
OFFICIAL BID PACKAGE

ASBESTOS ABATEMENTS OF
COMMERCIAL DEMOLITIONS

Bid Opening: October 30, 2013

The City of Canton Development
Department

Name of Bidder: _____

LEGAL NOTICE

Ordinance 39/2013 and 111/2013

The Director of Public Safety of the City of Canton, Ohio will accept sealed bids until 2:00PM, local time on **Wednesday, October 30, 2013**, for the purpose of securing bids for:

Asbestos Abatements of Commercial Properties to be Demolished

Submit bid according to the specifications and bid sheet(s) shown on the City's Purchasing website at <http://cantonohio.gov/purchasing/?pg=bids>.

Submit all bids to the City of Canton Purchasing Department, 218 Cleveland Avenue SW, Purchasing Department/ Sixth Floor, Canton, Ohio 44702 before 2:00 p.m. on the day of the bid opening. The City will disqualify any bid not received on or before 2:00 PM on **Wednesday, October 30, 2013**.

The Sixth Floor Conference Room of Canton City Hall is the location for the Bid Opening. Contact Randy Dublikar at (330) 438-4185 or randall.dublikar@cantonohio.gov if you have any questions.

Each bid must contain the full name of every person or company participating in the bid. A **certified check, cashier's check or surety bond** must accompany the bid. Draw this check or bond from a solvent bank or bonding company satisfactory to the Director of Public Safety as a guarantee the contract and its performance are properly secured if the bid is accepted.

The Bidder shall verify the **certified check, cashier's check or bid bond for five hundred (\$500.00) dollars**. The City of Canton will **only accept original checks and bid bonds**. Therefore, if any company and/or bidder submits a copy (including faxed copies) of his/her \$500.00 security, the City will disqualify the bid.

The Director of Public Safety reserves the right to waive any technical defects in any bid bond submitted so long as the bond is in substantial compliance with State Law. Any bidder may withdraw his bid, by written request, at any time prior to the hour set for the bid opening. Please be advised, the City of Canton may impose a \$500.00 penalty to any bidder that withdraws his bid after the bid opening and prior to a contract award(s).

Should any bid not be awarded or be rejected, such check or bond will be returned to the bidder or bidders after the execution of the contract.

The Board of Control reserves the right to reject any or all bids and to accept the bid(s) deemed most beneficial to the City of Canton. All companies must submit their Federal ID Number.

By order of the Director of Public Safety: Andrea Perry
Published in the Canton Repository: October 15 and 22, 2013

CONTRACTOR REQUIREMENTS

Please be advised that before any contractor can do any Abatement work awarded, the City requires that the company be licensed with the State of Ohio Health Department.

Once the City notifies the Abatement Contractor of award, you will have fourteen (14) days up receipt of the purchase order to proceed with the work. If you do not start the work within this fourteen (14) day period, the City will re-award any and all properties awarded to your company to the next lowest bidder.

Each bidder must submit an “affirmative action plan” and/or “EEO policy.” Bidder must read all EEO and MBE requirements. Please submit a request for waiver on company letterhead if you do not have the opportunity to subcontract any work. Enclose the company EEO policy. If the company does not have a formal EEO policy, please complete the EEO policy statement included in this bid package.

Each bidder must submit their federal ID number for IRS purposes.

Please acknowledge that you have read the above requirements by signing below.

DATE

SIGNATURE

SPECIFICATIONS

Notes: Each of the following properties will be awarded individually, or in groups, in the manner most beneficial to the City of Canton.

611 Spring Ave NE	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.
1831-33 Bryan Ave SW	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.
1201 Fulton Road NW	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.
1236 Tuscarawas St E.	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.
745 Ross Ave NE	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.
1220 9 th Street NE	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED. The City of Canton will appoint a third party contractor to monitor air quality and abatement procedures as necessary.

Additional Specifications:

1. Clean up of the site: In addition to the final clean up, daily clean up shall be conducted. All blowing debris is the responsibility of the abatement contractor. Protect all sidewalks, drives, signs and any other site feature to remain. Site shall be left in a safe condition when contractor personnel are not present.
2. Timeframe: The start of the abatement to the final will be a maximum of 96 hours (or four days), with the exception of Washington School. Abatement of Washington School shall be completed within thirty (30) working days
3. Fines: The commencement or continuation of the abatement of a building beyond the above-stated requirements shall constitute a \$250.00 fine per day, which will be deducted from the amount of the award. For good cause shown, the Department of Development may extend the required time period. Only one (1) extension shall be granted.
4. Payments: Payment will be made within thirty (30) days of the approval of invoices submitted for services performed.

OTHER PROGRAM REQUIREMENTS

This AGREEMENT shall require all recipients to carry out each activity in compliance with all Federal Laws and regulations of the CDBG Program as applicable.

ATTACHMENT II **RECORDS TO BE MAINTAINED (AS APPLICABLE)**

The recipient shall establish and maintain sufficient records to enable the City to determine whether the recipient has met the requirements of the CDBG Program.

At a minimum, the following records are needed:

- A. Records providing a full description of each activity carried out (or being carried out) in whole or in part with CDBG funds, including its location (if the activity has geographical focus), and the amount of CDBG funds budgeted, obligated and expended for the activity.
- B. For each activity determined to aid in the prevention or elimination of slums or blight based on addressing one or more of the conditions that qualified an area as a slum or blighted area:
 - 1. The boundaries of the area; and
 - 2. A description of the conditions that qualified the area at the time of its designation in sufficient detail to demonstrate how the area met the criteria in 24 CFR 570.208 (b)(1).
- C. Records that demonstrate the CITY has made the determinations required as a condition of eligibility of certain activities, as prescribed in 24 CFR 570.201(f), 570.201(i), 570.202(b)(3), 570.203(b), 570.204(a), and 570.206(f).
- D. Records that demonstrate compliance with 24 CFR 570.505 regarding any change of use of real property acquired or improved with CDBG assistance.
- E. Records that demonstrate compliance with the citizen participation requirements prescribed in Section 104(a)(3) of the Act, and in 24 CFR 570.301(b) and 570.305 for Entitlement Communities.

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- F. Records that demonstrate compliance with the requirements in 24 CFR 570.606 regarding acquisition, displacement, relocation, and replacement housing.
- G. Financial records, in accordance with the applicable requirements listed in Section 570.502.
- H. Records required to be maintained in accordance with other applicable laws and regulations set forth in Subpart R of the CDBG regulations.

ATTACHMENT I - CERTIFICATION AND OTHER REGULATIONS

A. APPLICABILITY OF UNIFORM ADMINISTRATIVE REQUIREMENTS

SUBRECIPIENT shall comply with the following Federal administrative requirements and standards:

- 1. OMB Circular A-122, "Cost Principles for Nonprofit Organizations".
- 2. OMB Circular A-110, "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospital, and Other Non-Profit Organizations".
- 3. 24 CFR Part 84, "Grants and Agreements with Institutions of Higher Education, Hospital, and Other Non-Profit Organizations".

B. EQUAL OPPORTUNITY

SUBRECIPIENT agrees to

comply:

- 1. Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and the HUD regulations under 24 CFR Part 1, which provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving Federal financial assistance by way of grant, loan, or contract and will immediately take any measures necessary to effectuate this Agreement. If any real property or structure thereof is provided or improved with the aid of Federal financial assistance extended to SUBRECIPIENT, this assurance shall obligate SUBRECIPIENT, or in the case of any transfer of such property or structure is used for a purpose of which the Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits.

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2. Title VIII of the Civil Rights Act of 1968 (P.L. 90-284), as amended by the Fair Housing Amendments Act of 1988 (P. L. 100-30), and will administer all programs and activities relating to housing and community development in a manner to affirmatively further fair housing within Constitutional limitations throughout the United States.
3. Section 109 of the Housing and Community Development Act of 1974 and 1977, as amended, and in conformance with all requirements imposed pursuant to the regulations of the Department of HUD(24 CFR Part 570.602) issued pursuant to that Section; and in accordance with Equal Opportunity obligations of that Section, no person in the United States shall, on the grounds of race, color, national origin, or sex, be excluded from participation in, be denied the benefits of, be subjected to discrimination under, any program or activity funded in whole or in part with the Community Development funds.

Section 109 of the Act further provides that any prohibition against discrimination on the basis of age, under the Age Discrimination Act of 1975 (24 CFR Part 146), or with respect to an otherwise qualified handicapped person, as provided in Section 504 of the Rehabilitation Act of 1973 (24 CFR Part 8), shall also apply to any program or activity funded in whole or in part with funds made available pursuant to the Act.

4. Executive Order 11063 on equal opportunity in housing and related facilities owned or operated by the Federal Government or provided with Federal financial assistance.
5. Executive Order 11246, as amended, requiring nondiscrimination and affirmative action to ensure nondiscrimination in employment by government contractors and subcontractors and under Federally assisted construction contractors.
6. Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u), as amended, the HUD regulations issued pursuant thereto (24 CFR Part 135) as follows:
 - a. The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701u); Section 3 requires that to the greatest extent feasible, opportunities for training and employment be given to lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns that are located in or owned in substantial part by persons residing in the area of the project.
 - b. The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary

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of Housing and Urban Development set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this contract. The parties to this contract certify and agree that they are under no contractual or other disability that would prevent them from complying with these requirements.

- c. The contractor will send to each labor organization or representative or workers, with which he has a collective bargaining agreement or other contract or understanding, if any a notice advertising the said labor organization or workers' representative of his commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.
- d. The contractor will include this Section 3 clause to every subcontract for work in connection with the project and will, at the direction of the CITY, take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR Part 135. The contractor will not subcontract with any subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR Part 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.
- e. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of the contract, shall be a condition of the Federal financial assistance provided to the project.

C. SUBCONTRACTING

All work or services covered by this Agreement which is subcontracted by the Subrecipient, shall be specified by written contract and subject to all provisions of this Agreement. All subcontracts must be approved by the CITY prior to execution.

D. INTEREST OF CERTAIN FEDERAL OFFICIALS

No member or delegate to the Congress of the United States shall be admitted to any share or part of this Agreement or to any benefit to arise from the same.

E. INTEREST OF MEMBERS, OFFICERS OR EMPLOYEES OF SUBRECIPIENT, MEMBERS OF THE LOCAL GOVERNING BODY, OR OTHER PUBLIC OFFICIALS

No member, officer or employee of SUBRECIPIENT or its designees or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercises any functions

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or responsibilities with respect to the program during his tenure or for 1 year thereafter, shall have any interest, direct or indirect, in any contract or subcontract, or the proceeds thereof, for work to be performed in connection with the program assisted under this Agreement.

F. HATCH ACT

SUBRECIPIENT agrees to comply with all provisions of the Hatch Act and that no part of the program will involve political activities, nor shall personnel employed in the administration off the program be engaged in activities in contravention of Title V, Chapter 15, of the United States Code.

G. LABOR STANDARDS PROVISIONS

SUBRECIPIENT agrees to comply with Section 570.603, Labor Standards of the Regulations published by HUD for Community Development Block Grants.

H. COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

SUBRECIPIENT agrees to comply with any conditions resulting from the CITY'S compliance with the provisions of the National Environmental Policy Act of 1969 and the other provisions of law specified at 24 GFR 58.5 insofar as the provisions of such Act apply to activities set forth in ATTACHMENT 1-- Statement of Work.

I. COMPLIANCE WITH FLOOD DISASTER PROTECTION ACT

This Agreement is subject to the requirements of the Flood Disaster Protection Act of 1973 (P.L. 93-234). No portion of the assistance provided under this Agreement is approved for acquisition or construction purposes as defined under Section 3(a) of said Act, for use in any area identified by the Secretary as having special flood hazards, which is located in a community not then in compliance with the requirements for participation in the national flood insurance program pursuant to Section 201(d) of said Act; and the use of any assistance provided under this Agreement for such acquisition or construction in such identified areas in communities then participating in the national flood insurance program shall be subject to the mandatory purchase of flood insurance requirements of Section 102(a) of said Act.

Any contract or agreement for the sale, lease, or other transfer of land acquired, cleared, or improved with assistance provided under this Agreement shall contain, if such land is located in an area identified by the Secretary as having special flood hazards and in which the sale of flood insurance has been made available under the National Flood Insurance Act of 1968, as amended 42 U.S.C. 4001 et seq., provisions obligating the transferee and its successors or assigns to obtain and maintain, during the ownership of such land, such flood insurance required with respect to financial assistance for acquisition or construction purposes under Section 102(2) of Flood Disaster Protection Act of

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1973. Such provisions shall be required notwithstanding the fact that the construction of such land is not itself funded with assistance under this Agreement.

J. COMPLIANCE WITH AIR AND WATER ACTS

This Agreement is subject to the requirements of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq.; The Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.; and the regulations of the Environmental Protection Agency with respect hereto, at 40 CFR Part 15, as amended from time to time.

In compliance with said regulations, the CITY shall cause or require to be inserted in full in all contracts and subcontracts with respect to any nonexempt transaction thereunder funded with assistance provided under this Agreement, the following requirements:

1. A stipulation by the contractor or subcontractor that any facility to be utilized in the performance of any nonexempt contract or subcontract is not listed on the list of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR 15.20.
2. Agreement by the contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended (42 U.S.C. 1857c-8), and Section 308 of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
3. A stipulation that as a condition for the award of the contract, prompt notice will be given of any notification received from the director, Office of Federal Activities EPA, indicating that a facility utilized or to be utilized for the contract is under consideration to be listed on the EPA list of Violating Facilities.
4. Agreement by the contractor that he will include or cause to be included the criteria and requirements in Paragraph A through O of this section in every nonexempt subcontract and requiring the contractor will take such action as the Government may direct as means of enforcing such provisions.

In no event shall any amount of the assistance provided under this Agreement be utilized with respect to a facility that has given rise to a conviction under Section 113(c)(1) of the Clean Air Act or Section 309(c) of the Federal Water Pollution Control Act.

K. HISTORIC PRESERVATION

This Agreement is subject to the requirements of P.L. 89-65, the Archaeological and Historic Preservation Act of 1974 (P.L. 93-291), Executive Order 11593, and the procedures prescribed by the Advisory Council on Historic Preservation in 36 CFR Part 800. The CITY must take into account the effect of a project on any district, site, building, structure, or object listed in or found by the Secretary of the Interior, pursuant to 35 CFR Part 800, to be eligible for

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inclusion in the National Register of Historic Places, maintained by the National Park Service of the U.S. Department of the Interior, and must make every effort to eliminate or minimize any adverse effect on a historic property.

L. ARCHITECTURAL BARRIERS

This Agreement is subject to the requirements of the Architectural Barriers Act of 1968 (42 U.S.C.4151) and its regulations. Every building or facility (other than a privately owned residential structure) designed, constructed, or altered with CDBG funds must comply with the requirements of the "American Standards Specifications for Making Buildings and Facilities Accessible To, and Usable By, the Physically Handicapped."

M. LEAD-BASED PAINT

This Agreement is subject to the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4831 et seq.), and the Lead-Based Paint Regulations (24 CFR Part 35 and 24 CFR Part 570.608). The use of lead-based paint is prohibited whenever CDBG funds are used directly or indirectly for the construction, rehabilitation, or modernization of residential structures. Immediate lead-based paint hazards existing in residential structures assisted with CDBG funds must be eliminated, and purchasers and tenants of assisted structures constructed prior to 1978 must be notified of the hazards of lead-based paint poisoning.

N. PROPERTY DISPOSITION

Real or personal property purchased in whole or in part with CDBG funds shall not be disposed through sale, use, or location without the written permission of the CITY. The proceeds from the disposition of real property shall be considered program income and subject to 24 CFR Part 570.504(c).

O. LOBBYING

Block Grant funds shall not be used for publicity or propaganda purposes designed to support or defeat legislation pending Federal, State, or local governments.

P. ACQUISITION/ RELOCATION

This agreement is subject to providing a certification that the SUBRECIPIENT will comply with the acquisition and relocation requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, implementing regulations at 49 CFR Part 24, and 24 CFR Part 511.14, which govern the acquisition of real property for the project and provision of relocation assistance to persons displaced as a direct result of acquisition, rehabilitation, or demolition for this project.

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PRICING PAGES

We (I), the below signed hereby propose to furnish the following article(s) and/or service(s) at the price(s) and terms stated subject to all instructions, conditions, specifications, and all attachments hereto. We (I) have read all attachments including the specifications and fully understand what is required.

Item #	Location	Additional Instructions for the Location (to be included in bid price)	Price (In Figures)	Price (In Words)	
1	611 Spring Ave NE	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.			
2	1831-33 Bryan Ave SW	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.			
3	1201 Fulton Rd NW	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.			
4	1236 Tuscarawas St. E.	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.			
6	745 Ross Ave NE	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED.			
7	1220 9 th Street NE (Washington School)	Remove all asbestos as stated in the Asbestos Report. ASBESTOS REPORT ATTACHED. The City of Canton will appoint a third party contractor to monitor air quality and abatement procedures as necessary.			

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BIDDER'S CHECKLIST

A complete bid packet will consist of the items listed below.

Complete this checklist to confirm the items required in your bid. Place a checkmark or "X" next to each item that you are submitting to the City of Canton. Failure to submit the listed documents may be cause for rejection of your bid. This checklist should be returned with your proposal.

- _____ Cover sheet (Page 1)
- _____ Legal Notice/Information (Pages 2)
- _____ Contractor Special Requirements (Page 3)
- _____ Property Listings/Specifications (Page 4)
- _____ CDBG Program Requirements (Pages 5-11)
- _____ Pricing Pages (Page 12)
- _____ Bidder's Checklist (Page 13)
- _____ Bid Check (Certified or Cashiers) or Bid Bond (Page 14)
- _____ Bidder Information/Signature Pages (Pages 15-17)
- _____ Additional Information and Considerations for Bidders (Page 18)
- _____ Applicable City of Canton Codified Ordinances (Pages 19-20)
- _____ EEO Forms (Pages 21-25)
- _____ Asbestos Reports (Attached)

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INSERT BID GUARANTY HERE

If a Bid Bond is supplied, the Ohio Statutory Bid Guaranty and Contract Bond, as set forth in ORC 153.571 is to be used.

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Bidder Information Page 2 of 3

2. Form of Business Organization.

____ Corporation

____ Partnership

____ Other

3. The bidder shall provide the names and addresses of all persons interested as principals (officers, partners, and associates) in this proposal. Write first name in full, and give titles for offices.

_____	_____
_____	_____
_____	_____
_____	_____

All of the above, including the signatory to this bid, are citizens of the United States, except the following. (Provide names and addresses of those not a citizen of the United States.)

_____	_____
_____	_____
_____	_____
_____	_____

4. Name and address of other person, firms or companies interested in this contract.

_____	_____
_____	_____
_____	_____
_____	_____

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Bidder Information Page 3 of 3

The undersigned certifies that the bidder has the facilities, ability and financial resources available for the fulfillment of the contract if such be awarded to said bidder.

Upon request, the bidder will be expected to amplify the foregoing statements as necessary to satisfy the OWNER concerning his ability to successfully perform the work in a satisfactory manner.

Signed this _____ day of _____, 20 _____.

Contractor

By _____
(Signature of individual, partner or officer signing the proposal.)

Please have this page Notarized

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ADDITIONAL INFORMATION AND CONSIDERATIONS

1. Pleased be advised that when you submit a bid(s) to the City of Canton, the City will assume that an authorized representative of your company reviewed said bid(s) to assure that the bid(s) is/are correct and/or accurate.
2. Any bidder may withdraw a bid, by written request, at any time **prior** to the time set for the bid opening.
3. If there is no withdrawal of the bid(s), in accordance to the above procedure, the City reserves the right to enforce said bid prices(s) and/or contract.
4. Canton Income Tax: Each bidder, by the act of submitting a bid, agrees to withhold all City income taxes due or payable under Chapter 181 of the Codified Ordinances of the City of Canton for wages, salaries, fees and commissions paid to its employees and further agrees that any of its subcontractors shall be required to agree to withhold any such City Income Taxes due for service performed under this contract.

Furthermore, any person, firm, or agency that has a contract, or agreement with the City shall be subject to the City Income Tax whether the work being done is in the City or out of the City. In addition to the tax withheld for employees, the net profit on the contract shall be subject to City Income Tax.

Questions regarding this matter shall be directed to the City of Canton, Income Tax Department at 330-430-7900.

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CITY OF CANTON CODIFIED ORDINANCES

Bidders shall take notice that they are to comply with the Codified Ordinances of the City of Canton, including but not limited, to the following:

1. Section 105.06 – MINORITY CONTRACT PROVISION
 - a. All contracts with the City shall include the following clause:

The bidder agrees to expend at least \$_____ of the Contract in the event the contract is awarded to such bidder for minority/women's business enterprises. For purposes of this pledge, the term "minority/women's business enterprise" means a bona fide business established as a sole proprietorship, partnership or corporation owned, operated and controlled by one or more minority persons or women who have at least fifty-one percent (51%) ownership. "Minority" includes African Americans, Asian/Pacific Islanders, Hispanic/Latino Americans and Native American Indians. The minority or woman must have operational and managerial control, interest in capital, and earnings commensurate with the percentage of ownership. Minority/women's business enterprises may be employed as construction contractors, subcontractors, vendors or suppliers.

(Ord.185-2011. Passed 10-31-11.)
2. Section 105.12 – Local Bidder Preference.
 - (a) The Board of Control, in determining the lowest and best bidder in the award of contracts, is authorized to award contracts to local bidders as hereinafter defined, whose bid is not more than ten percent (10%) higher, subject to a maximum amount of one hundred thousand dollars (\$100,000.00), than the lowest dollar bid submitted by non-local bidders, provided that the project bid does not exceed ten percent (10%) of the engineer's estimate. The Board of Control's decision in making such an award shall be final.

(Ord. 86-2009. Passed 5-18-09.)
 - (b) For purposes of this section, "local bidder" means an individual or business entity which at the time of the award of the contract:
 - (1) Is a resident of the City and/or has its principal place of business in the City; and
 - (2) Which has filed a City of Canton "Resident" Income Tax Return for the past two tax years.
 - (c) All contract specifications and/or bid documents that are distributed by Canton for the purpose of soliciting bids for goods and/or services shall contain the following notice:

Prospective bidders will take notice that the City of Canton, in determining the lowest and best bidder in the award of this contract, may award a local bidder preference to any qualified bidder pursuant to Section 105.12 of the Codified Ordinances of the City of Canton. The determination of whether a bidder

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qualifies for the local preference shall be made by Board of Control. The Board's decision shall be final. A copy of City Code Section 105.12 is attached.
(Ord.112-97. Passed 6-2-97.)

(d) This section shall be applicable to all contracts for the purchase of material, equipment, supplies or services, which are purchased, leased or constructed at a cost in excess of twenty thousand dollars (\$20,000) and which require bidding pursuant to Ohio R.C. 735.05 through 735.09 and Ohio R.C. 737.03.
(Ord. 112-97. Passed 6-2-97; Ord. 52-99. Passed 3-29-99; Ord. 240-2005. Passed 11-21-05.)

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PLEASE FILL OUT THIS FORM AND RETURN PROMPTLY TO THE ADDRESS BELOW

BIDDER AND CONTRACTOR EMPLOYMENT PRACTICES REPORT

Minority Coordinator
218 Cleveland Avenue SW
Canton, Ohio 44702

I. INSTRUCTIONS

- A. **EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENT:** This form is designed to provide an evaluation of your policies and practices relating to the extension of equal employment opportunity to all persons without regard to race, religion, color, sex or national origin.

Ordinance No. 179-74 of the City of Canton and the rules and regulations pursuant thereto provide for a contract compliance inspection of personnel policies and practices related to any contract with the City including contracts for work, labor, services, supplies, equipment, materials, leases, concession agreements, and permits.

- B. **CONTRACTOR AND BIDDER PERFORMANCE:** Completion of this Contractor and Bidder Employment Practices Report is one of the steps which demonstrates compliance with the City's Equal Employment Opportunity Program. Responsibility for demonstrating compliance with the Program by the contractor and his subcontractors rests with the contractor or subcontractor. Such demonstration is a prerequisite for continued eligibility for bidding on city contracts, or for continuing in contract with the City.

II. CONTRACTOR AND BIDDER INFORMATION

1. REPORTING STATUS <input type="checkbox"/> a. Prime Contractor <input type="checkbox"/> b. Prime Subcontractor <input type="checkbox"/> c. Supplier <input type="checkbox"/> d. Other (Specify)
2. NAME, ADDRESS AND TELEPHONE NUMBER OF BIDDER COVERED BY THIS REPORT
3. NAME, ADDRESS AND TELEPHONE NUMBER OF PRINCIPAL OFFICIAL OR MANAGER OF BIDDER
4. NAME, ADDRESS AND TELEPHONE NUMBER OF PRINCIPAL OFFICE OF BIDDER
5. CONTRACTING CITY AGENCY (OR AGENCIES)
6. SIGNATURE AND TITLE OF AUTHORIZED EQUAL EMPLOYMENT OPPORTUNITY REPRESENTATIVE DATE

EVALUATION (level blank)

Compliance

Non-Compliance

Follow-up _____

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IV. EMPLOYMENT DATA

Please note that this data may be obtained by visual survey or post-employment records. Neither visual surveys nor post-employment records are prohibited by any Federal, State or local law. All specified data are required to be filled in by law.

