subpart M - National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule.

   40 CFR 763, Subpart E - Asbestos Hazard Emergency Response Act (AHERA).

40 CFR 763, Subpart G - Worker Protection Rule.

3. State of Connecticut, Department of Public Health Regulations (DPH)

   Section 19a-332a-1 through 19a-332a-16 - Standards for Asbestos Abatement.

   Section 20-440-1 through 20-440-9 and 20-441 Licensure and Training.

4. American National Standards Institute (ANSI)

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

   ANSI Z88.2 - Respiratory Protection.

5. American Society of Testing and Materials (ASTM)

   ASTM E 84 - Surface Burning Characteristics of Building Materials.

   ASTM E 96 - Water Vapor Transmission of Materials.

   ASTM E 119 - Fire Tests of Building and Construction Materials.

   ASTM E 736 - Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members.

   ASTM E 1368 - Visual Inspection of Asbestos Abatement Projects.

   ASTM E 1494 - Encapsulants for Spray- or Trowel-Applied Friable Asbestos-Containing Building Materials.

6. Underwriters Laboratories, Inc. (UL)

   UL 586 - High-Efficiency, Particulate, Air Filter Units.

1.5 Submittals

A. The Contractor shall submit for approval an Asbestos Removal Work Plan in accordance with these specifications and Federal and State regulations, standards, and general guidelines.

B. Manufacturer's Catalog Data:

   MSDS for All Materials Delivered to the Site

C. Statements:

   Connecticut Notifications
   Worker Medical Certification
   Worker Training Certification
   Worker Respirator Fit Testing
   Worker Asbestos Licenses
   OSHA Laboratory Certification

Landfill Approval
Safety Plan
Respirator Protection Plan
Initial Exposure Assessment

1. Submit notification to the following agencies at least ten (10) working days before work commences on the project:

   Department of Public Health
   Environmental Health Section
   450 Capitol Avenue, MS#51AIR
   P.O. Box 340308
   Hartford, CT 06134-0308

2. Copies of all required notifications, approvals and permits for the removal, disposal, and transport asbestos-containing or contaminated materials.

3. Documentation from a physician certifying that all employees who may be exposed to airborne asbestos in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.1101. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special workplace conditions such as high temperature, high humidity, and chemical contaminants which to which he/she may be exposed.

4. Documentation certifying that all employees have received training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.

5. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.1101.

6. Qualifications of the person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. Include the name and address of the testing laboratory proposed to perform air sample analysis on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.

7. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. Include any site specific information to address health and safety procedures unique to this project.

8. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity

where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of the continued effectiveness of the program; and other elements included in the standard.

9. Demonstrate that employee's exposure will be below the PEL's. For Class I asbestos work until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PEL's, or otherwise makes a negative exposure assessment, the employer shall presume that employees are exposed in excess of the TWA and excursion limit.

D. Records:

Jobsite Sign-in/Sign-out Logs
Work area Sign-in/Sign-out Logs
Personal Air Sampling Results
Waste Shipment Records

1.6 Personnel Protection

A. Instruct workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project.

B. Ensure workers are fully protected with respirators and protective clothing during work in the Control Area, where there is the possibility of disturbing asbestos OR asbestos-contaminated materials.

C. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.1101. Provide appropriate respiratory protection for each worker and ensure usage during potential asbestos exposure. As a minimum, workers shall be equipped with powered air-purifying respirators (PAPR) with HEPA filters.

D. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements for respirators in use.

E. Provide and require all workers to wear protective clothing in Work Areas where asbestos fiber concentrations exceed permissible limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings.

F. Provide all authorized persons entering contaminated areas with proper respirators and protective clothing.

G. Ensure that all workers and authorized persons enter and leave the Asbestos Control Area through the Worker Decontamination Enclosure System.

H. Ensure all contaminated protective clothing remains in the Equipment Room for reuse or disposal of as contaminated waste.

I. Ensure workers do not eat, drink, smoke or chew gum or tobacco while in the Asbestos Work Area.

PART 2: PRODUCTS

2.1 MATERIALS

A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints, shall be delivered to job site with factory label indicating four (4) or six (6) mil.

B. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Disposable bags shall be opaque.

C. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.

D. Surfactant (wetting agent) shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water or as directed by the manufacturer.

E. Containers must be impermeable and shall be both air and watertight. Containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101 and EPA 40 CFR Part 61.152 as appropriate.

F. Labels and signs shall conform to OSHA Standard 29 CFR 1926.1101.

2.2 TOOLS AND EQUIPMENT

A. Tools and equipment shall be suitable for hazardous materials removal.

B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.

C. Electrical equipment, protective devices and power cables shall conform to all applicable codes.

D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each eight workers.

E. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Asbestos Control Area.

F. Pressure differential monitoring equipment shall be provided to ensure exhaust air filtration devices provide the minimum pressure differential required between the Work Area and occupied areas of the facility.

G. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Asbestos Control Area.

H. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.

PART 3 EXECUTION

3.1 Delivery, Storage and Handling

3.1.1 Abatement Requirements:

- Prior to beginning work and as applicable, the Owner, Design Consultant, and Contractor shall conduct a pre-abatement meeting, perform a visual survey of each Work Area, and list all pre-existing damage. The Contractor shall submit to the Owner a list which shall include all damaged areas not scheduled to be repaired under this Contract and include photographs, video tapes as applicable.

- The Contractor shall remove, seal, transport and dispose of all ACP and any impacted ACM in compliance with all current Federal, State, and local regulations, laws, ordinances, rules, standards, and regulatory agency requirements. Asbestos disturbance and/or removal activities shall be conducted by properly trained, accredited, and licensed personnel using proper personal protective equipment.

- The Contractor shall notify Owner's Representative at least 72 hours in advance prior to beginning removal and/or disturbance of ACP.

- Time is of the essence in removing ACM from the project area. All work must be completed within the time period specified.

- All required notifications to State regulatory agencies shall be made by the Contractor with copies provided to Owner's Representative, including but not limited to the CTDPH Demolition/Renovation Notification Form. If 260 linear feet or greater of ACP is crushed, crumbled, or pulverized, then the project is subject to NESHAP regulations and a Demolition/Renovation Notification Form shall be sent to CTDPH by the Contractor. This form shall be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

- The Contractor shall have an on-site supervisor, who is an OSHA Competent Person, present on the job site at all times when the work is in progress. This supervisor shall be thoroughly familiar and experienced with asbestos disturbance and other related work, and shall be familiar with and shall enforce the use of all safety procedures and equipment. The supervisor shall be knowledgeable of all applicable EPA, OSHA, NIOSH and CTDPH requirements and guidelines.

- Prior to commencing any preparation of the work areas for asbestos disturbance, the Contractor shall post all required documents, warning signs, and as necessary, erect physical barriers to secure the work area.

- The Contractor has sole and primary responsibility for the "means and/or methods" of the work, for the inspection of the work at all stages, and for the supervision of the performance of the work.

- The Contractor shall be responsible for site safety and for taking all necessary precautions to protect the Contractor's workers, City of Dallas personnel, and the public from asbestos exposure and/or injury. The Contractor shall be responsible for maintaining the integrity of the work area.

- The Contractor shall confine operations at the site to the area requiring disturbance of ACP and the general site area associated with the proximity of the project. Portions of the site beyond areas in which the indicated work is required, are not to be disturbed. The Contractor shall not unreasonably encumber the site with materials or equipment. If ACWM is required to be stored overnight, it shall be properly labeled, secured, and containerized to preclude unauthorized disturbance of the waste materials.

- The Contractor shall be responsible for the transport and disposal of ACP to a duly licensed landfill facility permitted to accept asbestos waste. The Contractor shall be responsible for obtaining and coordinating waste disposal authorization from a licensed landfill. Waste manifests shall be used to transport the ACP from the project site to the final landfill disposal site. The Contractor shall sign manifests as the generator of the ACP and shall provide copies to the Owner's Representative for final payment.

3.1.2 Site Security:

- The Contractor shall demarcate the area of ACP disturbance ("regulated area") with barrier tape and warning signs, as per OSHA regulation 29 CFR 1926.1101. Access to the regulated area shall be limited only to authorized personnel. Authorized personnel shall have asbestos awareness training, respiratory training, etc., including City of Dallas personnel.

- Entry into the work area by unauthorized individuals shall be reported immediately to the Owner's Representatives by the Contractor.

- A logbook shall be maintained immediately outside the regulated area. Anyone who enters the regulated area must record their name, affiliation, time in, and time out for each entry.

3.1.3 Personal Protective Equipment:

3.1.3.1 General:

All work which will or may disturb ACM shall be accomplished utilizing, as a minimum, disposal suits with protective head cover, gloves, boots, eye protection, proper respiratory protection, decontamination by HEPA vacuuming and/or wet methods, and wet wiping all equipment. The Contractor shall provide hard hats and/or other protection as required for job conditions or by applicable safety regulations. Disposal suits consisting of material impenetrable by asbestos fibers shall be provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing. Workers shall be provided protective clothing from the time of first disturbance of ACM until final cleanup is completed.

3.1.3.2 Respiratory Protection:

The Contractor shall use removal techniques, methods and equipment that will not permit the fiber count to exceed the OSHA Permissible Exposure Level (PEL) of 0.1 fibers per cubic centimeter (f/cc) of air as detected by personal air sampling methods. Any remedial measures taken by the Contractor to meet this requirement shall be at the Contractor's expense.