JOB CATEGORIES	ALL EMPLOYEES			MINORITY GROUP EMPLOYEES								
	TOTAL MALE & FEMALE	MALE	FEMALE	MALE				FEMALE				
				African American	Asian American	Native American	Hispanic	African American	Asian American	Native American	Hispanic	
Officials, Mgrs and Supervisors												
Professionals												
Technicians												
Part-Time Seasonal												
Office and Clerical												
Craftsmen (Skilled)												
Operatives (Semi-skilled)												
Laborers (Unskilled)												
Service Workers												
TOTAL												
Total employment from previous report (if any)												

REMARKS Use this space to give any identification data appearing on last report which differs from that given above, explain major changes in employment, changes in composition of reporting units, and other pertinent information.

The undersigned certifies that he is legally authorized by the bidder to make the statements and representations contained in this report. That he has read all of the foregoing statements and representations and that they are true and correct to the best of his knowledge and belief. The undersigned, understands that if any of the statements and representations are made knowing them to be false or there is a failure to implement any of the stated intentions or objectives, set forth herein, without prior notice to the Office of Contract Compliance, the bidder will be subject to the loss of all future awards.

FIRM OR CORPORATE NAME _____

DATE OF SIGNING _____

SIGNATURE _____

TITLE _____

SIGNATURE _____

TITLE _____

Asbestos Abatements
City of Canton Development Department

V. ADDITIONAL INFORMATION (OPTIONAL)

Describe any other actions taken which show that all employees are recruited, hired, trained, and promoted without regard to their race, religion, color, sex, or national origin. Use separate sheet if additional space is required.

DESCRIPTION OF OCCUPATIONAL CATEGORIES

Officials, managers and supervisors - Occupations requiring administrative personnel who set broad policies, exercise over-all responsibility for execution of these policies, and direct individual departments or special phases of a firm's operations. Includes officials, executives, middle management, plant managers, department managers and superintendents, salaried foremen who are members of management, purchasing agents and buyers, and kindred workers.

Professionals - Occupations requiring either college graduation or experience of such kind and amount as to provide a comparable background. Includes accountants and auditors, airplane pilots and navigators, architects, artists, chemists, designers, dietitians, editors, engineers, lawyers, librarians, mathematicians, natural scientists, physicians, social scientists, teachers, and kindred workers.

Technicians - Occupations requiring a combination of basic scientific knowledge and manual skill which can be obtained through about 2 years of post high school education, such as is offered in many technical institutes and junior colleges, or through equivalent on-the-job training. Includes draftsmen, engineering aids, junior engineers, mathematical aids, nurses, photographers, radio operators, scientific assistants, surveyors, technical illustrators, technicians, (medical, dental, electronic physical sciences), and kindred workers.

Sales workers - Occupations engaging wholly or primarily in direct selling. Includes advertising agents and salesmen, insurance agents and brokers, stock and bond salesmen, demonstrators, salesmen and sales clerks and kindred workers.

Office and clerical - Includes all clerical type work regardless of level of difficulty, where the activities are predominantly nonmanual though some manual work not directly involved with altering or transporting the products is included. Includes bookkeepers, cashiers, collectors (bills and accounts), messengers and office boys, office machine operators, shipping and receiving clerks, stenographers, typists and secretaries, telegraph and telephone operators, and kindred workers.

Craftsmen (Skilled) - Manual workers of relatively high skill level having a thorough and comprehensive knowledge of the processes involved in their work. Exercise considerable independent judgement and usually receive an extensive period of training. Includes the building trades hourly paid foremen and leadmen who are not members of management, mechanics and repairmen, skilled machining occupations, compositors and typesetters, electricians, engravers, job setters (metal), motion picture projectionists, pattern and model makers, stationary engineers, tailors and tailoresses, and kindred workers.

Operatives - (Semi-Skilled) - Workers who operate machine or processing equipment or perform other factory-type duties of intermediate skill level which can be mastered in a few weeks and require only limited training.

Laborers (Unskilled) - Workers in manual occupations which generally require no special training. Perform elementary duties that may be learned in a few days and require no independent judgement. Includes garage laborers, car washers and greasers, gardeners (except farm) and groundskeepers, longshoremen and stevedores, lumbermen, raftsmen and wood choppers, laborers performing lifting, digging, mixing, loading, and pulling operations, and kindred workers.

Service workers - Workers in both protective and nonprotective service occupations. Includes attendants (hospital and other institution, professional and personal service), barbers, charwomen and cleaners, cooks (except household), counter and fountain workers, elevator operators, firemen and fire protection, guards, watchmen, and doorkeepers, stewards, janitors, policemen and detectives, porters, waiters and waitresses, and kindred workers.

Apprentices - Persons employed in a program including work training and related instruction to learn a trade or craft which is traditionally considered an apprenticeship, regardless of whether the program is registered with federal or State agency.

**Asbestos Abatements
City of Canton Development Department**

POLICY STATEMENT

THE CITY OF CANTON, OHIO IN CONFORMANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS REQUIRE EACH EMPLOYER, CONTRACTOR, AND MATERIAL SUPPLIERS WORKING CITY PROJECTS TO BE SIGNATURES OF THE FOLLOWING STATEMENTS:

1. IT IS THE POLICY OF _____ THAT EQUAL EMPLOYMENT OPPORTUNITY BE AFORDED TO ALL QUALIFIED PERSONS WITHOUT REGARD TO RACE, RELIGION, SEX OR NATIONAL ORIGIN.
2. IN SUPPORT OF THIS DOCUMENT _____ WILL NOT DISCRIMINATE AGAINST ANY EMPLOYEE OR APPLICANT BECAUSE OF RACE, RELIGION, COLOR, SEX OR NATIONAL ORIGIN.
3. THE _____ WILL TAKE AFFIRMATIVE ACTION TO INSURE THAT APPLICANTS ARE EMPLOYED AND THAT EMPLOYEES ARE TREATED DURING EMPLOYMENT WITHOUT REGARD TO THEIR RACE, RELIGION, COLOR SEX OR NATIONAL ORIGIN. SUCH ACTION WILL INCLUDE BUT NOT BE LIMITED TO:
RECRUITMENT, ADVERTISING OR SOLICITATION FOR EMPLOYMENT, HIRING, PLACEMENT, UPGRADING, TRANSFER OR DEMOTION, SELECTION FOR TRAINING INCLUDING APPRENTICESHIP RATES OF PAY OR OTHER FORMS OF COMPENSATION, LAYOFFS OR TERMINATION.
4. THE OF _____ WILL MAKE EVERY EFFORT TO COMPLY WITH MINORITY UTILIZATION GOALS AS FOLLOWS: (9%) NINE PERCENT MINORITIES IN WORKFORCE ON THIS JOB, (6.9%) SIX POINT NINE PERCENT FEMALE UTILIZATION ON THIS JOB, (10%) TEN PERCENT OF CONTRACT AMOUNT EXPENDED WITH MINORITY BUSINESS ENTERPRISES.
5. THE OF _____ SHALL REQUIRE EACH SUB-CONTRACTOR WE HIRE ON THIS PROJECT TO ADHERE TO, SIGN, AND RETURN THIS STATEMENT TO THE CITY.

(Date)

(Name of Company)

(Signature and Title of Company Officer)

Asbestos Survey

Prepared for the City of Canton Demolition Department

For the property located at

611 Spring Avenue NE

Canton, OH 44704



SECTION	CONTENT	PAGE
1	EXECUTIVE SUMMARY	1
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3	SCOPE OF SERVICES	3
SECTION	APPENDICES	PAGE
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APPENDIX B	CHAIN OF CUSTODY FORMS	B5
APPENDIX C	LABORATORY SAMPLE RESULTS	C6

Provided by Positive Energy Environmental
Prepared by Darrell Morris, Certification ES35369
18708 Van Aken Blvd.
Shaker Heights, OH 44122
Phone (216) 466 – 5295 Fax (216) 373 – 7291
dchemyschool1@yahoo.com
gmanuelangel@yahoo.com

SECTION 1 – EXECUTIVE SUMMARY

Positive Energy Environmental performed an asbestos building inspection (Survey) for the City of Canton Demolition Department, on a property located at 611 Spring Avenue NE, Canton, OH 44704, pursuant to a Purchase Order for the same. These assessments are completed in order to identify any asbestos containing material (ACM) currently present in the structures.

The report will determine which ACM will require removal before renovation, demolition, or occupancy. The report also identifies “Homogenous Areas (HA), which are materials that are uniform in texture, color, date of application, use or system, and appear identical in every other respect. All determinations will be in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos.

The following is a list of the suspect building materials at the assessed premises.

Material Tested	Sample Numbers	H.A.	Locations of Material Tested	Quantity	Condition	RACM	Friable	Remove Y/N
Plaster	2A, 2B, 2C	A	Bedroom 1, Bedroom 2, Hall	1500 sq. ft.	F	N	Y	N
Duct Wrapping	1A	B	Basement	50 linear ft.	P	Y	Y	Y
Asphalt Roof Shingles	Assumed	C	Entire Roof	1200 sq. ft.	P	N	N	N
Vinyl Flooring	Assumed	D	Throughout Dwelling	600 sq. ft.	P	N	N	N

Transite Y/N: N

Clean Out Needed Y/N: N

SECTION 2 – SURVEY FINDINGS

The assessed property is a vacant residential property, Permanent Parcel No. 226672 according to the Stark County Auditor's website. According to Auditor's website, the structure is a two story, wood framed dwelling. The year built is 1900. Measurements of the dwelling is approximately 1,056 total square feet. Darrell Morris, Certified Asbestos Hazard Evaluation Specialist, ES35369, conducted the assessment on September 17, 2013. The weather was overcast, with a temperature of 75* F.

The samples were taken by the hand "Grab" method, containerized, labeled, and recorded on a "Chain of Custody" log, as shown in Appendix B. All sampling was done on a random basis in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos. The samples were analyzed by Polar Light Microscopy (PLM) by a NVLAP accredited laboratory. The accredited test method was EPA/600M-4-82-020. Procedures described in EPA/600/R-93/116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and less than 10% content was automatically "Point Tested". Testing was halted on the "First Positive" of any one Homogenous Area. Condition qualifications are as follows:

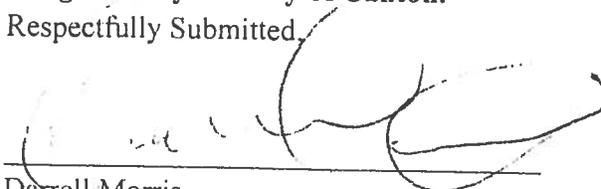
"Good" means no damage

"Fair" means up to 10% overall damage and up to 25% localized damage

"Poor" means over 10% overall damage and over 25% localized damage

Certain items are "Assumed" ACM because of two reasons. Firstly, the material is clearly recognized as ACM based upon the Inspector's experience, and indicated as such. Secondly, the building material in question may be considered Non-Friable, therefore not required to be removed prior to demolition. This would occur when the matrix that may contain the ACM is considered sufficient to contain any asbestos material that may be present in the particular homogenous area. These materials are "Category I Non-Friable", like asphalt shingle roofing and floor tile. If any of these materials are in poor condition, and would likely become friable during the demolition process, then they would be categorized as Friable, and be required to be removed prior to demolition. In any case the demolition contractor must use appropriate "Wet Methods" while taking down the structure. If additional suspect ACM is found during demolition, the contractor should immediately **STOP and must call the Qualified Individual designated by the City of Canton.**

Respectfully Submitted,



Darrell Morris

Certification Number ES35369

September 18, 2013

SECTION 3 – SCOPE OF SERVICES

IDENTIFICATION

A visual inspection is conducted, in all accessible areas of the building(s), for the presence of suspect Asbestos Containing Materials (ACM). Materials with the same color, texture, date of application, system, or use are considered in the same Homogenous Area (HA).

DETECTION

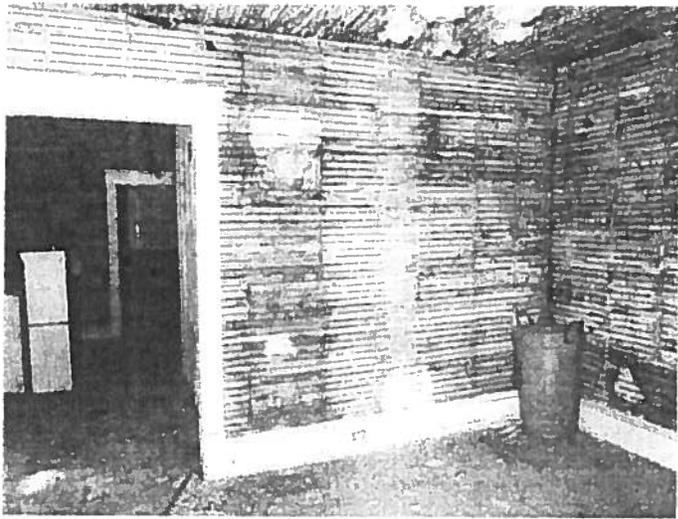
The number and location of samples required for each HA will be determined. a drawing of the facility will be provided showing each sample taken. If determined necessary, sample locations will be marked in the field. Digital images will be taken of any areas deemed necessary by the Qualified Inspector.

Samples taken by a Qualified Individual, who has the requisite licensing/certification for the state in which sampling is taking place. The samples will be containerized, labeled, and recorded on a “Chain of Custody Form” for proper documentation. While sampling, all precautions will be taken to protect the health and safety of all workers, and any individual that might have access to the sampling areas.

Samples will be submitted to a qualified laboratory for testing. The samples will be analyzed by Polar Light Microscopy (PLM). The accredited test method will be EPA/600/M-4-82/020. Procedures described in EPA/600/R-93/116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and under 10% content, were automatically “Point Tested”.

ASSESSMENT

All laboratory results will be analyzed to determine the content of asbestos, if any. Based upon all applicable regulations, including quantity, condition and potential for disturbance, we will advise as to the response required for each HA that contains confirmed ACM.



611 SPRING AVE

A4

B/R II

B/R I



KITCHEN

BATH

L/R

D/R



ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

METHOD:

All analyses and quantifications are performed in accordance with the U.S. Environmental Protection Agency's "Method for the Determination of Asbestos in Bulk Building Materials", EPA/600/R-93/116. The method utilizes stereoscopic examination of bulk samples, as well as utilizing the polarized light microscope (PLM). To determine the refractive index, the central stop dispersion staining method is used, as well as matching with refractive index oil and using light matching the sodium D line wavelength. Identification of non-asbestos species is less rigorous, as they are of secondary interest.

If applicable, please be advised that the Stereo Scope/PLM methods have limitations regarding floor tile analysis for asbestos content. Historically, the production of floor tile has included the grinding of asbestos into submicroscope portions. Therefore, this method of analysis may produce incorrect results for tests of floor tile which produce negative finding for asbestos.

Gross samples are examined under a 10X or 20X stereoscope where homogeneity (need for sub-samples), texture and/or any other distinguishing characteristics are determined. Sub-samples are prepared if needed. Any fibrous material is mounted in high dispersion oil for further microscope examination utilizing PLM. Any possible asbestos fibers are analyzed for morphology, color and pleochroism, index of refraction parallel and perpendicular to elongation, birefringence, extinction characteristic and sign of elongation, and any other distinguishing characteristics observed.

The percentage of asbestos and other fibrous materials are then determined according to sample area coverage and thickness. The limit of qualification is one percent (1%). The above is recorded on the laboratory analysis sheet and maintained for three years. The error involved for reported percentages of fibrous is 100% error for 1% to 5%, 50% error for 5% to 20%, and 25% error for 20% to 100%. All percentages will be reported in a range indicating error or a single value, in which case the above error should be applied. When the value 1% or greater is reported this indicates asbestos is present in the sample.

THE REPORT:

The attached report quantifies the fibrous materials found in each sample submitted for analysis. A complete fibrous analysis of samples is given for each sample followed by a breakdown analysis of any sub-samples for heterogeneous material.

- The first column is the client sample number identification.
- The second column is the laboratory sample number. The laboratory number for the overall sample analysis is a digit number. The laboratory number followed by a letter designation (A,B,C, etc.) indicates a sub-sample analysis.
- The third column is the sample identification, which indicates whether the sample is homogeneous or heterogeneous, the color of the sample, and the physical description (cementitious, fibrous, cloth, etc.)
- The fourth column indicates the types and percentages of asbestos identified if any.
- The fifth column indicates the types and percentages of cellulose (CELL) non-asbestos identified.
- The sixth column indicates the types and percentages of non-fibrous, non-asbestos material (NON-FIB NON-ACBM) identified.
- The seventh column indicates the types and percentages of fibrous non-asbestos material (FIB NON-ACBM) in the sample or sub-sample.

SAMPLE RETENTION:

Samples will be retained for 6 months unless otherwise instructed. After this period, the sample(s) will be disposed of appropriately. Upon written request, the samples will be returned by mail or delivery for a nominal fee to cover postage and handling. There would be no charge for samples picked-up at ACM Engineering & Environmental Services.

DISCUSSION AND RECOMMENDATIONS:

In order to reduce the risk of introducing asbestos fibers into the air, care should be taken not to disturb the asbestos containing building materials. If renovation, demolition or other activities might disturb known asbestos containing building materials, a reputable asbestos consultant should be contacted to help effectively design and implement an asbestos management program.

COMPONENTS DESCRIPTION:

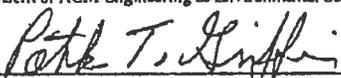
ASBESTOS MATERIALS

NON-ASBESTOS MATERIALS

A = Amosite
 AC = Actinolite
 AN = Anthophyllite
 C = Chrysotile
 CR = Crocidolite
 T = Tremolite
 --- = No Asbestos Detected

CP = Ceramic Fibers
 CO = Cotton
 G = Fibrous Glass
 H = Hair
 M = Mineral Wool
 N = Nylon
 O = Other
 S = Synthetics
 V = Vermiculite

NOTE: ACM Engineering & Environmental Services does not deviate from the test method described in this report. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items above. This report must not be reproduced, except in full, without the written consent of ACM Engineering & Environmental Services.

Report prepared by: 
Patrick T. Griffin, President/CEO
ACM Engineering & Environmental Services

**ACM ENGINEERING & ENVIRONMENTAL SERVICES**

WWW.ACMENTV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

CLIENT: Positive Energy Environmental
6700 Fleet Avenue
Cleveland, OH 44105

ANALYSIS METHOD: EPS/600/R-93-116
NVLAP LAB ID #: 101977
MATRIX: Bulk

LOCATION: 611 Spring
Canton, OH

Sample Date: N/A
Analysis Date: 09/18/13
ACM PROJECT #: 21196

CLIENT SAMPLE #	LAB SAMPLE #	SAMPLE IDENTIFICATION	ASBESTOS (%)	CELLS (%)	NON-FIB. NON-ACBM (%)	FIB. NON-ACBM (%)
1A	1310473	DUCT WRAP-BASEMENT	66% C	34%	---	---
2A	1310474	PLASTER-BEDROOM 1	---	---	96%	4% H
2B	1310475	PLASTER-BEDROOM 2	---	---	95%	5% H
2C	1310475	PLASTER-HALL	---	---	94%	6% H

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist:

Paul Malae

Title: Laboratory Director

Date: 9/18/13

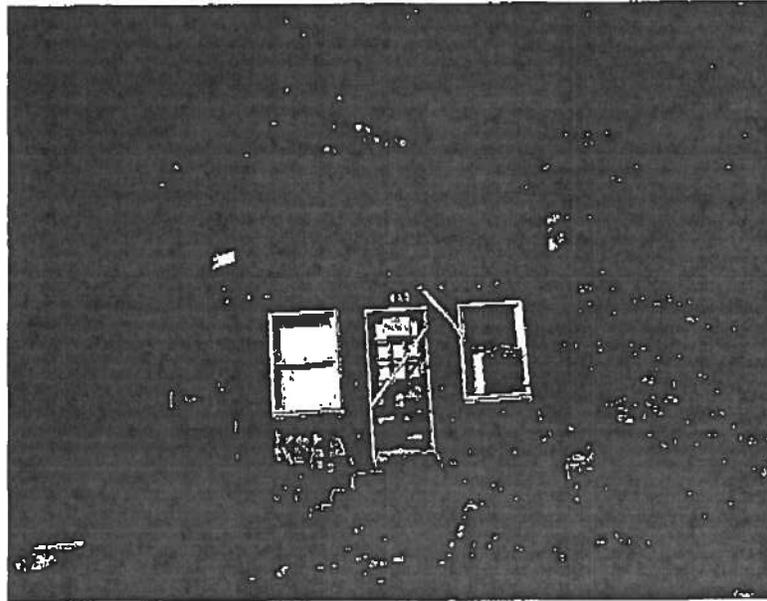
Asbestos Survey

Prepared for the City of Canton Demolition Department

For the property located at

1831 -33 Bryan SW

Canton, OH 44706



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1	EXECUTIVE SUMMARY	1
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APPENDIX C	LABORATORY SAMPLE RESULTS	C6

Provided by Positive Energy Environmental
 Prepared by Darrell Morris, Certification ES35369

18708 Van Aken Blvd.

Shaker Heights, OH 44122

Phone (216) 466 - 5295 Fax (216) 373 - 7291

alchemyschool1@yahoo.com

emanuelangela@yahoo.com

SECTION 1 – EXECUTIVE SUMMARY

Positive Energy Environmental performed an asbestos building inspection (Survey) for the City of Canton Demolition Department, on a property located at 1831-33 Bryan Avenue SW, Canton, OH 44706, pursuant to a Purchase Order for the same. These assessments are completed in order to identify any asbestos containing material (ACM) currently present in the structures.

The report will determine which ACM will require removal before renovation, demolition, or occupancy. The report also identifies “Homogenous Areas (HA), which are materials that are uniform in texture, color, date of application, use or system, and appear identical in every other respect. All determinations will be in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos.

The following is a list of the suspect building materials at the assessed premises.

Material Tested	Sample Numbers	H.A.	Locations of Material Tested	Quantity	Condition	RACM	Friable	Remove Y/N
Duct Wrapping	1A	D	Basement	40 linear ft.	P	Y	Y	Y
*Plaster	2A, 2B, 2C, 2D, 2E, 2F, 2G	A	Dining Room, Living Room, Bedroom 1, Bedroom 2, Kitchen, Bedroom 3, Bedroom 4	6000 sq. ft.	P	Y	Y	N
Asphalt Roof Shingles	Assumed	B	Entire Roof	2000 sq. ft	P	N	N	N
Vinyl Flooring	Assumed	C	Throughout Dwelling	1000 sq. ft	P	N	N	N

***All plaster has been point counted down to < 1% or no asbestos detected.**

****The structure is full of debris.**

Transite Y/N: N

Clean Out Needed Y/N: Y

SECTION 2 – SURVEY FINDINGS

The assessed property is a vacant commercial property, Permanent Parcel No. 226223 according to the Stark County Auditor's website. According to Auditor's website, the structure is a one and a half story residential, addition/conversion with a warehouse/storage space in the front, wood framed exterior. The year built is 1900. Measurements approximately 588 total square feet. Darrell Morris, Certified Asbestos Hazard Evaluation Specialist, ES35369, conducted the assessment on September 17, 2013. The weather was overcast, with a temperature of 75* F.

The samples were taken by the hand "Grab" method, containerized, labeled, and recorded on a "Chain of Custody" log, as shown in Appendix B. All sampling was done on a random basis in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos. The samples were analyzed by Polar Light Microscopy (PLM) by a NVLAP accredited laboratory. The accredited test method was EPA/600M-4-82-020. Procedures described in EPA/600/R-93116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and less than 10% content was automatically "Point Tested". Testing was halted on the "First Positive" of any one Homogenous Area. Condition qualifications are as follows:

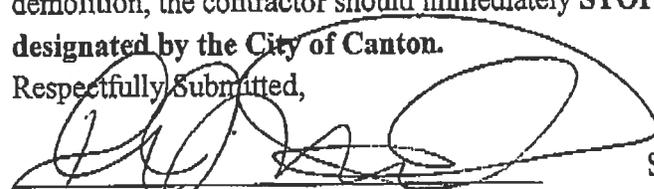
"Good" means no damage

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Certain items are "Assumed" ACM because of two reasons. Firstly, the material is clearly recognized as ACM based upon the Inspector's experience, and indicated as such. Secondly, the building material in question may be considered Non-Friable, therefore not required to be removed prior to demolition. This would occur when the matrix that may contain the ACM is considered sufficient to contain any asbestos material that may be present in the particular homogenous area. These materials are "Category I Non-Friable", like asphalt shingle roofing and floor tile. If any of these materials are in poor condition, and would likely become friable during the demolition process, then they would be categorized as Friable, and be required to be removed prior to demolition. In any case the demolition contractor must use appropriate "Wet Methods" while taking down the structure. If additional suspect ACM is found during demolition, the contractor should immediately **STOP and must call the Qualified Individual designated by the City of Canton.**

Respectfully Submitted,



Darrell Morris

Certification Number ES35369

September 20, 2013

Page 2

SECTION 3 – SCOPE OF SERVICES

IDENTIFICATION

A visual inspection is conducted, in all accessible areas of the building(s), for the presence of suspect Asbestos Containing Materials (ACM). Materials with the same color, texture, date of application, system, or use are considered in the same Homogenous Area (HA).