- The Contractor's Competent Person shall ensure use of the appropriate respiratory protection for the work being performed. For minimum legal respiratory requirements, see

OSHA Standards 29 CFR 1910.134, 29 CFR 1910.1001, and 29 CFR 1926.1101. All respiratory equipment, such as respirators, filters, etc., shall be certified by NIOSH for use in asbestos contaminated atmospheres.

- The Contractor's Competent Person shall perform an Initial and/or Negative Exposure Assessment, which shall be performed on employees who have been trained in compliance with the OSHA regulations. Employee's exposures shall be collected using objective data that is to demonstrate whether the materials specified for removal can release airborne fibers in concentration levels exceeding 0.1 f/cc during an 8-hour time weighted average (TWA) and the excursion limit of 1.0 f/cc. For the purpose of the assessment, the work conditions shall be those having the greatest potential for releasing asbestos fibers. Removal methods using conventional hand tools shall be performed in an area that requires a minimum of a 7-hour work shift with employees performing functions normally required for a total project. Removal, for the purposes of the assessment, shall be performed with methods most likely to release fibers and that do not render the ACM friable. Properly trained employees shall wear proper protective clothing and respirators during the assessment. Initial and/or Negative Exposure Assessments shall be performed in accordance with OSHA Standard 29 CFR 1926.1101.

- The Contractor shall begin ACP removal operations (i.e., dismantling, breaking, sawing, or cutting the pipe) in powered air purifying respirators (PAPRs) equipped with appropriate respiratory protection. Any changes (downgrade or upgrade) in respiratory protection shall be based upon an 8-hour TWA of fiber concentrations in the regulated area. For personal samples, the 8-hour TWA's shall be calculated daily by the Contractor's OSHA monitoring firm. The highest calculated 8-hour TWA shall be used to determine the type of respirator to be worn. The type of respirators worn shall be selected in accordance with 29 CFR 1926.1101 (h)(3).

  The Contractor may request a respiratory protection downgrade, approved by the Owner's Representative when all regulations and pertinent sections of this specification for respiratory protection are met.

- Workers shall be provided with personally issued, individually identified respirators.

- No one wearing a beard shall be permitted to wear a respirator.

3.1.4 Air Monitoring:

- Personal Air Monitoring: The Contractor shall provide personal air sampling as required by OSHA regulations. The OSHA TWA PEL for asbestos (0.1 f/cc) shall not be exceeded. OSHA monitoring results shall be posted at the project site and made available to all affected Contractor personnel on a daily basis.

- The Contractor shall provide, as a minimum, personal air monitoring on each worker who is cutting, (wet) sawing, or breaking ACP.

- Area Air Monitoring: At any time that visible airborne fibers are generated or that wet work procedures are not used, all work shall immediately cease until air monitoring by a CTDPH licensed asbestos project monitor has started. The Contractor's on-site Competent Person shall be responsible for making this determination; however, periodic, random site visits by the Owner's representative will field-verify the objectivity of the Competent Person in these matters. Once initiated, the sampling and frequency of the

area air monitoring shall be dependent upon the specific work practices being used by the workers at that time. However, the area air monitoring shall include, as a minimum, samples collected inside the regulated area, and upwind and downwind of the regulated area. to include sampling protocols. A copy shall be provided to the Owner's Representative.

- Area air monitoring shall be conducted in accordance with applicable Federal, State, and local requirements. The cost of area air monitoring due to failure to use adequate wet work procedures shall be borne by the Contractor. Copies of all results shall be provided to the Owner's Representative.

- Area air sampling shall be mandatory in high density areas such as schools, residential areas, and certain other locations as determined by the Owner's Representative and dictated by the bid documents/plans.

3.1.5 Employee Training:

- Training shall be provided by the Contractor to all employees or agents who may be required to disturb ACM for ACP handling and auxiliary purposes, and to all supervisory personnel who may be involved in the planning, execution, or inspection of such projects. The training shall be in accordance with OSHA Standard 29 CFR 192.1101 for "Class II asbestos work".

- At a minimum, Contractor's employees who will be potentially exposed to asbestos shall have completed within the last 12 months, an 8-hour Asbestos Awareness training course taught by a CTDPH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos and work practices related to the handling of ACP.

- The Contractor's Competent Person shall have completed within the last 12 months, a 40-hour Asbestos Contractor Supervisor training course taught by a CTDPH licensed Asbestos Training Provider. The training course shall cover topics including, but not be limited to: the health effects of asbestos, employee personal protective equipment, medical monitoring requirements for workers, air monitoring procedures and requirements for workers, work practices for asbestos abatement, personal hygiene procedures, special safety hazards that may be encountered, and other topics as required.

3.1.6 ACP Handling:

3.1.6.1 General:

The Contractor shall properly remove, handle, transport and dispose all ACP specified in the bid documents/plans for this project. All work involving ACP and other ACM products shall be addressed in the Health and Safety Plan documents submitted to the Owner's Representative. The Contractor shall hire a CTDPH licensed Asbestos Consultant to provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety Plan documents are to include provisions for the discipline of any worker failing to use wet work procedures or failing to use designated personnel protective equipment.

The Contractor shall remove ACM with wet methods or by other controlled techniques approved by the CTDPH, EPA and OSHA, and in accordance with these specifications and

the Contractor-provided Health and Safety Plan. Alternative removal methods will be considered at the time of the Contractor's submittals. The Contractor shall take special care to prevent damage to structures and materials not requiring demolition to access the ACM.

The Contractor shall limit work to the area indicated. Access to the work area shall be controlled by the Contractor. All electrical equipment, etc., shall have ground limit circuit interrupter (GFCI) protection. The Contractor shall properly demarcate, barricade, and contain the work and/or regulated areas.

The ACP work consists of providing GFCI protection, using approved equipment with engineering controls, sufficiently wetting the ACM using a surfactant or lock-down encapsulant, removing the ACM, HEPA vacuuming the work area, wet wiping the work area, double-bagging/double-wrapping the waste, and removing carefully as indicated herein and in accordance with the Contractor-provided Health and Safety Plan.

3.1.6.2. Equipment:

Equipment used to cut, break, or otherwise disturb ACP and associated ACM may include, but are not limited to: wet-cutting saws, saws equipped with point of cut ventilator (saw equipped with a water mister) or enclosures with HEPA filtered exhaust air, snap cutters, manual field lathes, and pressure and non-pressure tapping devices.

Equipment used to control visible emissions of fibers, contain the work area, or facilitate the clean-up of debris may include, but are not limited to: airless spray equipment, pump-up sprayers, surfactant, lock-down encapsulant, HEPA vacuums, brushes, brooms, shovels, disposable rags, polyethylene sheeting of 6-mil thickness, moisture resistant duct tape, asbestos warning signs, notices, and barrier tape. Alternative dismantling equipment may be substituted for the materials indicated herein, but must be approved by the Owner's Representative.

3.1.6.3 Prohibited Work Practices and Engineering Controls:

The following work practices and engineering controls shall not be used for work related to asbestos or for work that disturbs ACM, regardless of asbestos exposure or the results of Initial Exposure Assessments:

- High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air
- Other high-speed abrasive tools, such as disk sanders
- Carbide-tipped cutting blades
- Electrical drills, chisels, and rasps used to make field connections in ACP
- Shell cutters used to cut entry holes in ACP
- A hammer and chisel used to remove couplings or collars on ACP
- Compressed air used to remove asbestos or ACM, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud generated by the compressed air

- Dry sweeping, dry shoveling, or other dry clean-up of dust and debris containing ACM.
- Employee rotation as a means of reducing employee exposure to asbestos

3.1.6.4 General Removal Work Practices:

ACP has been identified as a non-friable ACM with the potential to become friable ACM. The material is classified as non-friable unless broken, at which time its classification changes to friable. NESHAP guidelines apply to projects when at least 260 linear feet or 35 cubic feet or 160 square feet of ACP becomes or will become "regulated asbestos containing material" or RACM. Therefore, if at least 260 linear feet of ACP is crushed, crumbled, or pulverized, then the project is subject to NESHAP. During the disjoining operation of ACP removal, only the portion that has become RACM shall be counted toward the threshold amount, if the debris caused by the disjoining operation is cleaned up so that it does not contaminate a greater length of pipe. If the generated ACP debris is not properly cleaned up, however, then the ACP shall be considered contaminated and the whole length is treated as ACM. If the scope of this project involves the threshold amount (260 linear feet or greater), then a Demolition/Renovation Notification Form shall be sent to CTDPH by the Contractor. This form shall be post-marked no later than 11 working days prior to the start of any asbestos disturbance.

All ACP projects require that NESHAP and OSHA guidelines be met and/or exceeded in areas where ACP is to be disturbed. Therefore, all ACP disturbances require a third party CTDPH licensed Asbestos Consultant and Asbestos Contractor on-site during ACP disturbance. An asbestos abatement work plan shall be provided to the Owner's Representative by both the licensed Asbestos Consultant and the Asbestos Contractor. Upon completion of the ACP project, an air monitoring abatement report shall be prepared by the Contractor's Asbestos Consultant. Copies of the final abatement report shall be submitted to the Owner's Representative by the Contractor's consultant. During any ACM disturbance, OSHA requires that, regardless of amount, the asbestos worker(s) be properly protected during potential asbestos exposure, 29 CFR, Subpart *Z,* 1910.1101.

The Contractor shall be responsible for developing and implementing an asbestos removal work plan in accordance with NESHAP, OSHA, and State requirements. As such, Contractors submitting bids for the project shall have a CTDPH licensed Asbestos Consultant provide detailed asbestos specific safety and work plans for ensuring worker and community protection. Health and Safety Plans for working with ACM shall address the requirements of these specifications.