DETECTION

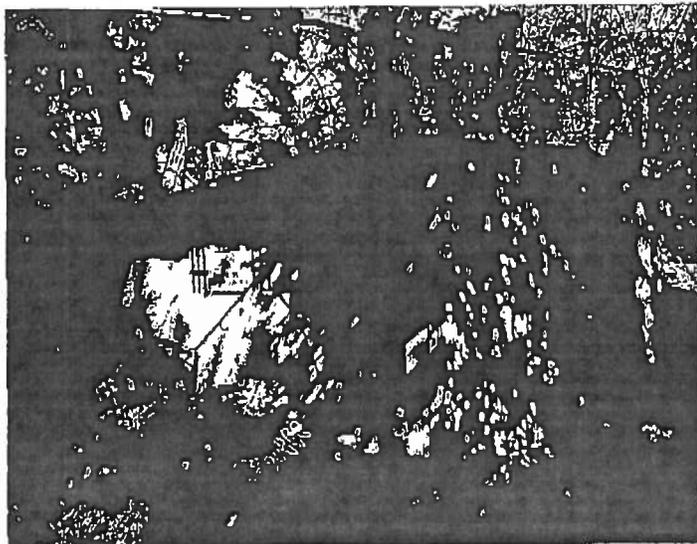
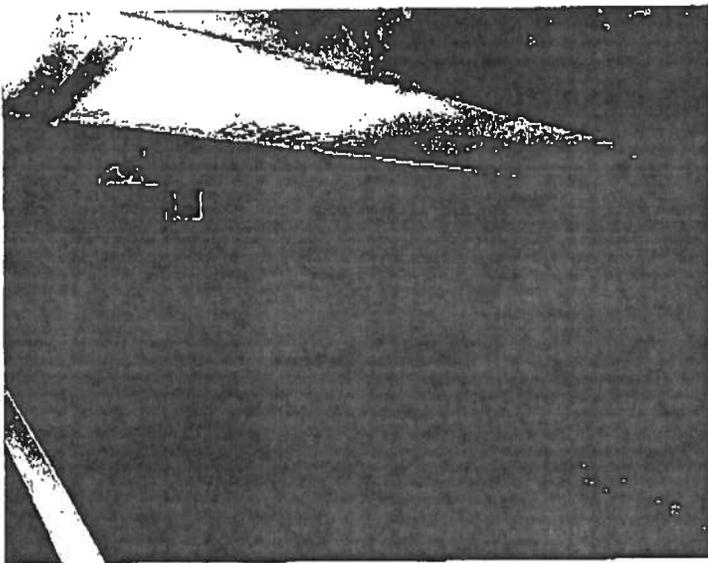
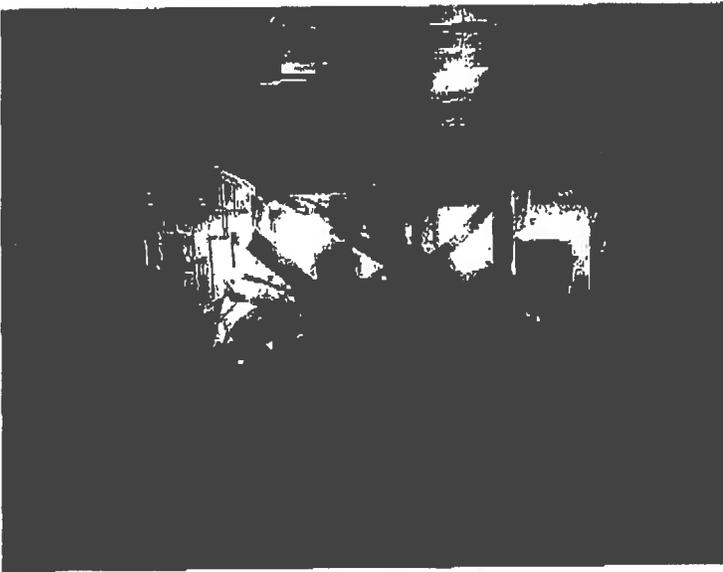
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ASSESSMENT

All laboratory results will be analyzed to determine the content of asbestos, if any. Based upon all applicable regulations, including quantity, condition and potential for disturbance, we will advise as to the response required for each HA that contains confirmed ACM.



B/R I

B/R II

KITCHEN

BATH

L/R

D/R

STORE FRONT

B5



ACM ENGINEERING & ENVIRONMENTAL SERVICES

WWW.ACMEV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

METHOD:

All analyses and quantifications are performed in accordance with the U.S. Environmental Protection Agency's "Method for the Determination of Asbestos in Bulk Building Materials", EPA/600/R-93/116. The method utilizes stereoscopic examination of bulk samples, as well as utilizing the polarized light microscope (PLM). To determine the refractive index, the central stop dispersion staining method is used, as well as matching with refractive index oil and using light matching the sodium D line wavelength. Identification of non-asbestos species is less rigorous, as they are of secondary interest.

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- The sixth column indicates the types and percentages of non-fibrous, non-asbestos material (NON -FIB NON-ACBM) identified.
- The seventh column indicates the types and percentages of fibrous non-asbestos material (FIB NON ACBM) in the sample or sub-sample.

SAMPLE RETENTION:

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DISCUSSION AND RECOMMENDATIONS:

In order to reduce the risk of introducing asbestos fibers into the air, care should be taken not to disturb the asbestos containing building materials. If renovation, demolition or other activities might disturb known asbestos containing building materials, a reputable asbestos consultant should be contacted to help effectively design and implement an asbestos management program.

COMPONENTS DESCRIPTION:

ASBESTOS MATERIALS

NON-ASBESTOS MATERIALS

A = Amosite
 AC = Actinolite
 AN = Anthophyllite
 C = Chrysotile
 CR = Crocidolite
 T = Tremolite
 --- = No Asbestos Detected

CP = Ceramic Fibers
 CO = Cotton
 G = Fibrous Glass
 H = Hair
 M = Mineral Wool
 N = Nylon
 O = Other
 S = Synthetics
 V = Vermiculite

NOTE: ACM Engineering & Environmental Services does not deviate from the test method described in this report. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items above. This report must not be reproduced, except in full, without the written consent of ACM Engineering & Environmental Services.

Report prepared by: Patrick T. Griffin
 Patrick T. Griffin, President/CEO
 ACM Engineering & Environmental Services

BS

ACM Engineering & Environmental Services, Inc.

26598 US 20 West
South Bend, Indiana 46628
Phone (574) 234-8435
Fax (574) 234-6800

Suspect Asbestos Containing Building Material
Sampling - Chain-of-Custody - Analysis Request Form

ACM Project #

21190

Client: Positive Energy Environmental

Billing Address: 55 Erieview Plaza

Billing City, State, Zip: Cleveland, OH 44120

Email Results To: alchemyschool@e.yando.com



Sampling Date: _____

Sampled By: NVLAQ

Site Location: 1838-33 Bryan

Address: Chardon Ohio

Type of Project: Demolition

Requested Turn Around Time: Normal

Reference Number: _____

Sample Identification	Sample Type (Bulk, Wipe, Other)	Sample Description	Sample Location	Requested Analysis; Instructions / Comments
1A	Bulk	Duct work	Basement	PLM, PC
2A		Plaster	Dining Room	
2B			Living Room	
2C			BIR I	
2D			BIR II	
2E			Kitchen	
2F			BIR III	
2G			BIR IV	

Submitted by: (sign) [Signature] (print) Darrell Morris Date Submitted: 9/17/13

Received by: (sign) [Signature] (print) Traci Date and time received: _____
 (For lab use only) Samples processed by: [Signature] Date: 2/18/13 Time: From _____ am/pm to 11:00 am/pm

C6



ACM ENGINEERING & ENVIRONMENTAL SERVICES

WWW.ACMENV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

CLIENT: Positive Energy Environmental
6700 Fleet Avenue
Cleveland, OH 44105

ANALYSIS METHOD: EPS/600/R-93-116
NVLAP LAB ID #: 101977
MATRIX: Bulk

LOCATION: 1831-33 Bryan
Canton, OH

Sample Date: N/A
Analysis Date: 09/18/13
ACM PROJECT #: 21190

OBJECTIVE SAMPLE	LAB# SAMPLE#	SAMPLE LOCATION/DESCRIPTION	ASBESTOS (%)	CHLORIDE (%)	NON-ASBESTOS (%)	NON-CHLORIDE (%)
1A	1310425	DUCT WRAP-BASEMENT	65% C	35%	---	---
2A	1310426	PLASTER-DINING ROOM	2% C	---	92%	6% H
2B	1310427	PLASTER-LIVING ROOM	2% C	---	94%	4% H
2C	1310428	PLASTER-BEDROOM 1	1% C	---	93%	6% H
2D	1310429	PLASTER-BEDROOM 2	2% C	---	93%	5% H
2E	1310430	PLASTER-KITCHEN	1% C	---	92%	7% H
2F	1310431	PLASTER-BEDROOM 3	2% C	---	92%	6% H
2G	1310432	PLASTER-BEDROOM 4	2% C	---	91%	7% H

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist: Janey Malow Title: Laboratory Director Date: 9/18/13

Cb

POINT COUNTING ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

CLIENT: POSITIVE ENERGY
6700 FLEET AVE
CLEVELAND, OH 44105

ANALYTICAL METHOD: EPA 40CFR61
PT. 763 SUBPART E, APPENDIX E
POLARIZED LIGHT MICROSCOPY - POINT COUNTING

CLIENT PROJECT: 1831-33 BYRON
CANTON, OH

NVLAP LAB CODE #: 101977

DATE OF SAMPLE: N/A

DATE OF ANALYSIS: 09/19/13

SAMPLE SITE: RESIDENCE
1831-33 *Bryan*
CANTON, OH

ACM PROJECT #: 21190

CLIENT SAMPLE NUMBER	LAB SAMPLE NUMBER	# OF SLIDES	ASBESTOS CONCENTRATION BY POINT COUNTING	AVERAGE CONCENTRATION OF ASBESTOS PERCENTAGE
2A	1310426	8	1/400	<1% ASBESTOS
2B	1310427	8	1/400	<1% ASBESTOS
2C	1310428	8	0/400	NO ASBESTOS DETECTED
2D	1310429	8	0/400	NO ASBESTOS DETECTED
2E	1310430	8	0/400	NO ASBESTOS DETECTED
2F	1310431	8	0/400	NO ASBESTOS DETECTED
2G	1310432	8	1/400	<1% ASBESTOS

MICROSCOPIST: *Joseph Malan*

DATE: 9/19/13

ACM ENGINEERING & ENVIRONMENTAL SERVICES 28598 US 20 WEST, SOUTH BEND, INDIANA 46628
TELEPHONE (574) 234-8435 FAX (574) 234-6800

Asbestos Survey

Prepared for the City of Canton Demolition Department
 For the property located at
 1201 Fulton Road NW
 Canton, OH 44703



SECTION	CONTENT	PAGE
1	EXECUTIVE SUMMARY	1
2	SURVEY FINDINGS	2
3	SCOPE OF SERVICES	3
SECTION	APPENDICES	PAGE
APPENDIX A	DRAWINGS	A4
APPENDIX B	CHAIN OF CUSTODY FORMS	B5
APPENDIX C	LABORATORY SAMPLE RESULTS	C6

Provided by Positive Energy Environmental
 Prepared by Darrell Morris, Certification ES35369
 18708 Van Aken Blvd.
 Shaker Heights, OH 44122
 Phone (216) 466 – 5295 Fax (216) 373 – 7291
alchemyschool1@yahoo.com
emanuelangela@yahoo.com

SECTION 1 – EXECUTIVE SUMMARY

Positive Energy Environmental performed an asbestos building inspection (Survey) for the City of Canton Demolition Department, on a property located at 1201 Fulton Road NW, Canton, OH 44703, pursuant to a Purchase Order for the same. These assessments are completed in order to identify any asbestos containing material (ACM) currently present in the structures.

The report will determine which ACM will require removal before renovation, demolition, or occupancy. The report also identifies "Homogenous Areas (HA), which are materials that are uniform in texture, color, date of application, use or system, and appear identical in every other respect. All determinations will be in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos.

The following is a list of the suspect building materials at the assessed premises.

Material Tested	Sample Numbers	H.A.	Locations of Material Tested	Quantity	Condition	RACM	Friable	Remove Y/N
*Plaster	1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I, 1J, 1K, 1L, 1M	A	Living Room, Dining Room, Kitchen, Bathroom, Bedroom 1, Living Room 2, Dining Room 2, Kitchen 2, Bathroom 2, Bedroom 1(2 nd Fl), Office Space	5000 sq. ft.	F	Y	Y	N
Asphalt Roof Shingles	Assumed	B	Entire Roof	3000 sq. ft.	F	N	N	N
Vinyl Flooring	Assumed	C	Throughout Dwelling	1000 sq. ft.	F	N	N	N

***All plaster has been point counted down to < 1% or no asbestos detected.**

Transite Y/N: N

Clean Out Needed Y/N: N

SECTION 2 – SURVEY FINDINGS

The assessed property is a vacant commercial property, Permanent Parcel No. 246240 according to the Stark County Auditor's website. According to Auditor's website, the structure two story office/general, brick on masonry structure. There are two apartment units above the office spaces. The year built is 1931. Measurements approximately 4,666 total square feet. Darrell Morris, Certified Asbestos Hazard Evaluation Specialist, ES35369, conducted the assessment on September 17, 2013. The weather was overcast, with a temperature of 75* F.

The samples were taken by the hand "Grab" method, containerized, labeled, and recorded on a "Chain of Custody" log, as shown in Appendix B. All sampling was done on a random basis in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos. The samples were analyzed by Polar Light Microscopy (PLM) by a NVLAP accredited laboratory. The accredited test method was EPA/600M-4-82-020. Procedures described in EPA/600/R-93116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and less than 10% content was automatically "Point Tested". Testing was halted on the "First Positive" of any one Homogenous Area. Condition qualifications are as follows:

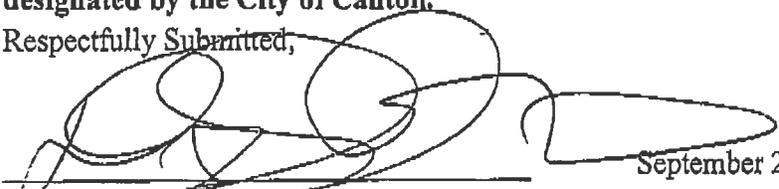
"Good" means no damage

"Fair" means up to 10% overall damage and up to 25% localized damage

"Poor" means over 10% overall damage and over 25% localized damage

Certain items are "Assumed" ACM because of two reasons. Firstly, the material is clearly recognized as ACM based upon the Inspector's experience, and indicated as such. Secondly, the building material in question may be considered Non-Friable, therefore not required to be removed prior to demolition. This would occur when the matrix that may contain the ACM is considered sufficient to contain any asbestos material that may be present in the particular homogenous area. These materials are "Category I Non-Friable", like asphalt shingle roofing and floor tile. If any of these materials are in poor condition, and would likely become friable during the demolition process, then they would be categorized as Friable, and be required to be removed prior to demolition. In any case the demolition contractor must use appropriate "Wet Methods" while taking down the structure. If additional suspect ACM is found during demolition, the contractor should immediately **STOP and must call the Qualified Individual designated by the City of Canton.**

Respectfully Submitted,



Darrell Morris

September 20, 2013

Certification Number ES35369

Page 2

SECTION 3 – SCOPE OF SERVICES

IDENTIFICATION

A visual inspection is conducted, in all accessible areas of the building(s), for the presence of suspect Asbestos Containing Materials (ACM). Materials with the same color, texture, date of application, system, or use are considered in the same Homogenous Area (HA).

DETECTION

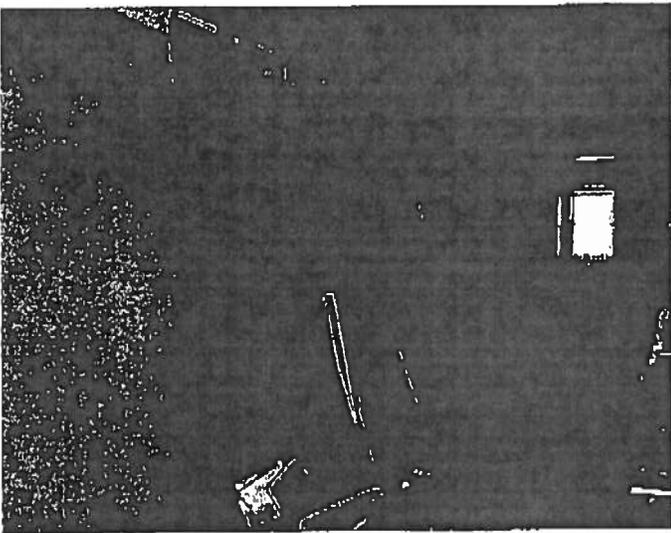
The number and location of samples required for each HA will be determined. a drawing of the facility will be provided showing each sample taken. If determined necessary, sample locations will be marked in the field. Digital images will be taken of any areas deemed necessary by the Qualified Inspector.

Samples taken by a Qualified Individual, who has the requisite licensing/certification for the state in which sampling is taking place. The samples will be containerized, labeled, and recorded on a "Chain of Custody Form" for proper documentation. While sampling, all precautions will be taken to protect the health and safety of all workers, and any individual that might have access to the sampling areas.

Samples will be submitted to a qualified laboratory for testing. The samples will be analyzed by Polar Light Microscopy (PLM). The accredited test method will be EPA/600/M-4-82/020. Procedures described in EPA/600/R-93/116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and under 10% content, were automatically "Point Tested".

ASSESSMENT

All laboratory results will be analyzed to determine the content of asbestos, if any. Based upon all applicable regulations, including quantity, condition and potential for disturbance, we will advise as to the response required for each HA that contains confirmed ACM.



unit 1

1201

FW. NO. 3304

SP. 6 NW MS 40

KITCHEN

BATH

unit 2

BATH

KITCHEN

B/R I

D/R

B/R I

B/R

L/R

L/R

STORE 1

STORE 2

DN

BAY

OFFICE SPACE

OFFICE SPACE

BAY

OPEN SPACE

BAY

BS



ACM ENGINEERING & ENVIRONMENTAL SERVICES

WWW.ACMENV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

F: (574)234-8435 F: (574)234-6800

ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

METHOD:

All analyses and quantifications are performed in accordance with the U.S. Environmental Protection Agency's "Method for the Determination of Asbestos in Bulk Building Materials", EPA/600/R-93/116. The method utilizes stereoscopic examination of bulk samples, as well as utilizing the polarized light microscope (PLM). To determine the refractive index, the central stop dispersion staining method is used, as well as matching with refractive index oil and using light matching the sodium D line wavelength. Identification of non-asbestos species is less rigorous, as they are of secondary interest.

If applicable, please be advised that the Sterco Scope/PLM methods have limitations regarding floor tile analysis for asbestos content. Historically, the production of floor tile has included the grinding of asbestos into submicroscopic portions. Therefore, this method of analysis may produce incorrect results for tests of floor tile which produce negative finding for asbestos.

Gross samples are examined under a 10X or 20X stereoscope where homogeneity (need for sub-samples), texture and /or any other distinguishing characteristics are determined. Sub-samples are prepared if needed. Any fibrous material is mounted in high dispersion oil for further microscope examination utilizing PLM. Any possible asbestos fibers are analyzed for morphology, color and pleochroism, index of refraction parallel and perpendicular to elongation, birefringence, extinction characteristic and sign of elongation, and any other distinguishing characteristics observed.

The percentage of asbestos and other fibrous materials are then determined according to sample area coverage and thickness. The limit of qualification is one percent (1%). The above is recorded on the laboratory analysis sheet and maintained for three years. The error involved for reported percentages of fibrous is 100% error for 1% to 5%, 50% error for 5% to 20%, and 25% error for 20% to 100%. All percentages will be reported in a range indicating error or a single value, in which case the above error should be applied. When the value 1% or greater is reported this indicates asbestos is present in the sample.

THE REPORT:

The attached report quantifies the fibrous materials found in each sample submitted for analysis. A complete fibrous analysis of samples is given for each sample followed by a breakdown analysis of any sub-samples for heterogeneous material.

- The first column is the client sample number identification.
- The second column is the laboratory sample number. The laboratory number for the overall sample analysis is a digit number. The laboratory number followed by a letter designation (A,B,C, etc.) indicates a sub-sample analysis.
- The third column is the sample identification, which indicates whether the sample is homogeneous or heterogeneous, the color of the sample, and the physical description (cementitious, fibrous, cloth, etc.)
- The fourth column indicates the types and percentages of asbestos identified if any.
- The fifth column indicates the types and percentages of cellulose (CELL) non-asbestos identified.
- The sixth column indicates the types and percentages of non-fibrous, non-asbestos material (NON -FIB NON-ACBM) identified.
- The seventh column indicates the types and percentages of fibrous non-asbestos material (FIB NON ACBM) in the sample or sub-sample.

SAMPLE RETENTION:

Samples will be retained for 6 months unless otherwise instructed. After this period, the sample(s) will be disposed of appropriately. Upon written request, the samples will be returned by mail or delivery for a nominal fee to cover postage and handling. There would be no charge for samples picked-up at ACM Engineering & Environmental Services.

DISCUSSION AND RECOMMENDATIONS:

In order to reduce the risk of introducing asbestos fibers into the air, care should be taken not to disturb the asbestos containing building materials. If renovation, demolition or other activities might disturb known asbestos containing building materials, a reputable asbestos consultant should be contacted to help effectively design and implement an asbestos management program.

COMPONENTS DESCRIPTION:

ASBESTOS MATERIALS

NON-ASBESTOS MATERIALS

- A = Amosite
- AC = Actinolite
- AN = Anthophyllite
- C = Chrysotile
- CR = Crocidolite
- T = Tremolite
- = No Asbestos Detected

- CF = Ceramic Fibers
- CO = Cotton
- G = Fibrous Glass
- H = Hair
- M = Mineral Wool
- N = Nylon
- O = Other
- S = Synthetics
- V = Vermiculite

NOTE: ACM Engineering & Environmental Services does not deviate from the test method described in this report. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items above. This report must not be reproduced, except in full, without the written consent of ACM Engineering & Environmental Services.

Report prepared by: Patrick T. Griffin
Patrick T. Griffin, President/CEO
ACM Engineering & Environmental Services

BS

ACM Engineering & Environmental Services, Inc.