3.1.6.5 A sufficient supply of disposable rags for work area decontamination shall be available.

3.1.6.6 Disposal bags for RACM shall be of true 6-mil polyethylene, pre-printed with labels as required by EPA regulation 40 CFR 61.152 (b)(i)(iv) or OSHA requirement 29 CFR 1926.1101 (k)(8).

3.1.6.7 Stick-on labels identifying the Generator's name and address, and the project site location shall be applied to any asbestos waste bags that contain RACM, as per EPA or OSHA and Department of Transportation HM 181 requirements.

3.1.6.8 Work Area Preparation:

The Contractor shall post warning signs and barrier tape meeting the specification of OSHA 29 CFR 1910.1001 and 40 CFR 61 at any location and approaches to a location where airborne concentrations of asbestos may exceed the PEL. Signs shall be posted at a distance sufficiently far from the work area to permit an employee to read the sign and to take the necessary protective measures to avoid exposure. The Contractor shall maintain constant security against unauthorized entry past warning signs and barrier tape. Signs shall be post in both English and Spanish at the site.

3.1.6.9 Personnel Exit Procedures

- Before leaving the work area, all personnel shall remove gross contamination from the outside of respirators and protective clothing by brushing and/or wet wiping procedures. Small HEPA vacuums with brush attachments may be utilized for this purpose. Adequate washing facilities shall be provided and utilized on-site.

- Upon completion of the work, contaminated gloves shall be disposed as ACWM. Disposable cloth gloves may be substituted for leather gloves, at the Contractor's discretion. Rubber boots shall be decontaminated at the completion of the project.

3.1.6.10 Specific Removal Work Practice Requirements

- The Contractor has sole and primary responsibility for the "means and/or methods" of the work, for inspection of the work at all stages, and for supervision of the performance of the work.

- The Contractor shall isolate the regulated area with barrier tape and asbestos warning signs.

- The Contractor shall lay and secure 6-mil polyethylene sheeting on the ground on both sides of the ACP for the length of the work area.

- Working within the regulated area and using wet removal methods, the Contractor shall thoroughly soak each section of ACP to be disturbed, prior to any removal activity, with a surfactant or lock-down encapsulant. The Contractor shall use equipment capable of producing a "mist" application to reduce the potential for release of fibers. The Contractor shall take care to use as much encapsulant or surfactant as needed to lockdown possible fallout debris from edges and joints during removal. Continuous wetting of the materials throughout the entire removal process shall be provided. The Contractor shall take care to limit the breakage of ACM and to remove these materials as intact as possible.

- Any ACP debris on adjacent surfaces shall be removed. The Contractor shall promptly clean up asbestos wastes and debris following ACP disturbance. All visible accumulations of ACM and asbestos contaminated debris shall be removed and containerized by hand. Asbestos debris mixed with soil shall be picked up with shovels. The contaminated soil shall be containerized as a regulated ACWM. Clean-up activities may also involve vacuum cleaners equipped with HEPA filtration or wet-wiping surfaces with disposable rags. Contaminated rags shall be containerized as regulated ACWM.

- After disturbance and clean-up activities but prior to removal of the ACP from the regulated area, the Contractor shall encapsulate damaged and exposed areas and ends of the ACP with a lock-down encapsulant.

- The Contractor shall then remove the Category II non-friable ACM "that is not in poor condition and is not friable," as defined in NESHAP regulations. The Contractor shall remove all ACP "intact" and in whole complete sections by carefully lifting the ACP to the disposal container using approved equipment. The Category II non-friable ACP shall not be made "friable" (crumbled, pulverized, or reduced to a powder). The Contractor shall not drop, break and/or otherwise make the ACP susceptible to releasing asbestos fibers. If these procedures are followed and debris is cleaned up properly, then the Category II non-friable ACP shall be disposed as non-regulated ACM.

- Pieces of ACP debris shall be managed as RACM waste. The debris shall be placed in two 6-mil asbestos bags or double wrapped, with proper labeling.

3.1.6.11 Verification of Removal & Clean-up Procedures

The Owner's representative and Contractor's on-site Competent Person shall inspect the work area and ensure that all surfaces are free of ACP dust and debris.

3.1.6.12 Disposal Procedures

- If a dumpster/trailer is used for temporary storage, it shall be secured and closed at all times except when loading. It shall be properly marked and critical barrier tape shall be in place.

- ACP debris and asbestos-contaminated items shall be properly double bagged; labeled; loaded in a fully enclosed, lined, locked, placard-identified transport container; transported; and disposed in compliance with all regulatory requirements as RACM.

- After being removed from the regulated area, Category II non-friable ACP shall be transferred to a polyethylene-lined container. The Contractor shall remove all containers as soon as practical, but no later than the end of the work shift.

- When a dumpster/trailer is full, it shall be hauled away to an EPA-approved landfill for proper disposal. The Contractor may dispose of Category II non-friable ACP waste material as non-regulated waste in a municipal solid waste landfill, as defined in the NESHAP and TCEQ Rule (Type I Landfill). Prior to disposal, written approval to transport and to accept the Category II non-friable material shall be obtained from a pre-approved transporter and landfill, and shall be submitted to the Owner's Representative.

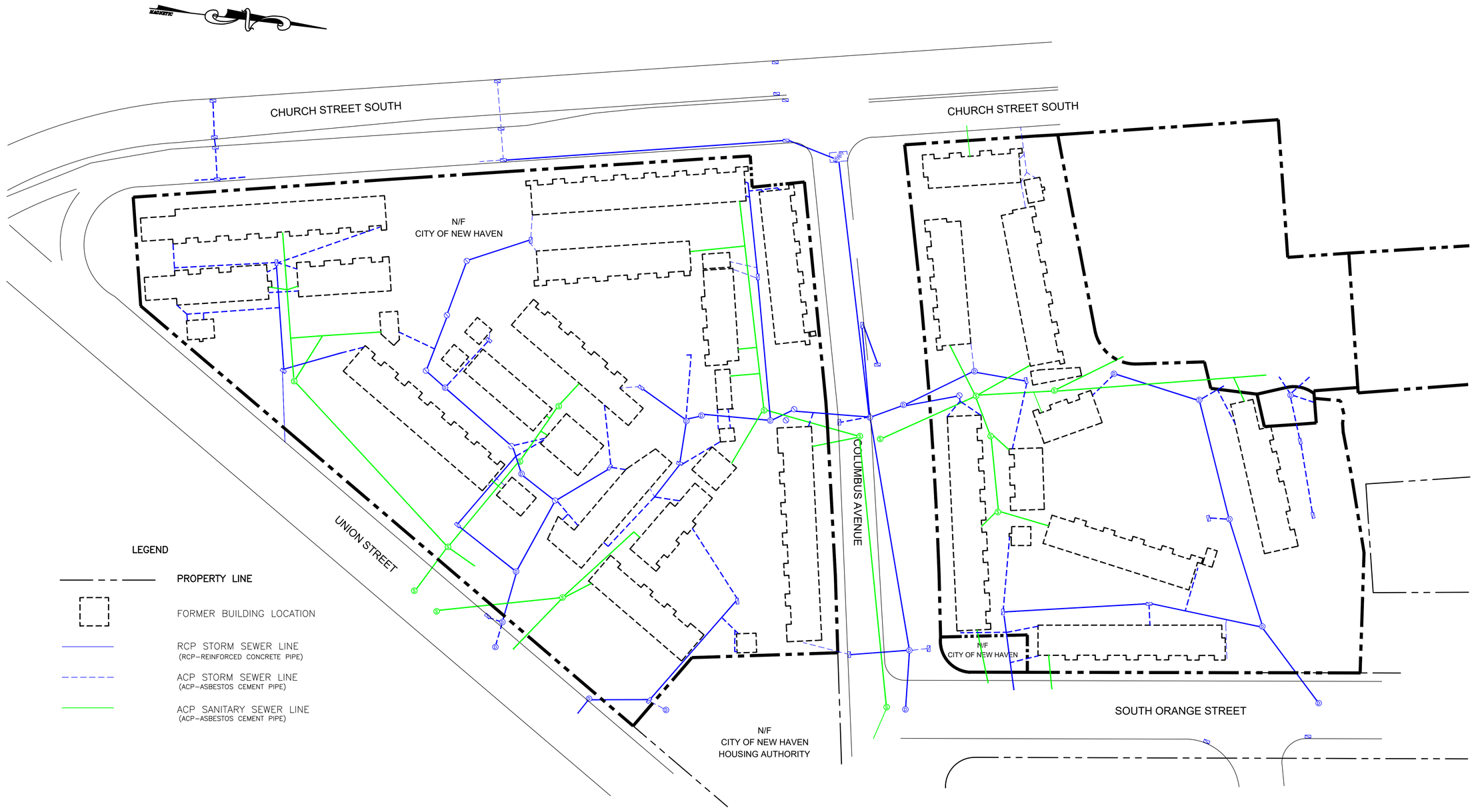
- The Contractor shall submit copies of all transport manifests, trip tickets, and disposal receipts for all ACWM removed from the work area during the project to the Owner's Representative.