Suspect Asbestos Containing Building Material
Sampling - Chain-of-Custody - Analysis Request Form

26598 US 20 West
South Bend, Indiana 46628
Phone (574) 234-8435
Fax (574) 234-6800

Client: Positive Energy Environmental
Billing Address: 55 Erieview Plaza
Billing City, State, Zip: Cleveland, OH 44120
Email Results To: alchemy@school16.yando.com



NVLAP

ACM Project #

21197

Site Location: 201 Falcon
Address: Canton, OH
Type of Project: Demolition
Requested Turn Around Time: Normal
Reference Number:

Sampled By:

Sample Identification	Sample Type (Bulk, Wipe, Other)	Sample Description	Sample Location	Requested Analysis; Instructions / Comments
1A	Bulk	Plaster	Appt Living Room	PLMPC
1B			Dining Room	
1C			Kitchen	
1D			Bath	
1E			B/R I	
1F			Appt Living Room	
1G			Dining Room	
1H			Kitchen	
1I			Bath	
1J			B/R I	
1K			Office Space	
1L			Office Space	

Submitted by: (sign)

Received by: (sign)

(print) DAVID MORRIS

(print)

Date Submitted: 9/18/13

Date and time received:

Date: 9/18/13 Time: From 11:10 and/pm to 11:10 and/pm

Samples processed by: DAVID MORRIS

C6



ACM ENGINEERING & ENVIRONMENTAL SERVICES

WWW.ACMENV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

CLIENT: Positive Energy Environmental
6700 Fleet Avenue
Cleveland, OH 44105

ANALYSIS METHOD: EPS/600/R-93-116
NVLAP LAB ID #: 101977
MATRIX: Bulk

LOCATION: 1201 Fulton
Canton, OH

Sample Date: N/A
Analysis Date: 09/18/13
ACM PROJECT #: 21191

CLIENT SAMPLE #	LAB NUMBER	SAMPLE IDENTIFICATION	ASBESTOS (CELL)	NON-ROCK FOR ACM	RIR NON-ROCK
1A	1310433	PLASTER-APT#1 LIVING ROOM	3% C	94%	3% H
1B	1310434	PLASTER-APT#1 DINING ROOM	2% C	94%	4% H
1C	1310435	PLASTER-APT#1 KITCHEN	2% C	95%	3% H
1D	1310436	PLASTER-APT#1 BATHROOM	3% C	95%	2% H
1E	1310437	PLASTER-APT#1 BEDROOM 1	2% C	93%	5% H
1F	1310438	PLASTER-APT#1 LIVING ROOM	2% C	93%	5% H
1G	1310439	PLASTER-APT#1 DINING ROOM	3% C	91%	6% H
1H	1310440	PLASTER-APT#1 KITCHEN	3% C	93%	4% H
1I	1310441	PLASTER-APT#1 BATHROOM	2% C	94%	4% H
1J	1310442	PLASTER-APT#1 BEDROOM 1	---	93%	---
1K	1310443	PLASTER-OFFICE SPACE	---	91%	---
1L	1310444	PLASTER-OFFICE SPACE	---	92%	---
1M	1310445	PLASTER-OFFICE SPACE	---	93%	---

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist:

Jamie Malau

Title: Laboratory Director

Date: 9/18/13

CL6

POINT COUNTING ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

CLIENT: POSITIVE ENERGY
6700 FLEET AVE
CLEVELAND, OH 44105

ANALYTICAL METHOD: EPA 40CFR81
PT. 763 SUBPART E, APPENDIX E
POLARIZED LIGHT MICROSCOPY - POINT COUNTING

CLIENT PROJECT: 1201 FULTON
CANTON, OH

NVLAP LAB CODE #: 101977

DATE OF SAMPLE: N/A

DATE OF ANALYSIS: 09/19/13

SAMPLE SITE: RESIDENCE
1201 FULTON
CANTON, OH

ACM PROJECT #: 21191

CLIENT SAMPLE NUMBER	LAB SAMPLE NUMBER	# OF SLIDES	ASBESTOS CONCENTRATION BY POINT COUNTING	AVERAGE CONCENTRATION OF ASBESTOS PERCENTAGE
1A	1310433	8	0/400	NO ASBESTOS DETECTED
1B	1310434	8	0/400	NO ASBESTOS DETECTED
1C	1310435	8	0/400	NO ASBESTOS DETECTED
1D	1310436	8	1/400	<1% ASBESTOS
1E	1310437	8	0/400	NO ASBESTOS DETECTED
1F	1310438	8	0/400	NO ASBESTOS DETECTED
1G	1310439	8	1/400	<1% ASBESTOS
1H	1310440	8	1/400	<1% ASBESTOS
1I	1310441	8	0/400	NO ASBESTOS DETECTED

MICROSCOPIST:

Janey Malone

DATE:

9/19/13

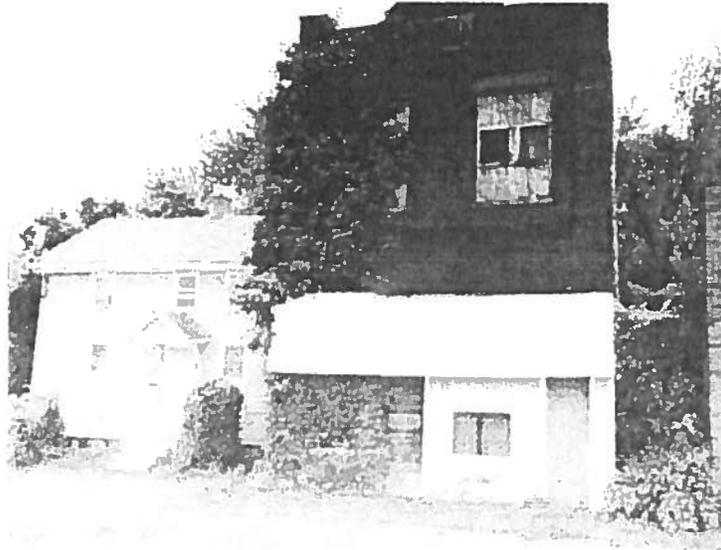
ACM ENGINEERING & ENVIRONMENTAL SERVICES 26598 US 20 WEST, SOUTH BEND, INDIANA 46628
TELEPHONE (574) 234-8435 FAX (574) 234-6800

Asbestos Survey

Prepared for the City of Canton Demolition Department

For the property located at
1236 East Tuscarawas Street

Canton, OH 44707



SECTION	CONTENT	PAGE
1	EXECUTIVE SUMMARY	1
2	SURVEY FINDINGS	2
3	SCOPE OF SERVICES	3
SECTION	APPENDICES	PAGE
APPENDIX A	DRAWINGS	A4
APPENDIX B	CHAIN OF CUSTODY FORMS	B5
APPENDIX C	LABORATORY SAMPLE RESULTS	C6

Provided by Positive Energy Environmental
Prepared by Darrell Morris, Certification ES35369
18708 Van Aken Blvd.
Shaker Heights, OH 44122
Phone (216) 466 – 5295 Fax (216) 373 – 7291
dchemysci@oh1a.yahoo.com
emmacielan@oh1a.yahoo.com

SECTION 1 – EXECUTIVE SUMMARY

Positive Energy Environmental performed an asbestos building inspection (Survey) for the City of Canton Demolition Department, on a property located at 1236 E Tuscarawas Street, Canton, OH 44707, pursuant to a Purchase Order for the same. These assessments are completed in order to identify any asbestos containing material (ACM) currently present in the structures.

The report will determine which ACM will require removal before renovation, demolition, or occupancy. The report also identifies “Homogenous Areas (HA), which are materials that are uniform in texture, color, date of application, use or system, and appear identical in every other respect. All determinations will be in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos.

The following is a list of the suspect building materials at the assessed premises.

Material Tested	Sample Numbers	H.A.	Locations of Material Tested	Quantity	Condition	RACM	Friable	Remove Y/N
Plaster	1A, 1B, 1C	A	Hallway, Hallway, Hallway	1000 sq. ft.	P	N	Y	N
Asphalt Roof Shingles	Assumed	B	Entire Roof	2500 sq. ft	P	N	N	N
Vinyl Flooring	Assumed	C	Throughout Dwelling	2500 sq. ft	P	N	N	N

****PROPERTY IS UNSAFE TO ENTER, ALL FLOORS HAVE COLLAPSED, PROCEED WITH CAUTION****

Transite Y/N: N

Clean Out Needed Y/N: Y

SECTION 2 – SURVEY FINDINGS

The assessed property is a vacant apartment, over commercial property, Permanent Parcel No. 218993 according to the Stark County Auditor's website. According to Auditor's website, the structure is a two story, brick on masonry structure. The year built is 1919. Measurements approximate 3358 total square feet. Darrell Morris, Certified Asbestos Hazard Evaluation Specialist, ES35369, conducted the assessment on September 17, 2013. The weather was overcast, with a temperature of 75* F.

The samples were taken by the hand "Grab" method, containerized, labeled, and recorded on a "Chain of Custody" log, as shown in Appendix B. All sampling was done on a random basis in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos. The samples were analyzed by Polar Light Microscopy (PLM) by a NVLAP accredited laboratory. The accredited test method was EPA/600M-4-82-020. Procedures described in EPA/600/R-93116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and less than 10% content was automatically "Point Tested". Testing was halted on the "First Positive" of any one Homogenous Area. Condition qualifications are as follows:

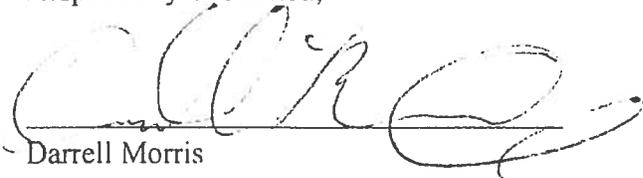
"Good" means no damage

"Fair" means up to 10% overall damage and up to 25% localized damage

"Poor" means over 10% overall damage and over 25% localized damage

Certain items are "Assumed" ACM because of two reasons. Firstly, the material is clearly recognized as ACM based upon the Inspector's experience, and indicated as such. Secondly, the building material in question may be considered Non-Friable, therefore not required to be removed prior to demolition. This would occur when the matrix that may contain the ACM is considered sufficient to contain any asbestos material that may be present in the particular homogenous area. These materials are "Category I Non-Friable", like asphalt shingle roofing and floor tile. If any of these materials are in poor condition, and would likely become friable during the demolition process, then they would be categorized as Friable, and be required to be removed prior to demolition. In any case the demolition contractor must use appropriate "Wet Methods" while taking down the structure. If additional suspect ACM is found during demolition, the contractor should immediately **STOP and must call the Qualified Individual designated by the City of Canton.**

Respectfully Submitted,



Darrell Morris

September 18, 2013

Certification Number ES35369

SECTION 3 – SCOPE OF SERVICES

IDENTIFICATION

A visual inspection is conducted, in all accessible areas of the building(s), for the presence of suspect Asbestos Containing Materials (ACM). Materials with the same color, texture, date of application, system, or use are considered in the same Homogenous Area (HA).

DETECTION

The number and location of samples required for each HA will be determined. A drawing of the facility will be provided showing each sample taken. If determined necessary, sample locations will be marked in the field. Digital images will be taken of any areas deemed necessary by the Qualified Inspector.

Samples taken by a Qualified Individual, who has the requisite licensing/certification for the state in which sampling is taking place. The samples will be containerized, labeled, and recorded on a "Chain of Custody Form" for proper documentation. While sampling, all precautions will be taken to protect the health and safety of all workers, and any individual that might have access to the sampling areas.

Samples will be submitted to a qualified laboratory for testing. The samples will be analyzed by Polar Light Microscopy (PLM). The accredited test method will be EPA/600/M-4-82/020. Procedures described in EPA/600/R-93/116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and under 10% content, were automatically "Point Tested".

ASSESSMENT

All laboratory results will be analyzed to determine the content of asbestos, if any. Based upon all applicable regulations, including quantity, condition and potential for disturbance, we will advise as to the response required for each HA that contains confirmed ACM.



Positive Energy Environmental

6700 Fleet Avenue

Cleveland, OH 44105

Ph: (216) 466-5295 Fax: (216) 373-7291

Date: 9/18/13

RE: 1236 East Tuscarawas
Canton, OH 44707

When performing the asbestos survey on this structure, the inspector was only able to access the front hallway of the structure. The front stairwell was collapsing and did not allow for access.

The structure had deplorable conditions that made the building unsafe for a full inspection. The roof has collapsed onto the 2nd floor, and the 2nd floor has collapsed onto the 1st floor of the structure.

The structure is unsafe to enter, if entering please proceed with extreme caution.

If there are any additional questions about this structure, please feel free to contact us. Thank you.

Sincerely,
Darrell Morris
Certification Number: ES35369



1234 EAST FUSCHER WAS ST.

A11

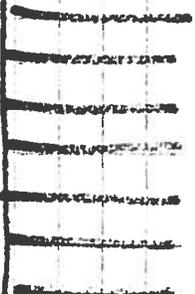
OPEN SPACE

DO NOT ENTER

STAIR CHASE

OPEN SPACE

DO NOT ENTER





ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

METHOD:

All analyses and quantifications are performed in accordance with the U.S. Environmental Protection Agency's "Method for the Determination of Asbestos in Bulk Building Materials", EPA/600/R-93/116. The method utilizes stereoscopic examination of bulk samples, as well as utilizing the polarized light microscope (PLM). To determine the refractive index, the central stop dispersion staining method is used, as well as matching with refractive index oil and using light matching the sodium D line wavelength. Identification of non-asbestos species is less rigorous, as they are of secondary interest.

If applicable, please be advised that the Stereo Scope/PLM methods have limitations regarding floor tile analysis for asbestos content. Historically, the production of floor tile has included the grinding of asbestos into submicroscopic portions. Therefore, this method of analysis may produce incorrect results for tests of floor tile which produce negative finding for asbestos.

Gross samples are examined under a 10X or 20X stereoscope where homogeneity (need for sub-samples), texture and /or any other distinguishing characteristics are determined. Sub-samples are prepared if needed. Any fibrous material is mounted in high dispersion oil for further microscope examination utilizing PLM. Any possible asbestos fibers are analyzed for morphology, color and pleochroism, index of refraction parallel and perpendicular to elongation, birefringence, extinction characteristic and sign of elongation, and any other distinguishing characteristics observed.

The percentage of asbestos and other fibrous materials are then determined according to sample area coverage and thickness. The limit of qualification is one percent (1%). The above is recorded on the laboratory analysis sheet and maintained for three years. The error involved for reported percentages of fibrous is 100% error for 1% to 5%, 50% error for 5% to 20%, and 25% error for 20% to 100%. All percentages will be reported in a range indicating error or a single value, in which case the above error should be applied. When the value 1% or greater is reported this indicates asbestos is present in the sample.

THE REPORT:

The attached report quantifies the fibrous materials found in each sample submitted for analysis. A complete fibrous analysis of samples is given for each sample followed by a breakdown analysis of any sub-samples for heterogeneous material.

- The first column is the client sample number identification.
- The second column is the laboratory sample number. The laboratory number for the overall sample analysis is a digit number. The laboratory number followed by a letter designation (A,B,C, etc.) indicates a sub-sample analysis.
- The third column is the sample identification, which indicates whether the sample is homogeneous or heterogeneous, the color of the sample, and the physical description (cementitious, fibrous, cloth, etc.)
- The fourth column indicates the types and percentages of asbestos identified if any.
- The fifth column indicates the types and percentages of cellulose (CELL) non-asbestos identified.
- The sixth column indicates the types and percentages of non-fibrous, non-asbestos material (NON-FIB NON-ACBM) identified.
- The seventh column indicates the types and percentages of fibrous non-asbestos material (FIB NON-ACBM) in the sample or sub-sample.

SAMPLE RETENTION:

Samples will be retained for 6 months unless otherwise instructed. After this period, the sample(s) will be disposed of appropriately. Upon written request, the samples will be returned by mail or delivery for a nominal fee to cover postage and handling. There would be no charge for samples picked-up at ACM Engineering & Environmental Services.

DISCUSSION AND RECOMMENDATIONS:

In order to reduce the risk of introducing asbestos fibers into the air, care should be taken not to disturb the asbestos containing building materials. If renovation, demolition or other activities might disturb known asbestos containing building materials, a reputable asbestos consultant should be contacted to help effectively design and implement an asbestos management program.

COMPONENTS DESCRIPTION:

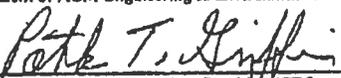
ASBESTOS MATERIALS

NON-ASBESTOS MATERIALS

A = Amosite
 AC = Actinolite
 AN = Anthophyllite
 C = Chrysotile
 CR = Crocidolite
 T = Tremolite
 --- = No Asbestos Detected

CF = Ceramic Fibers
 CO = Cotton
 G = Fibrous Glass
 H = Hair
 M = Mineral Wool
 N = Nylon
 O = Other
 S = Synthetics
 V = Vermiculite

NOTE: ACM Engineering & Environmental Services does not deviate from the test method described in this report. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items above. This report must not be reproduced, except in full, without the written consent of ACM Engineering & Environmental Services.

Report prepared by: 
 Patrick T. Griffin, President/CEO
 ACM Engineering & Environmental Services



ACM ENGINEERING & ENVIRONMENTAL SERVICES

WWW.ACMENTV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

CLIENT: Positive Energy Environmental
6700 Fleet Avenue
Cleveland, OH 44105

ANALYSIS METHOD: EPS/600/R-93-116
NVLAP LAB ID #: 101977
MATRIX: Bulk

LOCATION: 1236 E. Tuscarwas
Canton, OH

Sample Date: N/A
Analysis Date: 09/18/13
ACM PROJECT #: 21192

CLIENT SAMPLE	LAB NUM	SAMPLE IDENTIFICATION	ASBESTOS	CELL	NONFIB NON ACBM	FIB NON ACBM
1A	1310446	PLASTER-HALLWAY	---	---	95%	5% H
1B	1310447	PLASTER-HALLWAY	----	----	94%	6% H
1C	1310448	PLASTER-HALLWAY	----	----	94%	6% H

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist: Jamy Malaw Title: Laboratory Director Date: 9/18/13

Asbestos Survey

Prepared for the City of Canton Demolition Department
 For the property located at
 745 Ross Avenue NE
 Canton, OH 44704



SECTION	CONTENT	PAGE
1	EXECUTIVE SUMMARY	1
2	SURVEY FINDINGS	2
3	SCOPE OF SERVICES	3
SECTION	APPENDICES	PAGE
APPENDIX A	DRAWINGS	A4
APPENDIX B	CHAIN OF CUSTODY FORMS	B5
APPENDIX C	LABORATORY SAMPLE RESULTS	C6

Provided by Positive Energy Environmental
 Prepared by Darrell Morris, Certification ES35369
 18708 Van Aken Blvd.
 Shaker Heights, OH 44122
 Phone (216) 466 – 5295 Fax (216) 373 – 7291
alchemyschool1@yahoo.com
emanuelangela@yahoo.com

SECTION 1 – EXECUTIVE SUMMARY

Positive Energy Environmental performed an asbestos building inspection (Survey) for the City of Canton Demolition Department, on a property located at 745 Ross Avenue NE, Canton, OH 44704, pursuant to a Purchase Order for the same. These assessments are completed in order to identify any asbestos containing material (ACM) currently present in the structures.

The report will determine which ACM will require removal before renovation, demolition, or occupancy. The report also identifies "Homogenous Areas (HA), which are materials that are uniform in texture, color, date of application, use or system, and appear identical in every other respect. All determinations will be in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos.

The following is a list of the suspect building materials at the assessed premises.

Material Tested	Sample Numbers	H.A.	Locations of Material Tested	Quantity	Condition	RACM	Friable	Remove Y/N
Duct Wrapping	1A	D	Basement	50 linear ft.	P	Y	Y	Y
*Plaster	2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H	A	Dining Room, Living Room, Bedroom 1, Bedroom 2, Kitchen, Bedroom 3, Hall	4000 sq. ft.	P	Y	Y	N
Asphalt Roof Shingles	Assumed	B	Entire Roof	1200 sq. ft	P	N	N	N
Vinyl Flooring	Assumed	C	Throughout Dwelling	600 sq. ft	P	N	N	N

***All plaster has been point counted down to < 1% or no asbestos detected.**

Transite Y/N: N

Clean Out Needed Y/N: Y

SECTION 2 – SURVEY FINDINGS

The assessed property is a vacant residential property, Permanent Parcel No. 226416 according to the Stark County Auditor's website. According to Auditor's website, the structure is a two story, single family property with a brick exterior. The year built is 1920. Measurements approximately 1808 total square feet. Darrell Morris, Certified Asbestos Hazard Evaluation Specialist, ES35369, conducted the assessment on September 17, 2013. The weather was overcast, with a temperature of 75* F.

The samples were taken by the hand "Grab" method, containerized, labeled, and recorded on a "Chain of Custody" log, as shown in Appendix B. All sampling was done on a random basis in accordance with the NESHAP 40 CFR Part 61, Subpart M, federal regulations regarding the National Emissions Standards for Asbestos. The samples were analyzed by Polar Light Microscopy (PLM) by a NVLAP accredited laboratory. The accredited test method was EPA/600M-4-82-020. Procedures described in EPA/600/R-93116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and less than 10% content was automatically "Point Tested". Testing was halted on the "First Positive" of any one Homogenous Area. Condition qualifications are as follows:

"Good" means no damage

"Fair" means up to 10% overall damage and up to 25% localized damage

"Poor" means over 10% overall damage and over 25% localized damage

Certain items are "Assumed" ACM because of two reasons. Firstly, the material is clearly recognized as ACM based upon the Inspector's experience, and indicated as such. Secondly, the building material in question may be considered Non-Friable, therefore not required to be removed prior to demolition. This would occur when the matrix that may contain the ACM is considered sufficient to contain any asbestos material that may be present in the particular homogenous area. These materials are "Category I Non-Friable", like asphalt shingle roofing and floor tile. If any of these materials are in poor condition, and would likely become friable during the demolition process, then they would be categorized as Friable, and be required to be removed prior to demolition. In any case the demolition contractor must use appropriate "Wet Methods" while taking down the structure. If additional suspect ACM is found during demolition, the contractor should immediately **STOP and must call the Qualified Individual designated by the City of Canton.**

Respectfully Submitted,


Darrell Morris

September 20, 2013

Certification Number ES35369

Page 2

SECTION 3 – SCOPE OF SERVICES

IDENTIFICATION

A visual inspection is conducted, in all accessible areas of the building(s), for the presence of suspect Asbestos Containing Materials (ACM). Materials with the same color, texture, date of application, system, or use are considered in the same Homogenous Area (HA).

DETECTION

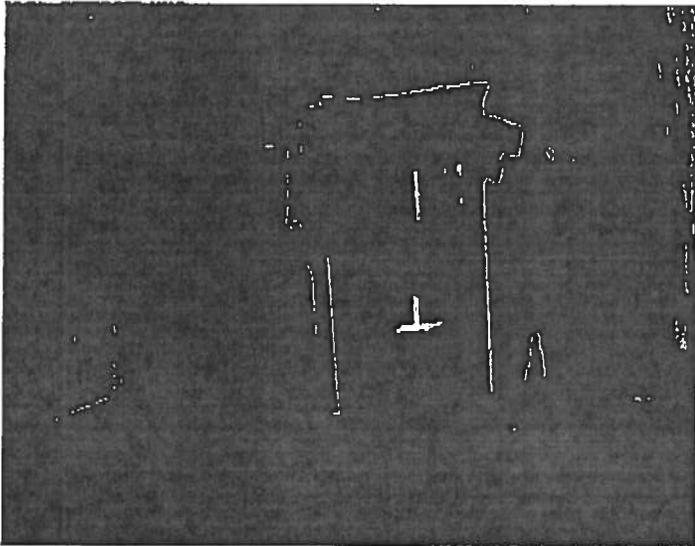
The number and location of samples required for each HA will be determined. a drawing of the facility will be provided showing each sample taken. If determined necessary, sample locations will be marked in the field. Digital images will be taken of any areas deemed necessary by the Qualified Inspector.

Samples taken by a Qualified Individual, who has the requisite licensing/certification for the state in which sampling is taking place. The samples will be containerized, labeled, and recorded on a "Chain of Custody Form" for proper documentation. While sampling, all precautions will be taken to protect the health and safety of all workers, and any individual that might have access to the sampling areas.

Samples will be submitted to a qualified laboratory for testing. The samples will be analyzed by Polar Light Microscopy (PLM). The accredited test method will be EPA/600/M-4-82/020. Procedures described in EPA/600/R-93/116 have been incorporated where applicable. Any sample with a positive PLM for asbestos, and under 10% content, were automatically "Point Tested".

ASSESSMENT

All laboratory results will be analyzed to determine the content of asbestos, if any. Based upon all applicable regulations, including quantity, condition and potential for disturbance, we will advise as to the response required for each HA that contains confirmed ACM.



CLIP

BATH

B/R I

B/R II

DN

KITCHEN

D/R

L/R

BS



ACM ENGINEERING & ENVIRONMENTAL SERVICES

WWW.ACMEHV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

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ASBESTOS MATERIALS

NON-ASBESTOS MATERIALS

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 AN = Anthophyllite
 C = Chrysotile
 CR = Crocidolite
 T = Tremolite
 --- = No Asbestos Detected

CF = Ceramio Fibers N = Nylon
 CO = Cotton O = Other
 G = Fibrous Glass S = Synthetics
 H = Hair V = Vermiculite
 M = Mineral Wool

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Report prepared by: Patrick T. Griffin
 Patrick T. Griffin, President/CEO
 ACM Engineering & Environmental Services

BS

ACM Engineering & Environmental Services, Inc.
 25596 US 20 West • South Bend, Indiana 46628 • Phone: (574) 234-8435 • Fax: (574) 234-6800 • www.acmenv.com
Chain-of-Custody / Analysis Request Form



NVLAP LAB CODE 104577-9

ACM PROJECT ID: 2188

COMMENTS

TURN AROUND TIME

RUSH
Under 24 Hours Special Request

24 Hours

2-3 Days

4+ Days

NOTE: This turnaround period applies to the majority of samples. Turnaround times for special requests are subject to change without notice.

CLIENT / CONTACT SITE INFORMATION

Client/Company Name & Address:
 Positive Energy Environmental
 55 Erieview Plaza, Suite 309
 Cleveland, Ohio 44114

CHECK THE PROVIDED BOX IF THE CLIENT & SITE ADDRESS ARE THE SAME

Site Address:
 745 ROSS
 Canton, OH

Contact: Darrell Morris
 Phone: 216-990-16379
 E-Mail: alchemyschool@yahoo.com
 Reference Number: N/A

Sampled By: Darrell Morris

Date Sampled:

FOR LABORATORY USE ONLY:
 Samples received in proper condition for requested analysis.

LABORATORY PROJECT ID #

SAMPLE ID	SAMPLE DESCRIPTION/SERIAL NUMBER	SAMPLE LOCATION	AREA/VOLUME/MATERIAL	Asbestos Bulk (PLM)	Asbestos Point Count	Fungal Spore Trip Analysis (AT)	Fungal Direct Examination (TAP)
1A	Plaster	Basement	N/A	✓	✓		
2A	Plaster	Living Room		✓	✓		
2B		Daniel's Room		✓	✓		
2C		Kitchen		✓	✓		
2D		Bath		✓	✓		
2E		B/R I		✓	✓		
2F		B/R II		✓	✓		
2G		B/R III		✓	✓		
2H		Hall		✓	✓		

Requested Analysis:

Asbestos Bulk (PLM) ✓

Asbestos Point Count ✓

Fungal Spore Trip Analysis (AT)

Fungal Direct Examination (TAP)

Submitted/Requested by: [Signature]

Date/Time: 9/17/13

Received/Requested by: [Signature]

Date/Time: 9/18/13

Samples Processed by: [Signature]

Date/Time: 9/18/13

Cb



ACM ENGINEERING & ENVIRONMENTAL SERVICES

WWW.ACMENV.COM

26598 U.S. 20 WEST, SOUTH BEND, IN 46628

P: (574)234-8435 F: (574)234-6800

CLIENT: Positive Energy Environmental
6700 Fleet Avenue
Cleveland, OH 44105

ANALYSIS METHOD: EPS/600/R-93-116
NVLAP LAB ID #: 101977
MATRIX: Bulk

LOCATION: 745 Ross
Canton, OH

Sample Date: N/A
Analysis Date: 09/18/13
ACM PROJECT #: 21188

CLIENT SAMPLE #	ACM #	SAMPLE ID/LOCATION	ASBESTOS (%)	CELL	NON-PIB (%)	PIB (%)
1A	1310412	DUCT WRAP-BASEMENT	64% C	36%	---	---
2A	1310413	PLASTER-LIVING ROOM	3% C	---	95%	2% H
2B	1310414	PLASTER-DINING ROOM	2% C	---	96%	2% H
2C	1310415	PLASTER-KITCHEN	2% C	---	96%	2% H
2D	1310416	PLASTER-BATHROOM	3% C	---	95%	2% H
2E	1310417	PLASTER-BEDROOM 1	2% C	---	97%	1% H
2F	1310418	PLASTER-BEDROOM 2	3% C	---	94%	3% H
2G	1310419	PLASTER-BEDROOM 3	2% C	---	96%	2% H
2H	1310420	PLASTER-HALL	2% C	---	95%	3% H

ACM RECOMMENDS POINT COUNTING ANALYSIS ON ALL BULK SAMPLES WITH LESS THAN 10% (<10%) ASBESTOS CONTENT.

Microscopist: Joseph Malave

Title: Laboratory Director

Date: 9/18/13

06

POINT COUNTING ANALYSIS OF SUSPECT ASBESTOS CONTAINING BUILDING MATERIALS

CLIENT: POSITIVE ENERGY
6700 FLEET AVE
CLEVELAND, OH 44105

ANALYTICAL METHOD: EPA 40CFR61
PT. 763 SUBPART E, APPENDIX E
POLARIZED LIGHT MICROSCOPY - POINT COUNTING

CLIENT PROJECT: 745 ROSS STREET
CANTON, OH

NVLAP LAB CODE #: 101977

DATE OF SAMPLE: N/A

DATE OF ANALYSIS: 09/19/13

SAMPLE SITE: RESIDENCE
745 ROSS STREET
CANTON, OH

ACM PROJECT #: 21188

CLIENT SAMPLE NUMBER	LAB SAMPLE NUMBER	# OF SLIDES	ASBESTOS CONCENTRATION BY POINT COUNTING	AVERAGE CONCENTRATION OF ASBESTOS PERCENTAGE
2A	1310413	8	1/400	<1% ASBESTOS
2B	1310414	8	1/400	<1% ASBESTOS
2C	1310415	8	1/400	<1% ASBESTOS
2D	1310416	8	1/400	<1% ASBESTOS
2E	1310417	8	0/400	NO ASBESTOS DETECTED
2F	1310418	8	0/400	NO ASBESTOS DETECTED
2G	1310419	8	1/400	<1% ASBESTOS
2H	1310420	8	0/400	NO ASBESTOS DETECTED

MICROSCOPIST:

Jay Malaw

DATE:

9/19/13

ACM ENGINEERING & ENVIRONMENTAL SERVICES 26598 US 20 WEST, SOUTH BEND, INDIANA 46628
TELEPHONE (574) 234-8435 FAX (574) 234-6800

Abatement Contractor Requirements

Section 13-00-00 Environmental Hazard Abatement

SECTION 13-00-50 – REQUIREMENTS FOR ENVIRONMENTAL HAZARD ABATEMENT

PART 1 - GENERAL

RELATED DOCUMENTS:

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

PROJECT/WORK IDENTIFICATION:

General:

This portion of the project is identified as the Environmental Hazard Abatement Project at the former Washington Elementary School located at 1220 – 9th Street, NE in Canton, Ohio 44705. The project includes the removal of Asbestos Containing Materials (ACM) and other environmental hazard abatement work (i.e.: light bulbs and ballasts) as specified herein. All work will be completed only by experienced, trained, and certified personnel who are fully licensed by the State of Ohio. Environmental Support Network, Inc. will be the Owner's Representative for all abatement oversight, air monitoring, final clearance air testing, project coordination, and administration of this phase of the work. The work includes the following environmental hazard abatement activities at the facility.

Environmental Hazard Abatement Work at Washington Elementary School:

- ◆ Contractor will remove and dispose of 1,450 linear feet of asbestos-containing thermal system insulation on all pipe runs, elbows, fittings, valves, etc. throughout the building regardless of thickness, layering, size, mode of application, or depth in all areas. Because of the nature and location of the asbestos containing materials, all work will be completed using the glovebag methodology. All materials will be removed and staged in a designated area within the building or in a fully-enclosed (steel sides, top, and bottom), secured and locked vehicle or receptacle prior to disposal. All waste materials will be double-bagged prior to leaving the building. Contractor will apply a layer of encapsulant with a contrasting color prior to Final Visual acceptance.
- ◆ Contractor will remove and dispose of 1,170 square feet of asbestos-containing thermal system insulation on all boilers, tanks, breeching, header pipes, etc. throughout the building regardless of thickness, layering, size, mode of application, or depth in all areas. Because of the nature and location of the asbestos containing materials, all work will be completed using the complete containment methodology, as specified. All materials will be removed and staged in a designated area within the building or in a fully-enclosed (steel sides, top, and bottom), secured and locked vehicle or receptacle prior to disposal. All waste materials will be double-bagged prior to leaving the building. Contractor will apply a layer of encapsulant with a contrasting color prior to Final Visual acceptance.

- ◆ Contractor will remove and dispose of 16,044 square feet of asbestos-containing floor tile and 16,044 square feet of asbestos-containing floor tile mastic from the building regardless of tile thickness, layering, size of the tile, type of application, underlayment, thickness of the mastic, or adherence in the areas specified. These materials will be removed using the complete containment methodology. In some areas, carpet is affixed over the floor tile and mastic and is considered “contaminated-by-contact.” All staging areas will be inside containment prior to bagging and loading-out. All materials will be removed and staged in a designated area within the building or in a fully-enclosed (steel sides, top, and bottom), secured and locked, vehicle or receptacle prior to disposal. All waste materials will be double-bagged prior to leaving the building.
- ◆ Contractor will advance up to 75 investigative penetrations to look for hidden and unknown asbestos-containing materials. This includes opening wall cavities, cutting into flooring, and exposing ceiling voids.
- ◆ Contractor will expose, remove, and dispose of any additional thermal system insulation in excess of the aforementioned values that are found to be hidden or unknown. These materials may be behind walls, above ceilings, below floors, or otherwise hidden. Up to an additional 500 linear or square feet will be removed and disposed as a part of the base bid. All materials will be removed and staged in a designated area within the building or in a fully-enclosed (steel sides, top, and bottom), secured and locked vehicle or receptacle prior to disposal. Any materials in excess of the quantities of thermal system insulation specified above will be removed and disposed by the Contractor by Change Order, which will include all materials, labor, transportation, and disposal of these materials. All waste materials will be double-bagged prior to leaving the building. Contractor will apply a layer of encapsulant with a contrasting color prior to Final Visual acceptance.
- ◆ Contractor will remove and dispose of all gaskets, packing, and seals, in various areas of the building and its appurtenances regardless of thickness, layering, mode of application, type of material, location, or depth on all gaskets, packing, connections, seals, etc. on all plumbing and HVAC systems as specified. All waste materials will be double-bagged prior to leaving the building. Contractor will apply a layer of encapsulant with a contrasting color prior to Final Visual acceptance.
- ◆ Contractor will remove and dispose of any debris deemed to be potentially asbestos containing by Environmental Support Network, Inc. on all floors in all areas prior to final visual inspection. For the purposes of this bid, this includes up to 70 disposal bags (2/3 full) of asbestos containing debris. All materials will be removed and staged in a designated area within the building or in a fully-enclosed (steel sides, top, and bottom), secured and locked vehicle or receptacle prior to disposal. All waste materials will be double-bagged prior to leaving the building. Contractor will apply a layer of encapsulant with a contrasting color prior to Final Visual acceptance.
- ◆ Contractor will remove and dispose of all stage light wiring, vibration cloths, stage curtains, and dampers as friable asbestos containing materials prior to project completion. All waste materials will be double-bagged prior to leaving the building.
- ◆ Contractor will remove and dispose of all fire doors as ACM. All waste materials will be double-wrapped in 6-mil poly sheeting prior to leaving the building.
- ◆ Contractor will dispose of all light bulbs and ballasts from the building. The Contractor will remove these materials from the ceiling structure, stage them in a designated location, containerize them, and dispose of these materials as regulated and/or hazardous materials. Recycling is acceptable at appropriately licensed facilities. These bulbs and

ballasts may harbor PCB's, toxic-levels of heavy metals, and/or DEHP's which are hazardous and/or regulated materials. Therefore, irrespective of the markings on the bulbs or ballasts, manifests must be provided to the Owner for all of these materials prior to satisfactory completion of the project.

- ◆ Contractor will remove and dispose of all windows with glazing on all window openings regardless of thickness, layering, type of application, or mode of attachment as friable asbestos containing materials. Because these materials are firmly adhered to both the window opening and the frame, the entire window system (pane, glass, frame, etc.) will be removed intact. A window opening is defined by the brick enclosing the window system regardless of the number of panes of glass present. Before starting removal of the window system, all glass windows will be fully covered with adhesive plastic prior to conducting this work. The entire structure is to be removed intact, carefully lowered to the ground, sealed in two layers of 6-mil polyethylene plastic, secured with duct tape, and loaded, in-tact, into the dumpster for transportation and disposal. Under no circumstances is glass to be broken prior to or during this operation. The window opening will then be framed with wood which is mechanically secured to the opening, covered with plywood (attached to the wooden frame with wood screws), and otherwise secured to prevent access by unauthorized access.

Contractor will not always be allocated sole usage of the entirety of the school building for the completion of this work. At times, visitors may come and go. Therefore, coordination with the Environmental Consultant, other trades, and the Owner is of crucial importance to this project. Contractor will account for such delays in the preparation of their bid. No additional fees will be paid to Contractor for the phasing, extra materials, disposal, or additional labor for this work beyond the base bid or unit cost prices submitted by the Contractor.

While in each area, contractor shall complete all work in that area where multiple forms of asbestos containing materials are present so as not to return to the same area more than once. The work hours for this project will be from 8:00 AM - 5:00 PM Monday through Friday. **Please review the Milestone Completion Dates and Project Schedule that will address the anticipated Start Date and End Date for this phase of the project.**

The project shall run on consecutive business days, with no lapses, once the work is started. The project shall be completed in no more than for 40 business days. Contractor is solely responsible for meeting the time demands of this project. Contractor will assure that sufficient personnel, equipment, and supplies are present on-site daily, and for work in multiple areas concurrently, so as to complete this job within the time allotted.

No additional monetary outlays will be allocated to the Contractor for mobilizations to and from the site. As such, Contractor shall account for all mobilizations to and from the site and add contingencies for additional re-mobilizations if site conditions warrant.

Other Contractor Requirements:

Additional Contractor requirements for this project are as follows. These conditions are not negotiable and will be enforced in their entirety.

- ❖ The Contractor will allocate at least one-(1) on-site CAHAS(s) (per Section 13-01-00) for every 12 abatement workers per area while the project is ongoing. The Contractor will allow for one-(1) 8-hour shift per day.

- ❖ Contractor will use only metal-top, fully enclosed, lockable, and completely secured waste dumpsters which are staged outside. Under no circumstances are open-top containers with tarps allowed for work of this project.
- ❖ Contractor must consider laboratory turnaround time of three-(3) business days (excluding weekends and holidays) per area cleared and must have sufficient air filtration devices (AFD's) to account for areas being cleared as well as all areas under abatement set-up and any other abatement activity.
- ❖ Contractor will allow for sufficient air filtration devices in each area to attain the minimum standard of the specification, plus one additional air filtration device, plus two reserve air filtration devices to account for equipment breakdown in excess of that needed for multiple work area operation.
- ❖ Contractor and workers have matching photographic identification, which exactly matches their ODOH card, fit test, medical evaluation, and licenses.

Additional Contractor Requirements:

Codes, Regulations and Standards - Asbestos Abatement: 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 Environmental Consultant and which either must be applied for and received, or which must be given to governmental agencies before start of work.

Temporary Facilities - Asbestos Abatement: sets forth the support facilities needed such as electrical and plumbing connections for the decontamination unit and office space for Environmental Support Network, Inc.

Temporary Enclosures: details the requirements for the sheet plastic barriers isolating the work area from the balance of the building. In addition, this includes the enclosure of the various access points.

Test Laboratory Services: All air testing and all final clearance testing is the sole responsibility of the Environmental Consultant.

Decontamination Units: explains the setup and operation of the personnel and material decontamination units.

Temporary Pressure Differential and Air Circulation System: sets forth the procedures to set up pressure differential isolation and ventilation of the work area.

Worker Protection - Asbestos Abatement: describes the equipment and procedures for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

Respiratory Protection: sets forth the procedures and equipment required for adequate protection against inhalation of airborne asbestos fibers.

Asbestos Removal Work Procedures are described in the following specification sections:

- ◆ Demolition of Asbestos-Contaminated Materials
- ◆ Removal of Asbestos-Containing Materials
- ◆ Disposal of Asbestos Containing Waste Material

Decontamination of the Work Area after completion of abatement work is described in the following sections:

- ◆ **Cleaning and Decontamination Procedures:** sets forth procedures to be used on contaminated objects and rooms, which are not part of an abatement work area.
- ◆ **Project Decontamination:** describes the sequence of cleaning and decontamination procedures to be followed during removal of the sheet plastic barriers isolating a work area.
- ◆ **Work Area Clearance:** describes the analytical methods used to determine if the work area has been successfully cleaned of contamination.
- ◆ **Project Closeout:** details the close out procedures to end the project once abatement work is complete including final paperwork requirements.

PLAN OF ACTION:

Contractor will submit a detailed plan of the procedures proposed for use in complying with the requirements of this portion of the specification. Contractor will include in the plan the location and layout of decontamination areas, negative air filtration, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants 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. Contractor will also expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system, method of removal to prohibit visible emissions in work area, and packaging of removed asbestos debris.

POTENTIAL ASBESTOS HAZARD:

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 other workmen and building occupants. Contractor will apprise all workers, supervisory personnel, subcontractors, and visitors who will be at the job site of the seriousness of the hazard and of proper work procedures, which must be followed.

Wherein the performance of the work, workers, supervisory personnel, subcontractors, or visitors may encounter, disturb, or otherwise function in the immediate vicinity of any identified asbestos-containing materials, Contractor will take appropriate continuous measures as necessary to protect all building occupants from the potential hazard of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state, and local agencies.

STOP WORK:

If Environmental Support Network, Inc. presents a written stop work order, Contractor will immediately and automatically stop all work. Contractor will not recommence work until authorized in writing by Environmental Support Network, Inc.

ASBESTOS-CONTAINING MATERIALS:

All forms of asbestos-containing materials are known to be present at the work site. This includes amosite as well as other forms in very high concentration. If any other materials are found, which are suspected of containing asbestos, Contractor will notify immediately Environmental Support Network, Inc.

CONTRACTOR USE OF PREMISES:

Use of the Site: Contractor will confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated and work is not being conducted are not to be disturbed. Contractor will conform to site rules and regulations affecting the work while engaged in project construction.

The Contractor is solely responsible to undertake any means necessary to gain access and abate any and all TSI and/or other environmental hazards as necessary in the time frame allotted. This includes all cutting, demolition, clean-up, and related-activities deemed necessary by the Environmental Consultant for the abatement of all environmental hazards and all safety issues related thereto. No additional monetary outlay will be granted to the Contractor for work related to these activities.

The Contractor is responsible for moving or removing any and all non-asbestos containing materials, appurtenances, or equipment necessary to gain access to any of the environmental hazards specified. This includes moving and replacing furniture, equipment, waste, and appurtenances in the rooms to be abated where necessary. No additional payments will be authorized for the Contractor's expense in reaching these materials for the purposes of remediation or waste disposal.

END OF SECTION – 13-00-50

SECTION 13-01-00 - PROJECT COORDINATION

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to this section.

SUMMARY

This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:

- ◆ Administrative and supervisory personnel
- ◆ Progress and Safety Meetings
- ◆ Pre-Construction Conference
- ◆ Daily Log
- ◆ Special reports
- ◆ Contingency Plans
- ◆ Notifications to other entities at job site

Requirements for the Contractor's Construction Schedule are included in Section "Submittals."

ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

General Superintendent:

The Contractor must provide a full-time General Superintendent who is 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 Contractor's Representative responsible for compliance with all applicable federal, state, and local regulations, particularly those relating to asbestos-containing materials.

- ◆ Experience and Training: The General Superintendent must have completed a course at an EPA Training Center or equivalent certificate course in asbestos abatement procedures, and have had a minimum of five (5) years on-the-job training in asbestos abatement supervisory procedures.
- ◆ Competent Person: The General Superintendent is to be a Competent Person as required by OSHA in 29 CFR 1926.

- ◆ Accreditation: The General Superintendent is to be accredited as an Asbestos Abatement Supervisor in accordance with the AHERA regulation 40 CFR Part 763, Subpart E, Appendix C.

- ◆ Supervision: The General Superintendent cannot function as an asbestos abatement worker or supervisor for the duration of the project. This is the person that the project supervisors report to and who functions as a liaison with Environmental Support Network, Inc.

PROGRESS MEETINGS:

General:

In addition to specific coordination and pre-construction meetings for each element of work, and other regular project meetings held for other purposes, Environmental Support Network, Inc. will hold general progress meetings as required. This requires each entity involved in planning, coordination, or performance of work to be properly represented at each meeting.

PRE-CONSTRUCTION CONFERENCE:

An initial progress meeting, recognized as "Pre-Construction Conference" will be convened by Environmental Support Network, Inc. prior to the start of any work. Contractor will meet Environmental Support Network, Inc. at the project site to discuss any concerns with the abatement work. No additional fees will be assessed by the Contractor for attendance with these meetings.

- ◆ 24 hours advance notice will be provided to all participants prior to convening Pre-Construction Conference.

This is an organizational meeting, to review responsibilities and personnel assignments and to locate the containment and decontamination areas and temporary facilities including power, light, water, etc.

DAILY LOG:

The Contractor must maintain within the Decontamination Unit a daily log documenting the dates and time of, but not limited to, the following items:

- ◆ Meetings; purpose, attendees, brief discussion
- ◆ Visitations; authorized and unauthorized
- ◆ Personnel, by name, entering and leaving the work area
- ◆ Special or unusual events, i.e. barrier breaching, equipment failures, accidents
- ◆ Air monitoring tests and test results
- ◆ Documentation of Contractor's completion of the following:

- Inspection of work area preparation prior to start of removal and daily thereafter.
- Removal of any sheet plastic barriers
- Contractor's inspections prior to spray back, lock back, encapsulation, enclosure or any other operation that will conceal the condition of asbestos-containing materials or the substrate from which such materials have been removed.
- Removal of waste materials from work area
- Decontamination of equipment (list items)
- Contractor's air test analysis.

The Contractor must provide two (2) copies of this log to Environmental Support Network, Inc. on a daily basis. This log must be accurate, precise, and acceptable to Environmental Support Network, Inc. or it must be redone prior to the next shift of work without additional fees or charges to the Owner.

The Contractor must submit copies of this log at final close-out of project as a project close-out submittal.

SPECIAL REPORTS:

General:

Except as otherwise indicated, the contractor must submit special reports directly to Environmental Support Network, Inc. within one day of occurrence requiring special report, with copy to others affected by occurrence.

Reporting Unusual Events:

When an event of unusual and significant nature occurs at the site (examples: failure of pressure differential system, rupture of temporary enclosures, fires or any other unusual event), Contractor will 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, Contractor will advise Environmental Support Network, Inc. in advance at the earliest possible time and date.

Reporting Accidents:

Contractor must prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Contractor must 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, property loss is sustained, or where the event posed a significant threat of loss or personal injury.

Report Discovered Conditions:

When an unusual condition of the building is discovered during the work (e.g. leaks, termites, corrosion) prepare and submit a special report indication condition discovered.

CONTINGENCY PLAN:

Contingency Plan:

The Contractor must prepare a contingency plan for emergencies including fire, accident, power failure, pressure differential system failure, supplied air system failure, or any other event that may require modification or abridgment 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.

Posting:

The Contingency Plan must be conspicuously posted in clean room of Personnel Decontamination Unit telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

NOTIFICATIONS:

Notify other entities:

The contractor must 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.

Notify emergency service agencies:

The contractor must notify emergency service agencies including fire, ambulance, police, or other agency that may service the abatement work site in case of an emergency. Notification is to include methods of entering work area, emergency entry and exit locations, modifications to fire notification or fire fighting equipment, and other information needed by agencies providing emergency services.

Notifications of Emergency:

Any individual at the job site may notify emergency service agencies if necessary without effect on this Contract.

SUBMITTALS:

Before the Start of Work:

Prior to initiating work the contractor must submit the following to Environmental Support Network, Inc. for review. No work shall begin until these submittals are returned with Environmental Support Network, Inc.'s stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

- ◆ Contingency Plans: for emergency actions.
- ◆ Telephone Numbers: and location of emergency services.
- ◆ Notifications: sent to other entities at the work site.

- ◆ Notifications: sent to emergency service agencies.
- ◆ Resume: of general superintendent.
- ◆ Accreditation: The contractor must submit evidence in the form of training course certificate of accreditation of General Superintendent as an asbestos abatement supervisor.

Staff Names:

Within 15 days of Notice to Proceed, the contractor must submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties, and responsibilities; list their addresses and telephone numbers.

The contractor must post copies of the list in the project meeting room, the temporary field office, and each temporary telephone.

END OF SECTION – 13-01-00

SECTION 13-02-10 - DEFINITIONS AND STANDARDS

PART 1 - GENERAL:

RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

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.

Installer:

An "Installer" is an entity engaged by the Contractor, either as an employee, subcontractor or sub-subcontractor for performance of a particular construction activity, including installation, erection, application and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

The term "experienced," when used with the term "Installer" means having a minimum of 20 previous Projects similar in size and scope to this project, and familiar with the precautions required, and has complied with requirements of the authority having jurisdiction.

Project Site:

The project site is the space available to the Contractor for performance of the work, either exclusively or in conjunction with others performing other construction as part of the project. The extent of the project site is shown on the Drawings, and may or may not be identical with the description of the land upon which the project is to be built.

Testing Laboratories:

A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, either at the project site or elsewhere, and to report on, and, if required, to interpret, results of those inspections or tests.

General Superintendent:

This is the Contractor's Representative at the work site. This person will generally be the Competent Person required by OSHA in 29 CFR 1926 and certified and licensed by the State of Ohio as an asbestos abatement project supervisor.

DEFINITIONS RELATIVE TO ASBESTOS ABATEMENT:

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) and all applicable Federal, State, and Local ordinances, rules, codes, and/or regulations.

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

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.

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

Amended Water: Water to which a surfactant has been added to decrease the surface tension to 35 or less dynes.

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 shall be considered as asbestos.

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

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

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

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.

Authorized Visitor: The Owner; the Environmental Consultant; testing lab personnel, the Architect/Engineer, emergency personnel or a representative of any federal, state and local regulatory or other agency having authority over the project.

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

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

Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.

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

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

Disposal Bag: A properly labeled 6 mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site.

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

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

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

Removal encapsulant: a penetrating encapsulant specifically designed to minimize fiber release during removal of asbestos-containing materials rather than for in situ encapsulation.

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

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

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

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.

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

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

HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air 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.

High-efficiency particulate air filter: (HEPA) refers to a filtering system capable of trapping and retaining 99.97 percent of all monodispersed particles 0.3 um in diameter or larger.

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.

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

Owner's Environmental Consultant: For this project, Environmental Support Network, Inc. will serve as the Owner's Environmental Consultant.

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

Pressure Differential and Ventilation System: A local exhaust system, utilizing HEPA filtration capable of maintaining a pressure differential with the inside of the Work Area at a lower pressure than any adjacent area, and which cleans recirculated air or generates a constant air flow from adjacent areas into the Work Area.

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.

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

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

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

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

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.

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.

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.

Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified shall be the minimum to be provided or performed. The actual installation may comply exactly, within specified tolerances, with the minimum quantity or quality specified, or it may exceed that minimum within reasonable limits. In complying with these requirements, indicated numeric values are minimum or maximum values, as noted, or appropriate for the context of the requirements. Refer instances of uncertainty to the Environmental Support Network, Inc. for decision before proceeding.

Copies of Standards:

Each entity engaged in construction 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.

- ◆ Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.
- ◆ Although copies of standards needed for enforcement of requirements may be part of required submittals, the Owner's Environmental Consultant reserves the right to require the Contractor to submit additional copies as necessary for enforcement of requirements.

Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations as referenced in Contract Documents are defined to mean the associated names. 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:

AIHA	American Industrial Hygiene Assoc. 475 Wolf Ledges Parkway Akron, OH 44311 216/762-7294
AIA	American Institute of Architects 1735 New York Ave. NW Washington, DC 20006 202/626-7474
ANSI	American National Standards Inst. 1430 Broadway New York, NY 10018 212/354-3300
ASHRAE	American Society for Heating, Refrigerating, and Air Conditioning Engineers 1791 Tullie Circle NE Atlanta, GA 30329 404/636-8400
ASME	American Society of Mech. Engineers 345 East 47th Street New York, NY 10017 212/705-7722
ASPE	American Society of Plumbing Eng. 3716 Thousand Oaks Boulevard, Suite 210 Westlake, CA 91362 805/495-7120
ASTM Materials	American Society for Testing and 1916 Race St. Philadelphia, PA 19103 215/299-5400
AWCI	Association of the Wall and Ceiling Industries- International 25 K Street, NW Washington, DC 20002 202/783-2924
CFR Register)	Code of Federal Regulations Available from Government Printing Office; Washington, DC 20402 (usually first published in Federal 202/783-3238
CGA	Compressed Gas Association 1235 Jefferson Davis Highway

Arlington, VA 22202
703/979-0900

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

DOT Department of Transportation
400 Seventh St., SW
Washington, DC 20590
202/426-4000

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

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

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

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

IEEE Institute of Electrical Engineers
345 E. 47th Street
New York, NY 10017
212/705-7900

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

NBS National Bureau of Standards
(U.S. Dept. of Commerce)
Gaithersburg, MD 20234
301/921-1000

NEC National Electrical Code (by NFPA)

NFPA	National Fire Protection Assoc. Batterymarch Park Quincy, MA 02269 617/770-3000
NRCA	National Roofing Contractors Assoc. 6250 River Road Rosemont, IL 60018 312/318-6722
OSHA	Occupational Safety & Health Admin. (U.S. Dept. of Labor) Government Printing Office Washington, DC 20402 202/783-3238
PS	Product Standard of NBS (U.S. Dept. of Commerce) Government Printing Office Washington, DC 20402 202/783-3238
RFCI	Resilient Floor Coverings Institute 966 Hungerford Drive, Suite 12-B Rockville, MD 20805 301/340-8580
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062 312/272-8800

SUBMITTALS:

Permits, Licenses and Certificates:

For the Owner's records, Contractor will 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 – 13-02-10

SECTION 13-02-20 - CODES, REGULATIONS, AND STANDARDS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to this section.