END OF SECTION 02080

ATTACHMENT A

DRAWINGS

PAYNE
ENVIRONMENTAL, LLC



				PROJ. MANAGER:	
				CHIEF DESIGNER:	
				REVIEWED BY:	DATE
				NGP	3/4/2024
1.					
No.	DATE	DESCRIPTION	BY		
REVISIONS			WJK		

SANITARY & SEWER UTILITY PLAN

SCALE: HORZ.: 1"=50'

50 0 25 50 100

GRAPHIC SCALE

PAYNE ENVIRONMENTAL LLC
85 WILLOW STREET
NEW HAVEN, CONNECTICUT

CHURCH STREET SOUTH
NEW HAVEN , CONNECTICUT

PROJ. No.: 24.100/001
DATE: 5/8/2024

CSS-1

ATTACHMENT B

LABORATORY REPORTS

PAYNE ENVIRONMENTAL, LLC

EMSL Analytical, Inc.

165 Gracey Avenue Meriden, CT 06451

Tel/Fax: (203) 284-5948 / (203) 284-5978

http://www.EMSL.com / meridenlab@emsl.com

EMSL Order:	242401531
Customer ID:	PAYNE50
Customer PO:	24.100/001
Project ID:	

Attention:	Neil G. Payne	**Phone:**	(203) 421-2288
	Payne Environmental, LLC	**Fax:**	(203) 865-1286
	PO Box 1190	**Received Date:**	03/27/2024 9:00 AM
	Madison, CT 06443	**Analysis Date:**	03/27/2024
		Collected Date:	03/22/2024
Project:	24.100/001		

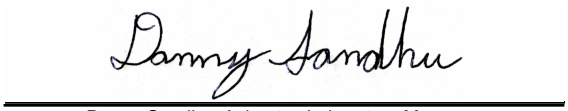
Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
PE-1A *242401531-0001*	CEMENT PIPING	Gray/White Non-Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
PE-1B *242401531-0002*	CEMENT PIPING				Positive Stop (Not Analyzed)
PE-2A *242401531-0003*	OFFWHITE INSULATION UNDER PE2	Gray Non-Fibrous Homogeneous		3% Quartz 97% Non-fibrous (Other)	None Detected
PE-2B *242401531-0004*	OFFWHITE INSULATION UNDER PE2	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
PE-3 *242401531-0005*	COATING ON BURIED UTILITY PIPE	Black/Rust Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Hailey Rangel (1)

Sara Poppa (3)



Danny Sandhu, Asbestos Laboratory Manager
or Other Approved Signatory

Initial report from: 03/27/2024 16:49:32

OrderID: 242401531

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 242401531

PHONE:
FAX:

Company Name : Payne Environmental LLC		**EMSL Customer ID:**	
Street: 85 Willow Street		**City:** New Haven	**State/Province:** CT
Zip/Postal Code: 06511	**Country:** USA	**Telephone #:** 203-865-1285 x110	**Fax #:** 203-865-1286
Report To (Name): Neil Payne		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: npayne@paynecorp.com		**Purchase Order:** 24.100/001	
Project Name/Number: 24.100/001		**EMSL Project ID** *(Internal Use Only)*:	
U.S. State Samples Taken: CT		**CT Samples:** ■ Commercial/Taxable ☐ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☐ 48 Hour | ■ 72 Hour | ☐ 96 Hour | ☐ 1 Week | ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☑ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
☐

☑ Check For Positive Stop – Clearly Identify Homogenous Group

Filter Pore Size (Air Samples): ☑ 0.8µm ☐ 0.45µm

Samplers Name: Neil G. Payne **Samplers Signature:** Neil G Payne

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
PE-1A, B	Cement piping		3/22/2024
PE-2A,B	Offwhite insulation under PE-2		3/22/2024
PE-3	Coating on buried utility pipe		3/22/2024

Client Sample # (s): PE-1A - PE-3 **Total # of Samples:** 5

Relinquished (Client): Neil G Payne **Date:** 3/27/24 **Time:** 0810

Received (Lab): **Date:** **Time:** Drop Box

Comments/Special Instructions: 24-HR TAT

RECEIVED
MAR 27 2024
By 900

Page 1 of 1 pages

Controlled Document – Asbestos COC – R10 – 05/09/2016

EMSL Analytical, Inc.

165 Gracey Avenue Meriden, CT 06451

Tel/Fax: (203) 284-5948 / (203) 284-5978

http://www.EMSL.com / meridenlab@emsl.com

EMSL Order:	242402184
Customer ID:	PAYNE50
Customer PO:	24.100/001
Project ID:	