SUMMARY

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 Environmental Consultant and which either must be applied for and received, or which must be given to governmental agencies before start of work.

- ◆ Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.
- ◆ Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

CODES AND REGULATIONS

General Applicability of Codes and 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.

Contractor Responsibility:

The Contractor shall 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 shall hold Environmental Support Network, Inc. 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.

It is the Contractors responsibility to familiarize themselves with the site.

Federal Requirements:

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

OSHA:

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

Occupational Exposure to Asbestos, Tremolite,
Anthophyllite, and Actinolite; Final Rules
Title 29, Part 1910, Section 1001 and
Part 1926, Section 58 of the
Code of Federal Regulations

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

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

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

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

DOT: U. S. Department of Transportation, including but not limited to:

Hazardous Substances
Title 49, Part 171, 172 and 387 of the
Code of Federal Regulations

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

Asbestos Abatement Projects; Worker Protection Rule
Title 40 Part 763, Sub-part G of the
Code of Federal Regulations

Asbestos Hazard Emergency Response Act (AHERA) Regulation
Asbestos Containing Materials in Schools Final Rule & Notice
Title 40, Part 763, Sub-part E of the
Code of Federal Regulations

Training Requirements of (AHERA) Regulation
Asbestos Containing Materials in Schools Final Rule & Notice
Title 40, Part 763, Sub-part E, Appendix C of the

Code of Federal Regulations

National Emission Standard for Hazardous Air Pollutants (NESHAPS)
National Emission Standard for Asbestos
Title 40, Part 61, Sub-part A,
and Sub-part M (Revised Sub-part B) of the
Code of Federal Regulations

Asbestos Notification Requirements; Reportable Quantity Adjustments
40 CFR 763.117 and 40 CFR 763.302

State Requirements:

State of Ohio regulations which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following.

All work must be conducted in accordance with the basic building codes for the State of Ohio, Construction and Renovation Codes and Ordinances, and all applicable State Rules and Regulations including but not limited to the following rules and regulations of the following agencies:

- ◆ Ohio Environmental Protection Agency
- ◆ Ohio Department of Health
- ◆ Ohio Department of Education
- ◆ Ohio Department of Labor
- ◆ Ohio Department of Transportation
- ◆ Ohio Building Department
- ◆ Ohio Department of Sanitation
- ◆ Ohio Dept. of Occupational Safety & Health

Any and all requirements and recommended practices for the removal, encapsulation, repair or abatement of asbestos containing materials and those relating to any asbestos hazard abatement work will be strictly enforced.

Local Requirements:

The contractor must abide by all county, city, and local requirements and recommended practices which govern asbestos abatement work, construction, renovation or hauling and disposal of asbestos waste materials.

STANDARDS:

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.

Contractor Responsibility:

The Contractor shall 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 areas adjacent to the site. The Contractor shall hold the Owner and Environmental Support Network, Inc. harmless for failure to comply with any applicable standard on the part of himself, his employees, or his subcontractors. Any work which is determined to be conducted or have been conducted without compliance with the above standards will be repeated by the contractor at the contractor's expense. Any costs or fees associated with the lack of compliance with the above standards will be the responsibility of the contractor. The contractor forfeits any and all rights to monetary damages associated with lack of compliance with the above standards.

Standards:

Standards which apply to asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

American National Standards Institute (ANSI)

1430 Broadway
New York, New York 10018
(212)354-3300

- ◆ Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79
- ◆ Practices for Respiratory Protection Publication Z88.2-80

American Society for Testing and Materials (ASTM)

1916 Race Street
Philadelphia, PA 19103
(215)299-5400

- ◆ Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849-82
- ◆ Specification for Encapsulants for Friable Asbestos Containing Building Materials Proposal P-189

AFL/CIO:

- ◆ 1926-58: ASBESTOS STANDARD FOR CONSTRUCTION -- BUILDING
AND CONSTRUCTION TRADES DEPARTMENT. AFL- CIO

AIA SERVICE CORPORATION

- ◆ "GUIDE" SPECIFICATION - 02080 ASBESTOS REMOVAL AIA
SERVICE CORPORATION
1735 NEW YORK AVENUE NW
WASHINGTON, DC

GENERAL SERVICES ADMINISTRATION

- ◆ ASBESTOS CONTROL PROGRAM
NBSIR 87-2688
GUIDELINES FOR ASSESSMENT AND ABATEMENT OF ASBESTOS-
CONTAINING MATERIAL IN BUILDINGS MAY 1983
- ◆ U.S. DEPARTMENT OF COMMERCE
- ◆ NATIONAL BUREAU OF STANDARDS
- ◆ NATIONAL ENGINEERING LAB
- ◆ CENTER FOR BUILDING TECHNOLOGY

U.S. NAVY - NAVFAC

- ◆ SECTION 02085 REMOVAL AND DISPOSAL OF ASBESTOS MATERIALS

VETERANS ADMINISTRATION

- ◆ SECTION 01569 ASBESTOS ABATEMENT SPECIFICATION

U.S. POSTAL SERVICE

- ◆ TECHNICAL SPECIFICATIONS FOR TERM CONSTRUCTION CONTRACT
ASBESTOS ABATEMENT

EPA GUIDANCE DOCUMENTS:

EPA Guidance Documents include all documents which discuss asbestos abatement work or hauling and disposal of asbestos waste materials 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 (554-1404 in Washington, DC):

- ◆ Asbestos-Containing Materials in School Buildings - A Guidance Document. Part 1 & 2. (Orange Books)
EPA C00090 (out of print)
- ◆ Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book) EPA 560/5-85-024
- ◆ Friable Asbestos-Containing Materials in Schools: Identification and Notification Rule (40 CFR Part 763)
- ◆ Evaluation of the EPA Asbestos-in-Schools Identification and Notification Rule EPA 560/5-84-005
- ◆ Asbestos in Buildings: National Survey of Asbestos-Containing Friable Materials EPA 560/5-84-006
- ◆ Asbestos in Buildings: Guidance for Service and Maintenance Personnel. EPA 560/5-85-018

- ◆ Asbestos Waste Management Guidance EPA 530-SW-85-007.
- ◆ Asbestos Fact Book EPA Office of Public Affairs
Asbestos in Buildings Simplified Sampling Scheme for Friable Surfacing Materials
- ◆ Commercial Laboratories with Polarized Light Microscopy Capabilities for bulk asbestos identification
- ◆ A Guide to Respiratory Protection for the Asbestos Abatement Industry. EPA-560-OPTS-86-001

NOTICES:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Send Written Notification:

The contractor must send 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 days prior to beginning any work on asbestos-containing materials. Send notification to the following address:

REGION 5
Asbestos NESHAPS Contact
Air Management Division
USEPA
230 S. Dearborn Street
Chicago, Illinois 60604
(312) 353-2088

Notification:

Notifications must include the following information in the notification sent to the NESHAPS contact:

- ◆ Name and address of owner
- ◆ Description of the facility being demolished or renovated, including the size, age, and prior use of the facility
- ◆ 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. For facilities in which the amount of friable asbestos materials less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on other facility components, explain techniques of estimation
- ◆ Location of the facility being demolished or renovated
- ◆ Scheduled starting and completion dates of demolition or renovation
- ◆ Nature of planned demolition or renovation and method(s) to be used

- ◆ 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)
- ◆ Name and location of the waste disposal site where the friable asbestos waste material will be deposited

STATE AND LOCAL AGENCIES:

Send Written Notification:

The contractor must send written notification as required by state and local regulations prior to beginning any work on asbestos-containing materials.

PERMITS:

Permit:

All asbestos containing 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 waste asbestos-containing materials to a disposal site.

LICENSES:

Licenses:

Contractor must maintain current licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

POSTING AND FILING OF REGULATIONS

Posting and Filing of Regulations:

Contractor must post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulations and standard. Maintain one copy of each at job site. Keep on file in Contractor's office one copy of each.

SUBMITTALS:

Before Start of Work:

The contractor must submit the following to Environmental Support Network, Inc. for review. No work shall begin until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

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 including:

- ◆ State and Local Regulations: Submit copies of codes and regulations applicable to the work
- ◆ Notices: Submit notices required by federal, state and local regulations together with proof of timely transmittal to agency requiring the notice
- ◆ Permits: Submit copies of current valid permits required by state and local regulations
- ◆ Licenses: Submit copies of all State and local licenses and permits necessary to carry out the work of this contract

END OF SECTION – 13-02-20

SECTION 13-02-30 - SUBMITTALS

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

SUMMARY

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

- ◆ Contractor's construction schedule
- ◆ Daily construction reports
- ◆ Product Data
- ◆ Miscellaneous Submittals

Administrative Submittals: Refer to other Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:

- ◆ Permits
- ◆ Licenses and certificates
- ◆ Performance and payment bonds
- ◆ Insurance certificates
- ◆ List of Subcontractors
- ◆ List of HEPA equipped tools

SUBMITTAL PROCEDURES

Coordination:

Contractor will coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

Contractor will coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.

Environmental Support Network, Inc. reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

Processing:

Contractor will allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

Contractor will allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Environmental Support Network, Inc. will promptly advise the Contractor when a submittal being processed must be delayed for coordination.

If an intermediate submittal is necessary, Contractor will process the same as the initial submittal.

Contractor will allow two weeks for reprocessing each submittal.

Submittal Preparation:

Contractor shall place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

Contractor will provide a space approximately 4" x 5" on the label or beside the title block to record the Contractor's review and approval markings and the action taken. Include the following information on the label for processing and recording action taken.

- ◆ Project name
- ◆ Date
- ◆ Name and address of Environmental Support Network, Inc.
- ◆ Name and address of Contractor
- ◆ Name and address of supplier
- ◆ Name of manufacturer
- ◆ Number and title of appropriate Specification Section
- ◆ Drawing number and detail references, as appropriate

Submittal Transmittal:

Contractor will package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Environmental Support Network, Inc. using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.

BASELINE CONSTRUCTION SCHEDULE

Schedule: Contractor will provide proposed detailed schedule to coincide with Specification Section 01-01-50, milestone dates and bid summary schedule including work dates, work shift time, number of employees, dates of start and completion including dates of preparation work, removals and final inspection dates.

Contractor will coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.

Contractor shall indicate Clearance of each Work Area in advance of the dates established for Clearance. Contractor will allocate time for testing necessary for certification of Clearance as stated in other sections of this document.

Work Stages:

Contractor will indicate important stages of construction for each major portion of the work, including testing and installation. Include indication of start and finish times for the following:

- ◆ Preparation of the Work Area

- ◆ Asbestos removal
- ◆ Clearance testing
- ◆ Substantial Completion

Area Separations:

Contractor will provide a separate line item to identify each Work Area for each portion of the work. Indicate where each element in an area must be sequenced or integrated with other activities. Each room must, at a minimum, be considered a work area.

Distribution:

Following response to the initial submittal, Contractor will print and distribute copies to Environmental Support Network, Inc. to comply with scheduled dates. Post copies in Environmental Support Network, Inc.'s field office, project meeting room and temporary field office.

When revisions are made, Contractor will distribute to the same parties and post in the same locations. Contractor will delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

PRODUCT DATA

Contractor will collect Product Data into a single submittal. Product Data includes printed information such as manufacturer's instructions, catalog cuts, standard diagrams, pictures of manufacturers equipment (as-is) and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

- ◆ Manufacturer's printed recommendations
- ◆ Compliance with recognized trade association standards
- ◆ Compliance with recognized testing agency standards
- ◆ Application of testing agency labels and seals
- ◆ Notation of dimensions verified by field measurement
- ◆ Notation of coordination requirements

Contractor will not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

Submittals: Contractor will submit 1 copy of each required submittal. Environmental Support Network, Inc. will retain two, and will return the one marked with action taken and corrections or modifications required.

Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

Distribution:

Contractor will furnish copies of final submittal to installers, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.

Contractor will not proceed with work until a final submittal is in Environmental Support Network, Inc.'s possession.

Contractor will not permit use of unmarked copies of Product Data in connection with construction.

MISCELLANEOUS SUBMITTALS:

Material Safety Data Sheets:

Contractor will process material safety and data sheets as "product data."

Records of Actual Work:

Contractor will furnish 2 copies of records of actual work, one of which will be returned for inclusion in the record documents as specified in section "Project Close-out."

Standards:

Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, Contractor will submit a single copy of standards for Environmental Support Network, Inc.'s use. Where workmanship, whether at the project site or elsewhere is governed by a standard, furnish additional copies of the standard to fabricators, installers and others involved in the performance of the work.

Close-out Submittals:

Contractor will refer to section "Project Close-out" and to individual sections of these specifications for specific submittal requirements of project close-out information.

Record Documents:

Contractor will furnish set of original documents as maintained on the project site.

ENVIRONMENTAL SUPPORT NETWORK, INC.

Except for submittals for record, information or similar purposes, where action and return is required or requested, Environmental Support Network, Inc. will review each submittal, mark to indicate action taken, and return promptly.

Compliance with specified characteristics is the Contractor's responsibility.

Action Stamp:

Environmental Support Network, Inc. will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken.

Final Unrestricted Release:

Where submittals are marked "Approved," that part of the work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.

Final-But-Restricted Release:

When submittals are marked "Approved as Noted," that part of the work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.

Returned for Resubmittal:

When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

Do not permit submittals marked "Not Approved, Revise and Resubmit" to be used at the Project site, or elsewhere where work is in progress.

Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required."

END OF SECTION 13-02-30

SECTION 13-02-40- AIR MONITORING - TEST LABORATORY SERVICES

PART 1 - GENERAL

RELATED DOCUMENTS:

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

Air Monitoring during work area clearance is described in Work Area Clearance Section.

DESCRIPTION OF THE WORK

Not in Contract Sum:

This section describes work being performed by the Owner. This work is not in the Contract Sum.

This section describes air monitoring carried out by Environmental Support Network, Inc. to verify that the building beyond the work area and the outside environment remains 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.

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

AIR MONITORING:

Work Area Isolation:

The purpose of the Owner's air monitoring is to detect faults in the work area isolation such as:

- ◆ Contamination of the building outside of the work area with airborne asbestos fibers
- ◆ Failure of filtration or rupture in the differential pressure system
- ◆ Contamination of air outside the building envelop airborne asbestos fibers

Should any of the above occur Contractor will immediately cease asbestos abatement activities until the fault is corrected. Contractor will not recommence work until authorized by Environmental Support Network, Inc.

Work Area Airborne Fiber Count:

The Environmental Consultant will monitor airborne fiber counts in the Work Area. The purpose of this air monitoring will be to detect airborne asbestos concentrations which may 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.

Work area clearance:

To determine if the elevated airborne fiber counts encountered during abatement operations have been reduced to an acceptable level, the Environmental Consultant will sample and analyze air per Work Area Clearance.

The Environmental Consultant will be conducting air monitoring throughout the course of the project.

Inside Work Area:

Contractor will maintain an average airborne count in the Work Area of less than 0.2 fibers per cubic centimeter. If the fiber counts rise above this figure for any sample taken, Environmental Support Network, Inc. will 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, and leave Pressure Differential System in operation.

If airborne fiber counts exceed 2.0 fibers per cubic centimeter for any period of time cease all work except corrective action until fiber counts fall below 0.2 fibers per cubic centimeter. All work will then be conducted in Type C protection. After correcting cause of high fiber levels, no work will recommence for 24 hours unless otherwise authorized, in writing, by Environmental Support Network, Inc. Work will continue in Type C until two consecutive days of readings below 0.2 fibers per cubic centimeter are determined.

Outside Work Area: If any air sample taken outside of the Work Area exceeds the base line, immediately and automatically stop all work except corrective action. Environmental Support Network, Inc. will determine the source of the high reading and so notify the Contractor.

If the high reading was the result of a failure of Work Area isolation measures initiate the following actions:

- ◆ Immediately erect new critical barriers as set forth in Temporary Enclosures Section to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the involved space (e.g. wall, ceiling, floor)
- ◆ Decontaminate the affected area in accordance with Cleaning & Decontamination Procedures
- ◆ Require that respiratory protection as set forth in Respiratory Protection be worn in affected area until area is cleared for reoccupancy in accordance with Work Area Clearance
- ◆ Leave Critical Barriers in place until completion of work and insure that the operation of the pressure differential system in the Work Area results in a flow of air from the balance of the building into the affected area
- ◆ If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Changing Room as set forth in Decontamination Units at entry point to affected area

- ◆ 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 Work Area Clearance

If the high reading was the result of other causes initiate corrective action as determined by Environmental Support Network, Inc.

Effect on Contract Sum:

Contractor will complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by abatement activities. The Contract Sum and schedule will not be adjusted for additional work caused by high airborne fiber counts.

Fibers Counted:

The following procedure will be used to resolve any conflicts when elevated asbestos levels are determined.

Large Fibers:

"Airborne Fibers" referred to above include all fibers regardless of composition as counted by phase contrast microscopy (PCM), unless additional analysis by transmission or scanning electron microscopy demonstrates to the satisfaction of Environmental Support Network, Inc. that non-asbestos fibers are being counted. "Airborne Fibers" counted in samples analyzed by scanning or transmission electron microscopy shall be asbestos fibers, greater than 5 microns in length and greater than 0.25 microns in diameter.

ANALYTICAL METHODS:

The following methods will be used by the Environmental Consultant in analyzing filters used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.

Phase Contrast Microscopy (PCM) will be performed using the NIOSH 7400 method.

Transmission Electron Microscopy (TEM) will be performed using the analysis method set forth in the AHERA regulation 40 CFR Part 763 Appendix A.

SAMPLE VOLUMES:

General:

The number and volume of air samples taken by the Environmental Consultant will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical method used.

SCHEDULE OF AIR SAMPLES:

Before Start of Work:

The Environmental Consultant has secured the following base line before start of work. This base line is 0.01 fibers per cc. Any level above this constitutes an elevated level of fibers.

Daily:

From start of work of erecting Temporary Enclosures through the work of Project Decontamination, the Environmental Consultant may be taking samples on a daily basis.

Additional samples may be taken at Environmental Support Network, Inc.'s discretion. If airborne fiber counts exceed allowed limits additional samples will be taken as necessary to monitor fiber levels.

LABORATORY TESTING:

The services of a testing laboratory will be employed by the Owner to perform laboratory analyses of the air samples. A technician will be at the job site, and samples will be sent daily by carrier for next day delivery, so that verbal reports on air samples can be obtained within 36 hours.

- ◆ A complete record of all air monitoring and results will be furnished to the Contractor
- ◆ The Contractor will have access to all air monitoring tests and results
- ◆ Written Reports of all air monitoring tests will be posted at the job site on a daily basis.

PART 2 - EXECUTION

PERSONAL MONITORING:

Owner will not be performing air monitoring to meet Contractor's OSHA requirements for personnel sampling or any other purpose. This is the responsibility of the contractor. Results for each abatement worker and supervisor will be analyzed daily and posted outside the work area daily. No work will be conducted until the previous day's results are posted.

END OF SECTION – 13-02-40

SECTION 13-03-00 - TEMPORARY FACILITIES

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to work of this section.

DESCRIPTION OF REQUIREMENTS:

General:

Contractor will provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

SUBMITTALS

Before the Start of Work:

Contractor shall submit the following to the Environmental Consultant for review. Begin no work until these submittals are returned with Environmental Consultant's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

Scaffolding:

Contractor will submit list of rolling and fixed scaffolding intended for use on the project. Submit sufficient detail to indicate compliance with applicable worker safety regulations or other requirements.

Hot water heater:

Contractor will submit manufacturer's name, model number, size in gallons, heating capacity, power requirements.

Decontamination Unit Sub-Panel:

Contractor will submit product data.

Ground Fault Circuit Interrupters (GFCI):

Contractor will submit product data.

Lamps and Light Fixtures:

Contractor will submit product data.

Temporary Heating Units:

Contractor will provide product data.

Temporary Cooling Units:

Contractor will provide product data and installation instructions.

Self Contained Toilet Units:

Contractor will provide product data and name of sub-contractor to be used for servicing self contained toilets. Submit method to used for servicing.

First Aid Supplies:

Contractor will provide list of contents of first aid kit. Submit in form of check list.

Fire Extinguishers:

Contractor will provide product data. Submit schedule indicating location at job site.

PART 2 - PRODUCTS

MATERIALS AND EQUIPMENT:

General:

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

SCAFFOLDING:

Contractor will 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 shall comply with all applicable OSHA provisions.

Contractor will equip rungs of all metal ladders, etc. with an abrasive non-slip surface.

Contractor will provide a nonskid surface on all scaffold surfaces subject to foot traffic.

WATER SERVICE:

Temporary Water Service Connection:

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

Water Hoses:

Contractor will 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. Contractor will 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.

ELECTRICAL SERVICE:

General:

Contractor will comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.

Temporary Power:

Contractor will provide service to Decontamination Unit subpanel with minimum 60 amp, 2 pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.

Voltage Differences:

Contractor will provide identification warning signs at power outlets which 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 shall be provided where required to provide voltages necessary for work operations.

Ground Fault Protection:

Contractor will equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type

ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.

Electrical Power Cords:

Contractor will 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.

Lamps and Light Fixtures:

Contractor will provide general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Contractor will protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Contractor will provide exterior fixtures where fixtures are exposed to the weather or moisture.

TEMPORARY HEAT:

Heating Units:

Contractor will provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed. Contractor will use steam or hot water radiant heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

TEMPORARY COOLING:

Cooling Units:

Contractor will provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

SELF-CONTAINED TOILETS:

Self-Contained Toilet Units:

Contractor will provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.

FIRST AID:

First Aid Supplies:

Contractor will comply with governing regulations and recognized recommendations within the construction industry. Contractor will provide a minimum of one-(1) first aid station per six man crew and one in the project office.

FIRE EXTINGUISHERS:

Fire Extinguishers:

Contractor will 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 Contractor will provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.

PART 3 - EXECUTION

SCAFFOLDING:

During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.

Contractor will clean all necessary debris from non-slip surfaces.

At the completion of abatement work Contractor will 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.

INSTALLATION, GENERAL:

General:

Contractor will use qualified tradesmen for installation of temporary services and facilities. Contractor will locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

- ◆ Require that tradesmen accomplishing this work be licensed as required by local authority for the work performed
- ◆ Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project

WATER SERVICE:

General: Water connection is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm each to hot and cold water supply. Install using vacuum breakers or other back flow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of 100 F. Supply hot and cold water to the Decontamination Unit. In addition, water shall be supplied for the following uses:

- ◆ Maintain hose connections and outlet valves in leak proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

ELECTRICAL SERVICE:

General:

Contractor will 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 construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

Lockout:

Contractor will lockout all existing power to or through the work area as described below. 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 facilities are to be provided from temporary electrical panel described below.

- ◆ Lockout power to Work Area by switching off all breakers serving power or lighting circuits in work area. 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 or Owner's designated Representative.

- ◆ Lockout power to circuits running through Work Area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and supply keys to Contractor, Owner and Owner's Representative. If circuits cannot be shut down for any reason, label at intervals 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocutation hazard."

Temporary Electrical Panel:

Contractor will provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work.

Power Distribution System:

Contractor will provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be at least exposed to damage from construction operations.

Circuit Protection:

Contractor will protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.

Temporary Wiring:

Temporary wiring in the Work Area shall 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.

Number of Branch Circuits:

Contractor will provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:

- ◆ One Circuit for each HEPA filtered fan unit
- ◆ For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).
 - One outlet in the work area for each 2500 square feet of work area
 - One outlet at each decontamination unit, located in equipment room
- ◆ 110-120 volt 20 amp branch circuits with 4-gang outlet for Environmental Consultant's exclusive use while conducting air sampling during the work as follows:
 - One in each work area
 - One at clean side of each Decontamination Unit
 - One at each exhaust location for HEPA filtered fan units
- ◆ 110-120 volt 20 amp branch circuits with 4-gang outlet for Environmental Consultant's exclusive use for conducting final air sampling as set forth in Work Area Clearance as follows:
 - Five inside work area
 - Two outside work area in location designated by Environmental Consultant

TEMPORARY LIGHTING:

Lockout:

Contractor will lock out all existing power to lighting circuits in Work Area as described in Temporary Enclosures. Unless specifically noted otherwise existing lighting circuits to the Work Area are not to be used. All lighting to the Work Area and Decontamination facilities is to be provided from temporary electrical panel described above.

Contractor will provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:

- ◆ One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

Contractor will provide lighting in areas where work is being performed as required to supply a 100 foot candle minimum light level.

Contractor will provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.

Contractor will provide lighting in the Decontamination Unit as required to supply a 50 foot candle minimum light level.

Number of Lighting Circuits:

Contractor will provide sufficient lighting circuits as required by the work. All lighting circuits are to originate at temporary electrical panel.

Circuit Protection:

Contractor will protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

TEMPORARY HEAT:

General: Contractor will provide temporary heat where indicated or needed for performance of the Work.

Contractor will maintain a minimum temperature of 70 degrees F.

Contractor will maintain a minimum temperature of 75 degrees F in the shower of the decontamination unit.

TEMPORARY COOLING:

Required Cooling: Contractor will provide units sufficient to supply 20,000 BTU's of cooling per 8,000 cubic feet of work area. Maintain a minimum temperature of 70 degrees F.

SANITARY FACILITIES:

Toilets:

Contractor will provide one self-contained chemical toilet unit in the Work Area for each 30 workers. Facilities shall be maintained throughout the Work. At the end of the job, facilities shall be decontaminated in accordance with these specifications.

FIRE EXTINGUISHERS:

Fire Extinguishers:

Contractor will 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.

END OF SECTION – 13-03-00

SECTION 13-04-00 - TEMPORARY PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

PART 1 - GENERAL

RELATED DOCUMENTS:

Contractor shall drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to work of this section.

Heating and cooling requirements are set forth in Temporary Facilities - Asbestos Abatement.

MONITORING

Contractor will 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).

SUBMITTALS

Before Start of Work:

Contractor will submit design of pressure differential system to Environmental Support Network, Inc. for review. Do not begin work until submittal is returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use. Include in the submittal at a minimum:

- ◆ Number of HEPA filtered fan units required and the calculations necessary to determine the number of machines
- ◆ Description of projected air flow within Work Area and methods required to provide adequate air flow in all portions of the work area
- ◆ Anticipated pressure differential across Work Area enclosures
- ◆ Description of methods of testing for correct air flow and pressure differentials
- ◆ Manufacturer's product data on the HEPA filtered fan units to be used
- ◆ Location of the machines in the Work Area
- ◆ Method of supplying adequate power to the machines and designation of building electrical panel(s) which will be supplying the power
- ◆ Description of work practices to insure that airborne fibers travel away from workers
- ◆ Manufacturer's product data on equipment used to monitor pressure differential between inside and outside of Work Area

On a weekly basis:

Contractor will submit printout from pressure differential monitoring equipment. Contractor will mark printout with date and start of time for each day. Use printout paper that indicates elapsed time in intervals no greater than hours. Indicate on each day's record times of starting and stopping abatement work, type of work in progress, breaks for lunch or other purposes, periods of stop work, and filter changes. Cut printout into segments by day, attach to 8 1/2" by 11" paper. Label with project name, contractors name and date.

QUALITY ASSURANCE:

Contractor will monitor pressure differential at Personnel and Equipment Decontamination Units with a differential pressure meter equipped with a continuous recorder. Meter shall be equipped with a warning buzzer which will sound if pressure differential drops below 0.01" of water.

PART 2 - PRODUCTS

HEPA FILTERED FAN UNITS:

General:

Contractor will supply the required number of HEPA filtered fan units to the site in accordance with these specifications. Use units that meet the following requirements.

Cabinet:

Contractor will be constructed of 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. Provide units whose cabinets are:

- ◆ Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance
- ◆ Arranged to provide access to and replacement of all air filters from intake end
- ◆ Mounted on casters or wheels

Fans:

Rate capacity of fan according to usable air-moving capacity under actual operating conditions.

HEPA Filters: Contractor will provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.

- ◆ Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal
- ◆ Provide HEPA filters that are 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 when tested in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions

- ◆ Provide filters that are marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow

Prefilters, which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of prefiltration are required. Provide units with the following prefilters:

- ◆ First-stage prefilter: low-efficiency type (e.g., for particles 100 um and larger)
- ◆ Second-stage (or intermediate) filter: medium efficiency (e.g., effective for particles down to 5 um)

Contractor will provide units with prefilters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps.

Instrumentation: Provide units equipped with:

- ◆ Magnehelic 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 usable air-handling capacity for various static pressure readings on the Magnehelic gauge affixed near the gauge for reference, or the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at that point
- ◆ Elapsed time meter to show the total accumulated hours of operation

Safety and Warning Devices: Provide units with the following safety and warning devices:

- ◆ Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter
- ◆ Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge
- ◆ Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red)
- ◆ Audible alarm if unit shuts down due to operation of safety systems

Electrical components:

Contractor will provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is to be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.

Manufacturer: Subject to compliance with requirements, provide products of the following:

Aerospace America, Inc.
900 Truman Parkway
P.O. Box 189
Bay City, Michigan 48707

"Aero-Clean 2000"

Asbestos Control Technology, Inc. "Micro-Trap"
P.O. Box 183
Maple Shade, NJ 08052

Control Resource Systems, Inc. "Hog" 2000
670 Mariner Drive
Michigan City, Indiana 46360

Global Consumer Services, Inc. "Red Baron"
1721 N. Highland Avenue
Los Angeles, CA 90028

Tri-Dim Filter Corporation "ACCU-2M"
1431 West Lake Street
Chicago, Illinois 60607

PART 3 - EXECUTION

PRESSURE DIFFERENTIAL ISOLATION

Contractor will 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 breach in the physical isolation of the Work Area. At a minimum, each room is to be considered a work area.

Relative Pressure in Work Area:

Contractor will continuously maintain the work area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal or exceed a static pressure of 0.04 inches of water.

Contractor will accomplish the pressure differential by exhausting a sufficient number of HEPA filtered fan units from the work area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the Work Area. Determine the number of units required for pressure isolation by the following procedure:

- ◆ Establish required air circulation in the work area, personnel and equipment decontamination units
- ◆ Establish isolation by increased pressure in adjacent areas or as part of seals where required
- ◆ Exhaust a sufficient number of units from the work area to develop the required pressure differential

The required number of units to be supplied by the Contractor is the number determined above plus one additional unit.

Vent HEPA filtered fan units to outside of building unless authorized in writing by Environmental Support Network, Inc.

- ◆ Use only new ductwork except for sheet metal connections and elbows

- ◆ Use ductwork and fittings of same diameter or larger than discharge connection on fan unit
- ◆ Use inflatable, disposable plastic ductwork in lengths not greater than 100 feet
- ◆ Use spiral wire-reinforced flex duct in lengths not greater than 50 feet
- ◆ Arrange exhaust as required to inflate duct to a rigidity sufficient to prevent flapping
- ◆ If direction of discharge from fan unit is not aligned with duct use sheet metal elbow to change direction. Use six feet of spiral wire reinforced flex duct after direction change

Contractor will provide isolation of elevators, stair towers, and return air intakes erect seals with an air space at doors to elevators and stair towers. Pressurize this space with HEPA-filtered air so that it is at a pressure greater than either the Work Area elevator shaft or stair tower.

- ◆ Fabricate seal by first sealing door with duct tape and 6 mil polyethylene. Construct a barrier from 1/2" gypsum board supported by 3-5/8" 25 gauge metal studs at 16" on centers. Space face of barrier a minimum of 3" from face of door. Seal barrier with 6 mil sheet plastic and duct tape.
- ◆ Fabricate seal by first sealing door with duct tape and 6 mil polyethylene. Construct a barrier from 1/2" CDX plywood supported by 2" X 4" wood studs at 16" on centers. Space face of barrier a minimum of 3" from face of door. Seal barrier with 6 mil sheet plastic and duct tape. Use plywood and framing lumber that is treated to be fire resistant
- ◆ Pressurize space with exhaust from HEPA filtered fan unit. Continuously maintain a pressure differential with this space a minimum of 0.02 inches of water higher in static pressure than any adjacent space.
- ◆ Locate HEPA filtered fan unit outside of work area. Fabricate a manifold as required to distribute air to individual spaces to be isolated. Provide relief venting at unit as required to prevent shut down due to low air flow while still maintaining required air pressure.

Isolation of Return Air Ductwork: Return air duct work which must be kept operating is located in the Work Area. This duct work is to be isolated from the Work Area by an enclosure forming an annular space around the duct which is positively pressurized with HEPA filtered air.

- ◆ Wrap the duct with 6 mil polyethylene. Seal all polyethylene seams with spray glue and duct tape.
- ◆ Enclose wrapped duct with two layers of polyethylene. Fabricate inner layer from 6 mil polyethylene with all seams sealed with spray glue and duct tape. Arrange outer layer to support inner layer. Fabricate out of reinforced sheet plastic with seams sealed with spray glue and duct tape and reinforced with staples. Support outer layer with a frame work fabricated from 2" x 4"s at 24" on center. Enclosures less than 2'-6' in diameter may be reinforced with box strapping in lieu of wood framing.

AUXILIARY GENERATOR

Contractor will provide auxiliary gasoline-powered generator located outside of the building in a location protected from the weather. Arrange so that if a power failure occurs the generator automatically starts and supplies power to a minimum of 50% of the HEPA filtered fan units in operation.

AIR CIRCULATION IN THE WORK AREA:

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.

Air circulation in the Work Area is a minimum requirement 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.

Determining the Air Circulation Requirements:

Provide a fully operational air circulation system supplying a minimum of the following air circulation rate of 12 air changes per hour.

AFD Units Needed:

Determine Number of Units needed to achieve required air circulation according to the following procedure:

- ◆ Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by the air change rate and multiplying by 60.

Air Circulation Required in Cubic Feet of Air per Minute (CFM) =

$$\frac{\text{Volume of work area (cu. ft.)} \times \text{Number of air changes per hour}}{60 \text{ (minutes per hour)}}$$

Divide the air circulation requirement (CFM) above by capacity of HEPA filtered fan unit(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machine's labeled operating characteristics.

Number of Units Needed =

$$\frac{\text{Air Circulation Requirement (CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}}$$

- ◆ Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing. Also add sufficient AFD's for multiple work area operation, as needed.

EXHAUST SYSTEM:

Pressure differential isolation and air circulation in the Work Area are to be accomplished by an exhaust system as described below.

Exhaust all units from the Work Area to meet air circulation requirement of this section.

Location of HEPA Filtered Fan Units:

Contractor will locate fan unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses Work Area as much as possible. This may be accomplished by positioning the HEPA filtered fan unit(s) at a maximum distance from the worker access opening or other makeup air sources.

Place End of Unit an intake duct or its exhaust duct through an opening in the plastic barrier or wall covering. Seal plastic around the unit or duct with tape.

Vent to Outside of Building, unless authorized in writing by Environmental Support Network, Inc.

Decontamination Units:

Contractor will arrange Work Area and decontamination units so that the majority of make up air comes through the Decontamination Units. Use only personnel or equipment Decontamination Unit at any time and seal the other so that make up air passes through unit in use.

Supplemental Makeup Air Inlets:

Contractor will provide for proper air flow through the Work Area in location approved by Environmental Support Network, Inc. by making openings in the plastic sheeting that allow air from outside the building into the Work Area. Locate auxiliary makeup air inlets as far as possible from the fan unit(s) (e.g., on an opposite wall), off the floor (preferably near the ceiling), and away from barriers that separate the Work Area from occupied clean areas. Cover with flaps to reseal automatically if the pressure differential system should shut down for any reason. Spray flap and around opening with spray adhesive so that if flap closes meeting surfaces are both covered with adhesive. Use adhesive that forms contact bond when dry.

RECIRCULATION SYSTEM:

Pressure differential isolation and air circulation in the Work Area are to be accomplished by a recirculation system as described below.

Recirculate air in the Work Area through HEPA filtered fan units to accomplish air circulation requirements of this section.

Location of Fan Units:

Contractor will locate HEPA filtered fan units so that air is circulated through all parts of the Work Area, and so that required pressure is maintained at all parts of Work Area geometry. Move units as necessary so that in any location where asbestos-containing materials are being disturbed the discharge from one HEPA filtered fan unit is blowing contamination away from workers. Direct air flow in these locations so that it is predominantly toward workers' backs at the breathing zone elevation.

AIR CIRCULATION IN DECONTAMINATION UNITS:

Pressure Differential Isolation:

Contractor shall continuously maintain the pressure differential required for the work area in the:

◆ Personnel Decontamination Unit: across the Shower Room with the Equipment Room at a lower pressure than the Clean room

◆ Equipment Decontamination Unit: Across the Holding Room with the Wash Room at a lower pressure than the Clean Room

Air Circulation:

Contractor shall continuously maintain air circulation in Decontamination Units at same level as required for Work Area.

Air Movement:

Contractor will arrange air circulation through the Personnel Decontamination Unit so that it produces a movement of air from the Clean Room through the Shower Room into the Equipment Room. Maintain continuous minimum velocities of Sixty (60) feet per minute in the breathing zone area of the shower and thirty (30) feet per minute in all other locations of the shower.

USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM:

General:

Each unit shall be serviced by a dedicated minimum 115V-20A circuit with ground fault circuit interrupter (GFCI) supplied from temporary power supply installed under requirements of "Temporary Facilities." Do not use existing branch circuits to power fan units.

Testing the System:

Test pressure differential system before any asbestos-containing material is wetted or removed. After the Work Area has been prepared, the decontamination facility set up, and the fan unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of pressure differential system to Environmental Support Network, Inc.

Demonstrate Condition of Equipment for each HEPA filtered fan unit and pressure differential monitoring equipment including proper operation of the following:

- ◆ Squareness of HEPA Filter
- ◆ Condition of Seals
- ◆ Proper operation of all lights
- ◆ Proper operation of automatic shut down if exhaust is blocked
- ◆ Proper operation of alarms
- ◆ Proper operation of magnehelic gauge
- ◆ Proper operation and calibration on pressure monitoring equipment

Demonstrate Operation of the pressure differential system to Environmental Support Network, Inc. will include, but not be limited to, the following:

- ◆ Plastic barriers and sheeting move lightly in toward Work Area
- ◆ Curtain of decontamination units move lightly in toward Work Area
- ◆ There is a noticeable movement of air through the Decontamination Unit
- ◆ Use smoke tube to demonstrate air movement from Clean Room through Shower Room to Equipment Room
- ◆ Use smoke tubes to demonstrate a definite motion of air across all areas in which work is to be performed
- ◆ Use a differential pressure meter or manometer to demonstrate the required pressure differential at every barrier separating the Work Area from the balance of the building, equipment, and ductwork or outside

Contractor will modify the Pressure Differential System as necessary to demonstrate successfully the above.

Use of System During Abatement Operations:

Contractor will 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.

Do not shut down air pressure differential system during encapsulating procedures, unless authorized by Environmental Support Network, Inc. in writing. Supply sufficient pre-filters to allow frequent changes.

Start abatement work at a location farthest from the fan 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 fan units are operating again.

At completion of abatement work, allow fan units to run as specified 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.

Dismantling the System:

When a final inspection and the results of final air tests indicate that the area has been decontaminated, fan units may be removed from the Work Area. Before removal from the Work Area, remove and properly dispose of pre-filter, decontaminate exterior of machine and seal intake to the machine with 6 mil polyethylene to prevent environmental contamination from the filters.

END OF SECTION - 13-04-00

SECTION 13-07-00 - TEMPORARY ENCLOSURES

PART 1 - GENERAL

RELATED DOCUMENTS:

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

SUBMITTALS:

Before Start of Work:

Contractor will submit the following to Environmental Support Network, Inc. for review. Contractor will not begin work until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use.

Spray Cement:

Contractor will submit the following if necessary.

- ◆ Product description including major components and solvents.
- ◆ Manufacturer's installation instructions. Indicate portions applicable to the project.

Material Safety Data Sheet:

Contractor will submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for spray cement material 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.

Sheet Plastic:

For fire retardant plastic submit test reports on NFPA 701 test.

Signs:

Contractor will submit samples of signs to be used.

PART 2 - PRODUCTS

SHEET PLASTIC:

Polyethylene Sheet:

Contractor will 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. Provide largest size possible to minimize seams, 4.0 or 6.0 mils thick as

indicated, frosted or black as indicated. One clear window of clear polyethylene plastic will be installed at eye level approximately 5 feet from the floor at each containment area.

MISCELLANEOUS MATERIALS:

Duct Tape:

Contractor will provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

Spray Cement:

Contractor will provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

PART 3 - EXECUTION

SEQUENCE OF WORK:

Contractor must carry out work of this section sequentially. Complete each activity before proceeding to the next.

GENERAL:

Work Area:

The work area is the location where asbestos-abatement work occurs. It is a variable of the extent of work of the Contract. It may be a portion of a room or a single room. 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.

Isolation:

Completely isolate the Work Area from other parts of the building so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area 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. Perform all such required cleaning or decontamination at no additional cost to Owner.

Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to completion of Work Area isolation.

Remove all removable furniture that has been designated uncontaminated by the Contract Documents or Environmental Support Network, Inc. Also remove uncontaminated equipment, and/or supplies from the Work Area before commencing work, or completely cover with two (2) layers of polyethylene sheeting, at least 6 mil in thickness, securely taped in place with duct tape. Such furniture and equipment shall be considered outside the work area unless covering plastic or seal is breached.

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.

Lockout power to Work Area by switching off all breakers serving power or lighting circuits in work area. 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 or Environmental Consultant.

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 or Environmental Consultant. If circuits cannot be shut down for any reason, label at intervals 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocutation hazard." Label circuits in hidden locations but which may be affected by the work in a similar manner.

Inspection Windows: Install inspection windows in locations shown on the plans or as directed by Environmental Support Network, Inc. Each inspection window is to have a 24" X 24" viewing area fabricated from 1/4" acrylic or polycarbonate sheet. Install window with top at 6'-6" above floor height in a manner that provides unobstructed vision from outside to inside of the Work Area. Protect window from damage from scratching, dirt or any coatings used during the work. A sufficient number of windows are to be installed to provide observation of all portions of the Work Area that can be made visible from adjacent areas. Inspection windows that open into uncontrolled area are to be covered with a removable plywood hatch secured by lock and key. Provide keys to Environmental Support Network, Inc. for all such locks.

EMERGENCY EXITS:

Contractor will provide emergency exits and emergency lighting as set forth below:

Emergency Exits:

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

- ◆ Arrange exit door so that it is secure from outside the Work area but permits exiting from the Work Area.
- ◆ 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.
- ◆ Provide lighted EXIT sign at each exit.
- ◆ Provide battery-operated emergency lighting that switches on automatically in the event of a power failure.

CONTROL ACCESS:

Access will be controlled at the entrance to each hall by erecting a polyethylene barrier or wooded barrier. Inside this area are the access points to each work area. Doors and other openings must be secured to isolate Work Area.

- ◆ After receiving written authorization from Environmental Support Network, Inc. lock all doors into Work Area, or, if doors cannot be locked, chain shut. Cover any signs that direct emergency exiting, either outside or inside of Work Area, to locked doors. Do not obstruct doors required for emergency exits from Work Area or from building.

Locked Access: Arrange Work Area so that the only access into Work Area is through lockable doors to personnel and equipment decontamination units.

- ◆ Install temporary doors with entrance type locksets that are key lockable from the outside and always unlocked and operable from the inside. Do not use deadbolts or padlocks.
- ◆ Replace locksets or passage sets on doors leading to decontamination units with temporary locksets for duration of the project. Remove any deadbolts or padlocks. Use entry type locksets that are key lockable from outside and always unlocked and operable from inside. After meeting contractor release criteria Work Area Clearance reinstall original locks, passage sets and locksets and adjust for proper operation.

Provide one key for each door to Owner and Environmental Support Network, Inc. and maintain one key in clean room of decontamination unit (3 total).

Visual Barrier:

Where the Work Area is immediately adjacent to or within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that the work procedures are not visible to building occupants. Where this visual barrier would block natural light, substitute frosted or woven rip-stop sheet plastic in locations approved by Environmental Support Network, Inc.

Provide Warning Signs at each locked door leading to Work Area reading as follows:

<u>Legend</u>	<u>Notation</u>
KEEP OUT	3" Sans Serif Gothic or Block
BEYOND THIS POINT	1" Sans Serif Gothic or Block
ASBESTOS ABATEMENT WORK	1" Sans Serif Gothic or Block
IN PROGRESS	1" Sans Serif Gothic or Block
BREATHING ASBESTOS DUST MAY BE HAZARDOUS TO YOUR HEALTH	14 Point Gothic

ALTERNATE METHODS OF ENCLOSURE:

Alternate methods of containing the Work Area may be submitted to Environmental Support Network, Inc. for approval in accordance with procedures set forth in Product Substitution. Do not proceed with any such method(s) without prior written approval of Environmental Support Network, Inc.

RESPIRATORY AND WORKER PROTECTION:

Before proceeding beyond this point in providing Temporary Enclosures:

- ◆ Provide Worker Protection
- ◆ Provide Respiratory Protection
- ◆ Provide Personnel Decontamination Unit

CRITICAL BARRIERS:

Contractor must completely separate the Work Area from other portions of the building, and the outside by closing all openings with sheet plastic barriers at least 6 mil in thickness, or by sealing cracks leading out of Work Area with duct tape.

Contractor will individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and 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 of lighting fixtures to avoid melting or burning of sheeting.

Contractor will provide sheet plastic barriers at least 6 mil in thickness as required to seal openings completely from the Work Area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.

Contractor will mechanically support sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic. Following are acceptable methods of supporting sheet plastic barriers. Alternative support methods may be used if approved in writing by Environmental Support Network, Inc.

- ◆ Plywood squares 6" x 6" x 3/8" held in place with one 6d smooth masonry nail or electro-galvanized common nail driven through center of the plywood and duct tape on plastic so that plywood clamps plastic to the wall. Locate plywood squares at each end, corner and at maximum 4 feet on centers.
- ◆ Nylon or polypropylene rope or wire with a maximum unsupported span of 10 feet, minimum 1/4" in diameter suspended between supports securely fastened on either side of opening at maximum 1 foot below ceiling. Tighten rope so that it has 2" maximum dip. Drape plastic over rope from outside Work Area so that a two foot long flap of plastic extends over rope into Work Area. Staple or wire plastic to itself 1" below rope at maximum 6" on centers to form a sheath over rope. Lift flap and seal to ceiling with duct tape or spray cement. Seal loop at bottom of flap with duct tape. Erect entire assembly so that it hangs vertically without a "shelf" upon which debris could collect.

Contractor will Provide Pressure Differential System.

Contractor will clean housings and ducts of all overspray materials prior to erection of any Critical Barrier that will restrict access.

Permanently Seal Access To Tunnels:

Contractor will provide a sealed, plywood, and stable (secured) enclosure over the tunnel access points. This plywood should be secured with nails and painted with colors as requested by the Environmental Consultant. For the purposes of this bid, the contractor should assume the need for 12 sheets of plywood.

PREPARE AREA:

Scaffolding:

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

Contractor will 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 with the work.

Contractor will clean all contaminated furniture, equipment, and or supplies with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Cleaning and Decontamination Procedures, prior to being moved or covered. All equipment furniture, etc. is to be deemed contaminated unless specifically declared as uncontaminated on the drawings or in writing by Environmental Support Network, Inc.

Contractor will Clean All Surfaces In Work Area with a HEPA filtered vacuum or by wet wiping prior to the installation of primary barrier.

PRIMARY BARRIER:

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.

- ◆ Cover wood paneling in Work Area with one layer of 6 mil sheet plastic.
- ◆ Cover carpeting and flooring with two (2) layers of polyethylene sheeting at least 6 mil in thickness. Place corrugated cardboard sheets between the top and middle layers of polyethylene.
- ◆ Do not use strippable coating as an adhesive to hold sheet plastic in place.
- ◆ Coat or cover windows into Work Area:
- ◆ Cover windows with one layer of 6 mil sheet plastic. Cover sheet plastic with a thin but continuous coat of window or wall coating.

Sheet Plastic: Protect surfaces in the Work Area with two (2) layers of plastic sheeting on floor and walls, or as otherwise directed on the Contract Drawings or in writing by Environmental Support Network, Inc. Perform work in the following sequence.

Cover Floor of Work Area with 2 individual layers of clear polyethylene sheeting, each at least 6 mil in thickness, turned up walls at least 12 inches. Form a sharp right angle bend at junction of floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Both spray-glue and duct tape all seams in floor covering. Locate seams in top layer six feet from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer.

Cover Carpeting with two (2) layers of polyethylene sheeting at least 6 mil in thickness. Place corrugated cardboard sheets between the top and middle layers of polyethylene.

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 02084 of this specification.

Cover all walls in 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 Environmental Support Network, Inc.

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.

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 dry.

ISOLATION AREA:

Maintain isolation areas via critical barriers at the entrance to each hallway and/or the nearest entrance prior to approaching the entrance to the work site. These areas will be marked by signage. These areas will be under negative air pressure.

- ◆ In unoccupied rooms located between Work Area and adjacent occupied portions of the building.
- ◆ In locations where separation between Work Area and occupied portions of building is formed by sheet plastic and/or temporary barriers.
- ◆ Floor below Work Area.

Form isolation area by controlling access to the space in the same manner as a Work Area. Physically isolate the space from the Work Area and adjacent areas. Accomplish physical isolation by:

- ◆ Installing critical barriers in unoccupied space.
- ◆ Erecting a second Critical Barrier a minimum of 3'-0" away from Work Area.

STOP WORK:

If the Critical or Primary barrier falls or is breached in any manner stop work immediately. Do not start work until authorized in writing by Environmental Support Network, Inc.

EXTENSION OF WORK AREA:

Extension of Work Area:

If the Critical 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 Project Decontamination.

SECONDARY BARRIER:

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.