Attention:	Neil G. Payne	**Phone:**	(203) 421-2288
	Payne Environmental, LLC	**Fax:**	(203) 865-1286
	PO Box 1190	**Received Date:**	05/06/2024 10:35 AM
	Madison, CT 06443	**Analysis Date:**	05/07/2024
		Collected Date:	05/01/2024
Project:	24.100/001		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
PE-4 *242402184-0001*	Electrical conduit pipe	Black Fibrous Homogeneous	35% Cellulose	65% Non-fibrous (Other)	None Detected
PE-5 *242402184-0002*	Electrical conduit pipe	Black Fibrous Homogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
PE-6 *242402184-0003*	Electrical conduit pipe	Black Fibrous Homogeneous	35% Cellulose	3% Quartz 62% Non-fibrous (Other)	None Detected
PE-7 *242402184-0004*	White bedding material under HW line	Gray/White Non-Fibrous Homogeneous	3% Cellulose	97% Non-fibrous (Other)	None Detected
PE-8 *242402184-0005*	6" concrete pipe	Gray/White Fibrous Homogeneous		82% Non-fibrous (Other)	**15% Chrysotile** **3% Crocidolite**
PE-9 *242402184-0006*	6" concrete pipe	Gray/White Fibrous Homogeneous		84% Non-fibrous (Other)	**12% Chrysotile** **4% Crocidolite**
PE-10 *242402184-0007*	15" concrete pipe	Gray Non-Fibrous Homogeneous		10% Quartz 90% Non-fibrous (Other)	None Detected
PE-11 *242402184-0008*	Black coating on cast iron pipe	Black Non-Fibrous Homogeneous		5% Quartz 95% Non-fibrous (Other)	None Detected

Analyst(s)

Shannon Halloran (4)

Sara Poppa (4)

Danny Sandhu, Asbestos Laboratory Manager
or Other Approved Signatory

Initial report from: 05/08/2024 08:44:04

EMSL Analytical, Inc.
165 Gracey Avenue Meriden, CT 06451
Tel/Fax: (203) 284-5948 / (203) 284-5978
http://www.EMSL.com / meridenlab@emsl.com

EMSL Order: 242402184
Customer ID: PAYNE50
Customer PO: 24.100/001
Project ID:

Attention: Neil G. Payne
Payne Environmental, LLC
PO Box 1190
Madison, CT 06443

Project: 24.100/001

Phone: (203) 421-2288
Fax: (203) 865-1286
Received Date: 05/06/2024 10:35 AM
Analysis Date: 05/09/2024
Collected Date: 05/01/2024

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
PE-4 *242402184-0001*	Electrical conduit pipe	Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
PE-5 *242402184-0002*	Electrical conduit pipe	Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
PE-6 *242402184-0003*	Electrical conduit pipe	Black Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected
PE-7 *242402184-0004*	White bedding material under HW line	Gray/White Fibrous Heterogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Danny Sandhu (4)

Danny Sandhu, Asbestos Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc. Meriden, CT

Initial report from: 05/09/2024 11:46:11

OrderID: 242402184

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (*Lab Use Only*): 242402184

PHONE:
FAX:

Company Name: Payne Environmental LLC		**EMSL Customer ID:**	
Street: 85 Willow Street		**City:** New Haven	**State/Province:** CT
Zip/Postal Code: 06511	**Country:** USA	**Telephone #:** 203-865-1285 x110	**Fax #:** 203-865-1286
Report To (Name): Neil Payne		**Please Provide Results:** ☐ Fax ☑ Email	
Email Address: npayne@paynecorp.com		**Purchase Order:** 24.100/001	
Project Name/Number: 24.100/001		**EMSL Project ID** (*Internal Use Only*):	
U.S. State Samples Taken: CT		**CT Samples:** ☐ Commercial/Taxable ☒ Residential/Tax Exempt	

EMSL-Bill to: ☑ Same ☐ Different - If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☒ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week

*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air ☐ Check if samples are from NY
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☑ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☐ NYS 198.1 (friable in NY)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NYS 198.8 SOF-V
☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☑ TEM EPA NOB
☐ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
Fibers >10µm ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM EPA 600/R-93/116 with milling prep (<1%)
☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
☐ TEM Qualitative via Filtration Prep
☐ TEM Qualitative via Drop Mount Prep
☐ Cincinnati Method EPA 600/R-04/004 – PLM/TEM (BC only)

Other:
☐

☐ **Check For Positive Stop – Clearly Identify Homogenous Group**

Filter Pore Size (Air Samples): ☐ 0.8µm ☐ 0.45µm

Samplers Name: Neil G. Payne **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
PE-4, 5, 6	Electrical conduit pipe (see note below)		5/1/2024
PE-7	White bedding material under HW line		5/1/2024
PE-8, 9	6" concrete pipe		5/1/2024
PE-10	15" concrete pipe		5/1/2024
PE-11	Black coating on cast iron pipe		5/1/2024

Client Sample # (s): PE-4 - PE-11 **Total # of Samples:** 8

Relinquished (Client): Neil G Payne **Date:** 5/6/24 **Time:** 1035

Received (Lab): **Date:** **Time:**

Comments/Special Instructions:
Please run all samples via Method PLM EPA 600/R-93/116. If ND for samples PE-4 through PE-7, please run TEM EPA NOB

RECEIVED
MAY 06 2024
By 1035

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Controlled Document – Asbestos COC – R10 – 05/09/2016