EXTERIOR ENCLOSURES:

Contractor will construct exterior enclosures as a Critical Barrier as necessary to completely enclose the work. Fabricate from reinforced polyethylene sheeting and 2" x wood framework. Attach to existing building components or brace as necessary for lateral stability. Construct walls to meet all state and local regulations for construction of temporary buildings. Construct to resist a wind of 30 MPH, slope ceiling to permit drainage of rain water.

END OF SECTION – 13-07-00

SECTION 13-09-00 - REGULATED AREAS

PART 1 - GENERAL

RELATED DOCUMENTS:

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

RELATED WORK SPECIFIED ELSEWHERE:

Required Supervision and OSHA Competent Person: is specified in other sections.

Worker Protection - Asbestos Abatement: is specified in other sections.

Respiratory Protection: is specified elsewhere.

Wet Decontamination Facilities: are described in other sections.

DESCRIPTION OF WORK:

Work of this section consists of preparing a Regulated Area for work of the following specification sections only. Do not use procedures set forth in this section in connection with any other work.

- ◆ Entry Into Controlled Areas
- ◆ Small-Scale Short-Duration Work
- ◆ Cleaning and Decontamination Procedures
- ◆ Gypsum Drywall - Asbestos Enclosures
- ◆ Repair of Insulation and Lagging

SUBMITTALS

Before the Start of Work:

Contractor will submit the following to Environmental Support Network, Inc. for review. Begin no work until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

HEPA Filtered Vacuum Cleaners: Submit product data.

Signs: Submit samples of each type of sign to be used.

Warning Tape: Submit samples.

PART 2 - EQUIPMENT

HEPA Filter Vacuum Cleaners:

Manufacturer: Subject to compliance with requirements, provide products of one of the following:

Nilfisk of America Inc.
225 Great Valley Parkway
Malvern, PA 19355

HEPA filtered
Vacuums

Clayton Associates, Inc.
P.O. Box 589
30 Southard Avenue
Farmingdale, NJ 07727

ACE Model HEPA Vacuum

Hako Minuteman
111 South Route 53
Addison, IL 60101

Hako Minuteman
HEPA Vacuums

Vactagon Pneumatic Systems, Inc.
18 Homestead Place
Bergenfield, NJ 07621

Vaculoader HEPA Vacuum

Pullman-Holt (White) Corporation
PO Box 277
Fultonville, New York 12072

HEPA Filtered
Vacuums

Plastic Sheet:

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

PART 3 - EXECUTION

SECURING WORK AREA:

Contractor will secure work area from access by occupants, staff or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area, or by constructing temporary wood stud and plywood barriers.

DEMARCATION OF REGULATED AREA:

Contractor will demarcate each Regulated Area with a sheet plastic drop sheet as described below.

Post warning signs as specified.

First Sign:

Contractor will provide warning signs at each locked door leading to the controlled area reading as follows:

Legend

Notation

KEEP OUT

3 inch Block

Second Sign:

Immediately inside the locked door and outside the controlled area post an approximately 20 inch by 14 inch manufactured caution sign 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

Where the controlled area is in a large area such as on part of a boiler room or open office area, delineate area with 3 inch wide polyethylene ribbon with the printed warning, "CAUTION ASBESTOS REMOVAL". Install this ribbon at between 3 and 4 feet above the floor.

SCHEDULING:

Work may be carried out during normal working hours in those areas which can be completely secured by lockable doors from access by building occupants and staff, and which have HVAC equipment that can be shut down and locked off. Otherwise, work is to be carried out after building occupants and cleaning staff have left.

GENERAL PROCEDURES:

The following precautions and procedures have application to work of this section. Workers must exercise caution to avoid release of asbestos fibers into the air:

- ◆ Setup and management of the controlled area is to be under the supervision of a OSHA Competent Person as described in the Project Coordination - Asbestos Abatement section.
- ◆ Before start of work comply with requirement for worker protection, and respiratory protection.
- ◆ Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Regulated Area.
- ◆ Shut down any air handling equipment bringing air into or out of the Regulated Area.
- ◆ Clean any existing dust or debris from the floor and walls, and other surface in the immediate location of the work prior to commencing work by damp-mopping or by use of a High Efficiency Particulate Air (HEPA) filtered vacuum.
- ◆ Cover floor in vicinity of Work Area and six (6) feet beyond, with 6 mil polyethylene drop sheet. Where work is adjacent to wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the Regulated Area.

- ◆ Seal all openings, supply and exhaust vents, and convectors within ten (10) feet of the Work Area with 6 mil polyethylene sheeting secured and completely sealed with duct tape.
- ◆ Perform the work per the appropriate specification section while on plastic drop sheet.
- ◆ Immediately remove any asbestos-containing debris which collects on the drop sheet either by using a HEPA vacuum or by spraying with amended water or removal encapsulant, collecting with wet paper towels, placing in a disposal bag while still wet, and cleaning surface of plastic sheet with wet paper towels.
- ◆ Complete the following at completion of work in an area before stepping off drop sheet.
- ◆ While standing on plastic sheet thoroughly HEPA vacuum ladder and any tools used and pass to worker standing off sheet.
- ◆ Worker standing off the sheet HEPA vacuum thoroughly the worker standing on the sheet.
- ◆ Worker on the sheet thoroughly HEPA vacuum all surfaces of the plastic sheet, bags, and any other items on the sheet including his own feet.

If work day is complete or if next Work Area is in another secured area: all workers remove paper suits turning them inside out while doing so. The person on the sheet step with each foot off the sheet as the foot covers are removed.

Fold sheet and all its contents toward the center.

Place the sheet in a properly labeled disposal bag.

Neck down the bag and collapse it with the HEPA vacuum.

Twist the bag shut, bend over and seal with duct tape by wrapping around bag neck at least 3 times.

Clean all surfaces of the Work Area by use of a HEPA filter vacuum until no visible residue remains.

At completion of work require all workers to complete decontamination procedures in accordance with Worker Protection - Repair & Maintenance.

Remove respirators using the procedure in Worker Protection - Repair & Maintenance.

Or, at completion of work require all workers to complete wet decontamination procedures if the changing area has demonstrated elevated levels of asbestos fibers in accordance with Worker Protection - Asbestos-Abatement.

END OF SECTION – 13-09-00

SECTION 13-10-00 - ENTRY INTO CONTROLLED AREAS

PART 1 GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION OF WORK:

The provisions of this section apply when entry is required into an area where such entry could cause contamination of portions of the building and/or where respiratory or other worker protection measures are required.

Unless authorized in writing by Environmental Support Network, Inc., the provisions of this section apply to only the following situations:

- ◆ Entry into the space above a suspended ceiling where there is exposed friable asbestos-containing fire proofing, visible asbestos-containing debris, or other friable asbestos-containing surfacing material when the ceiling tiles in an area no greater than 6 feet by 12 feet are to be removed.
- ◆ Entry through sealed access (access door, hatchway, locked door) into an area with friable asbestos-containing surfacing materials or visible debris.

Use procedures of this section only where historic airborne fiber data demonstrate that airborne fiber counts in the breathing zone of those performing the work can be continuously maintained at less than 0.2 fibers per cubic centimeter.

PART 2 EXECUTION

REGULATED AREA:

Prior to beginning work in this area establish a regulated area as described in the Regulated Areas Section of this specification.

ACCESS THROUGH SUSPENDED CEILINGS:

Remove acoustical panels inside the work area only. Prior to conducting any asbestos abatement, remove ceiling suspension system using the following sequence:

- ◆ Follow worker protection procedures including disposable coveralls and respirators

- ◆ Follow local area protection procedures. Spread layer of 6 mil polyethylene sheet on floor 6 feet further in extent than the size of the ceiling opening to be made.

- ◆ HEPA vacuum around edges of all panels to be removed.

- ◆ While holding nozzle of HEPA vacuum in vicinity slowly lift one edge of center ceiling panel. Immediately HEPA vacuum space at lifted edge. Lift entire panel straight up and HEPA vacuum all four sides.

- ◆ Place panel on top of adjacent ceiling.

- ◆ Place intake duct to HEPA Filtered Fan Unit per in space above ceiling and fasten in place. Operate machine continuously while ceiling is open.

Note that the operation of the HEPA vacuum is intended to clean the air in the location of the work. As such the nozzle should be kept above the ceiling as much as possible and the canister on the floor.

- ◆ Climb to a position which permits access to the top of the ceiling adjacent to the removed panel.

- ◆ Working in the space above the ceiling, HEPA vacuum both sides of the ceiling panel first removed and hand it down into a 6 mil polyethylene bag for storage.

- ◆ Remove loose material hanging from the friable asbestos- containing material with the suction from the HEPA vacuum.

- ◆ Pass wand of operating HEPA vacuum through air between asbestos-containing material and top of ceiling.

- ◆ HEPA vacuum the tops of all ceiling panels which are in reach.

- ◆ Carefully HEPA vacuum the crack between the suspension system and ceiling panels from the top for all ceiling panels within reach.

- ◆ Remove ceiling panels as required while constantly HEPA vacuuming all four edges of panel and suspension system.

- ◆ Working in space above ceiling HEPA vacuum both sides on each panel removed and hand each down into a 6 mil polyethylene bag which is labeled as specified.

- ◆ Maintain HEPA vacuum in operation with nozzle above ceiling and exhaust at floor for the entire time that the ceiling is open and work is being done above the ceiling.

- ◆ When above-ceiling work is complete replace ceiling panels.

- ◆ HEPA vacuum worker's head, arm, and shoulders before climbing down from ceiling.

- ◆ HEPA vacuum ladder while climbing down.

- ◆ While standing on plastic sheet thoroughly HEPA vacuum ladder and pass it to person standing off sheet.

ENTRY INTO CONTROLLED AREAS:

Use same procedure as above except that ceiling tiles do not need to be removed.

If access is through a wall hatch or door, duct tape floor sheet to wall or threshold.

If access is into large area such as crawl tunnel, comply with worker protection requirements but use HEPA vacuum only for work procedures in the area.

All of the above work will only be conducted inside a negative air containment system a.k.a. work area.

PERSONNEL DECONTAMINATION:

At the end of all work all personnel will exit the work area by way of decontamination showers, air locks, etc. and decontaminate as required by Worker Protection - Asbestos Abatement.

END OF SECTION – 13-10-00

SECTION 13-11-00 - WORKER PROTECTION

PART 1 - GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION OF WORK:

This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection. Other references to worker protection are in other sections of this specification.

AHERA Accreditation:

All workers are to be accredited as Abatement Workers as required by the AHERA regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.

State and Local License: All workers are to be trained, certified and accredited as required by state or local code or regulation.

Train, in accordance with 29 CFR 1926, 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:

- ◆ Methods of recognizing asbestos
- ◆ Health effects associated with asbestos
- ◆ Relationship between smoking and asbestos in producing lung cancer
- ◆ Nature of operations that could result in exposure to asbestos
- ◆ Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
 - Engineering controls
 - Work Practices
 - Respirators
 - Housekeeping procedures
 - Hygiene facilities
 - Protective clothing
 - Decontamination procedures
 - Emergency procedures
 - Waste disposal procedures
- ◆ Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1910.134
- ◆ Appropriate work practices for the work

- ◆ Requirements of medical surveillance program
- ◆ Review of 29 CFR 1926
- ◆ Pressure Differential Systems
- ◆ Work practices including hands on or on-job training
- ◆ Personal Decontamination procedures
- ◆ Air monitoring, personal and area

MEDICAL EXAMINATIONS:

Contractor will 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 examinations for all workers who will enter the Work Area for any reason. Examination shall as a minimum meet OSHA requirements as set forth in 29 CFR 1926 In addition, provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker. Chest x-ray results will be certified by a physician with a "B" card certification.

SUBMITTALS:

Before Start of Work:

Submit the following to Environmental Support Network, Inc. for review. Do not start work until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use.

AHERA Accreditation:

Submit copies of certificates from an EPA-approved AHERA Abatement Workers course for each worker as evidence that each asbestos Abatement Worker is accredited as required by the AHERA Regulation 40 CFR 763 Appendix C to Subpart E, April 30, 1987.

State and Local License:

Submit evidence that all workers have been trained, certified and accredited as required by state or local code or regulation.

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.

Workers Photograph I.D.:

All workers will provide a photographic identification and a copy to Environmental Support Network, Inc. prior to the start of work.

Training Program:

Submit a course outline of the worker training course. Include date and time course was given, name and title of teacher.

Report from Medical Examination:

Contractor will submit a valid report of acceptable medical condition 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:

- ◆ Name and Social Security Number
- ◆ Physicians Written Opinion from examining physician including at a minimum the following:
 - Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos.
 - Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
 - 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.
- ◆ Copy of information that was provided to physician in compliance with 29 CFR 1926
- ◆ 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.

Notarized Certifications: Submit certification signed by an officer of the abatement contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.

PART 2 - EQUIPMENT

PROTECTIVE CLOTHING:

Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers and all other persons who may need to enter the work area in the Work Area. Provide a sufficient number for all required changes, for all workers others entering the Work Area.

Hard Hats: Provide head protective (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Environmental Support Network, Inc. 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.

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 and dispose of as asbestos-contaminated waste at the end of the work.

ADDITIONAL PROTECTIVE EQUIPMENT:

Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Environmental Support Network, Inc., and other authorized representatives who may inspect the job site. Provide two (2) respirators and six (6) complete coveralls and, where applicable, six (6) respirator filter changes per day. All respirators will be full face respirators only.

PART 3 - EXECUTION

GENERAL:

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.

Each time Work Area is entered remove all 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.

DECONTAMINATION PROCEDURES:

Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:

Type C Supplied Air or Powered Air-Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area:

- ◆ When exiting area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.

- ◆ Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 - Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR) hold blower unit above head to keep canisters dry.

 - With respirator still in place thoroughly wash body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.

 - Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breath.

- Carefully wash face piece of respirator inside and out.

- If using PAPR: shut down in the following sequence, first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.

- Shower completely with soap and water.

- Rinse thoroughly.

- Rinse shower room walls and floor prior to exit.

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

Within Work Area:

Contractor will require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above, then dress in street clothes before entering the non-Work Areas of the building.

CERTIFICATE OF WORKER'S ACKNOWLEDGMENT:

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.

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.

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

TRAINING COURSE: You must 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 must have included the following:

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

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Signature _____ Social Security No _____

Printed Name _____ Witness _____

END OF SECTION – 13-11-00

SECTION 13-12-00 - RESPIRATORY PROTECTION

PART 1 - GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION OF WORK:

Contractor will instruct and train each worker involved in asbestos abatement or maintenance and repair of friable asbestos-containing materials in proper respiratory use and require that each worker always wear a respirator, properly fitted on the face in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

STANDARDS:

Except to the extent that more stringent requirements exist, the following 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 were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.

- OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910.1001 and Section 1910.134. 29 CFR 1926.1101.
- CGA - Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.1 "Commodity Specification for Air".
- CSA - Canadian Standard Association, Rexdal, Ontario, Standard Z180.1-1978, "Compressed Breathing Air".
- ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2-1980.
- NIOSH - National Institute for Occupational Safety and Health
- MSHA - Mine Safety and Health Administration

SUBMITTALS:

Before Start of Work:

Submit the following to Environmental Support Network, Inc. for review. Do not begin work until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use.

Product Data:

Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.

System Diagram:

When a Type "C" supplied air respiratory system is required by the work, submit drawing showing assembly of components into a complete supplied air respiratory system. Include diagram showing location of compressor, filter banks, backup air supply tanks, hose line connections in Work Area(s), routing of air lines to Work Area(s) from compressor.

Operating Instruction:

Submit complete operating and maintenance instructions for all components and systems as a whole. Submittal is to be in bound manual form suitable for field use.

Respiratory Protection Program:

Submit Contractor's written respiratory protection program manual as required by OSHA 1926.58.

Respiratory Protection Schedule:

Submit level of respiratory protection intended for each operation required by the project. Submit this information on the "Respiratory Protection schedule" on the form included at the end of this Section.

Resume information:

Submit resume and information on training for individual monitoring the operation of supplied air respiratory systems. Submit training certifications where applicable.

AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS:

Provide air used for breathing in Type "C" supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade H or CSA Z180.1 whichever presents the more stringent quality standard:

Provide air used for breathing in Type "C" supplied air respiratory systems that meets or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade D:

DELIVERY:

Deliver replacement parts, etc., not otherwise labeled by NIOSH or MSHA to job site in manufacturer's containers.

PART 2 - EQUIPMENT

POWERED AIR PURIFYING RESPIRATORS (PAPR):

Respirator Bodies: Provide Full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate.

Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z228.2 (1980). In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

Non-Permitted Respirators: Do not use single use, disposable quarter face or half face respirators. No half-face respirators of any type are allowed for any worker for any reason at any time.

SUPPLIED AIR RESPIRATOR SYSTEMS:

Provide equipment capable of producing air of the quality and volume required by the above reference standards applied to the job site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.

Face Piece and Hose: Provide full face piece and hose by same manufacturer that has been certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure face-piece.

Auxiliary backup system:

In atmospheres which contain sufficient oxygen (greater than or equal to 19.5% oxygen) provide a pressure-demand full face piece supplied air respirator equipped with an emergency back up HEPA filter.

Escape air supply:

In atmospheres which are oxygen deficient (less than 19.5% oxygen) provide a pressure-demand full face piece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.

Backup air supply:

Provide a reservoir of compressed air located outside the Work Area which will automatically maintain a continuous uninterruptable source of air automatically available to each connected face piece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average-sized adult male engaged in moderately strenuous activity.

Warning device:

Provide a warning device that will operate independently of the building's power supply. Locate so that alarm is clearly audible above the noise level produced by equipment and work procedures in use, in all parts of the Work Area and at the compressor. Connect alarm to warn of:

- ◆ Compressor shut down or other fault requiring use of backup air supply
- ◆ Carbon Monoxide (CO) levels in excess of 5 PPM/V

Carbon Monoxide (CO) Monitor:

Continuously monitor and record on a strip chart recorder Carbon Monoxide (CO) levels. Place monitors in the air line between compressor and back-up air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices".

Compressor Shut Down:

Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sounded if any of the following occur:

- ◆ Carbon Monoxide (CO) concentrations exceed 5 PPM/v in the air line between the filter bank and backup air supply
- ◆ Compressor temperature exceeds normal operating range

Compressor Motor - Provide a compressor driven by an electric motor. Do not use a gas or diesel engines to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.

After-Cooler: Provide an after-cooler at entry to filter system which is capable of reducing temperatures to outside ambient air temperatures.

Self Contained Breathing Apparatus (SCBA): Configure system to permit the recharging of 1/2 hour 2260 PSI SCBA cylinders.

PART 3 - EXECUTION

GENERAL:

Respiratory Protection Program:

Comply with ANSI Z88.2 - 1980 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.

Require that respiratory protection be used at all times that there is any possibility of disturbance of asbestos-containing materials whether intentional or accidental.

Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with this document.

Regardless of Airborne Fiber Levels, require that the minimum level of respiratory protection used be full-face air-purifying respirators with high efficiency filters.

Do not allow the use of single-use, disposable, quarter-face respirators, or half face respirator for any purpose.

FIT TESTING:

Initial Fitting:

Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by a Certified Industrial Hygienist. Fit types of respirator to be actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing has been provided.

On a Weekly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.

Upon Each Wearing, require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2 (1980).

TYPE OF RESPIRATORY PROTECTION REQUIRED:

Provide Respiratory Protection as indicated in paragraph below.

Type "C" Supplied-air respirators: Full face piece pressure demand supplied air respirators are to be used by all workers engaged in the removal, or demolition of pipes, structures, or equipment covered or insulated with asbestos, or in the removal or demolition of asbestos insulation or coverings, or any other activity which results in airborne asbestos fibers in excess of 2.0 fibers per cubic centimeter. All personnel will wear this-type respirator until sampling confirms the usability of PAPR's.

Powered Air Purifying Respirators with full facepieces are to be worn by all workers engaged in the removal, or demolition of pipes, structures, or equipment covered or insulated with asbestos, or in the removal or demolition of asbestos insulation or coverings, or any other activity which results in or may result in airborne asbestos fibers in excess of 0.2 fibers per cubic centimeter.

Under no circumstances are half-face respirators allowed.

PERMISSIBLE EXPOSURE LIMIT (PEL):

8-Hour Time Weighted Average (TWA) of asbestos fibers to which any worker may be exposed shall not exceed 0.2 f/cc.

Fibers:

For purposes of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), or NIOSH 7400 procedure.

Electron Microscopy:

If Transmission Electron Microscopy (TEM) is used to determine airborne fiber levels, only asbestos fibers will be enumerated, but fibers of any size detected by the testing of Work Area Clearance will be counted.

Phase Contrast Microscopy:

If Phase Contrast Microscopy (PCM) is used to determine airborne fiber levels, all fibers will be enumerated by the testing of Work Area Clearance and will be counted.

RESPIRATORY PROTECTION FACTOR:

<u>Respirator Type</u>	<u>Protection Factor</u>
Air purifying: Negative pressure respirator High efficiency filter Half face piece	Allowed if NEA is present
Air purifying: Negative pressure respirator High efficiency filter full face piece	Allowed if NEA is present
Powered Air Purifying (PAPR): Positive pressure respirator High efficiency filter Full face piece	50
Type C supplied air: Positive pressure respirator Pressure demand or other positive pressure mode Full face piece	2,000
Type C supplied air: Positive pressure respirator Pressure demand or other positive pressure mode Full face piece Equipped with an auxiliary positive pressure Self-contained breathing apparatus (SCBA)	10,000
Self-contained breathing apparatus (SCBA): Positive Pressure respirator Pressure demand or other positive pressure mode Full face piece	10,000

AIR PURIFYING RESPIRATORS:

Powered air purifying - full face mask:

Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

TYPE "C" RESPIRATOR:

Air Systems Monitor: Continuously monitor the air system operation including compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual, trained by manufacturer of the equipment in use or by a Certified Industrial Hygienist, in the operation and maintenance of the system to provide this monitoring. Assign no other duties to this individual which will take him away from monitoring the air system.

END OF SECTION - 13-12-00

SECTION 13-13-00 - DECONTAMINATION UNITS

PART 1 - GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION OF WORK:

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.

RELATED WORK SPECIFIED ELSEWHERE:

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

SUBMITTALS

Before the Start of Work:

Submit the following to Environmental Support Network, Inc. for review. Do not begin work until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

Personnel Decontamination Unit:

Provide shop drawing showing location and assembly of personnel decontamination units.

Equipment Decontamination Unit:

Provide shop drawing showing location and assembly of equipment decontamination units.

Shower Pan:

Provide shop drawing.

Shower Walls:

Provide product data.

Shower Head and Controls:

Provide product data.

Filters:

Provide product data and shop drawing of installation on decontamination unit.

Hose Bib:

Provide product data.

Shower Stall:

For Wash Down Station provide product data and shop drawing showing and modifications.

Elastomeric membrane:

Provide product data.

Lumber:

Provide product data on fire resistance treatment.

Sump Pump:

Provide product data.

Signs:

Submit samples of signs to be used.

PART 2 - PRODUCTS

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. Provide largest size possible to minimize seams, 4.0 or 6.0 mil thick as indicated, frosted or black as indicated.

Reinforced Polyethylene Sheet:

Where plastic sheet is the only separation between the Work Area and building exterior, provide translucent, nylon reinforced, laminated, 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. Provide largest size possible to minimize seams, 4.0 or 6.0 mil thick as indicated, frosted or black as indicated.

Duct Tape:

Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.

Spray Adhesive:

Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

Shower Pan:

Provide one piece waterproof shower pan 4' x 8' by 6" deep. Fabricate from seamless fiberglass minimum 1/16" thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seams, copper or lead with soldered seams, or a seamless liner of minimum 60 mil thick elastomeric membrane.

Shower Walls:

Provide 8' long by approximately 7' high walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally support as necessary for stability.

Shower Head and Controls:

Provide a factory-made shower head producing a spray of water which 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.

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.

- ◆ Primary Filter - Passes particles 20 microns and smaller
- ◆ Secondary Filter - Passes particles 5 microns and smaller

Hose Bib:

Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4" National Standard male hose outlet.

Shower Stall:

For Wash Down Station provide leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3' x 3' square with minimum 6' high sides and back. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4'-0" above drain pan. Connect drain to a reservoir, pump water from reservoir through filters to a drain or store and use for amended water. Mount filters inside shower stall on back wall beneath hose bib.

Lumber:

Provide kiln dried lumber of any grade or species.

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

PERSONNEL DECONTAMINATION UNIT:

Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Drying 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.

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 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 plastic flapped doorway.
- ◆ 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.
- ◆ An existing room may be utilized as the Changing Room if it is suitably located and of a configuration whereby workers may enter the Changing Room directly from the Shower Room. Protect all surfaces of room with sheet plastic as set forth in Temporary Enclosures. Authorization for this must be obtained from Environmental Support Network, Inc. in writing prior to start of construction. Submit written request detailing layout and protective measures proposed.
- ◆ Maintain floor of changing room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.
- ◆ Damp wipe all surfaces twice after each shift change with a disinfectant solution.
- ◆ Provide posted information for all emergency phone numbers and procedures.
- ◆ Provide 1 storage locker per employee.
- ◆ Provide all other components indicated on the contract drawings.

Airlock:

Provide an airlock between Drying Room and Changing Room. This is a transit area for workers.

- ◆ Separate this room from Drying Room and Changing Room by sheet plastic flapped doorways.
- ◆ Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
- ◆ Separate this room from the Drying and Changing Rooms with airtight walls fabricated of 6 mil polyethylene.

Drying Room:

Provide a drying room as an airlock and a place for workers to dry after showering.

- ◆ Construct room by providing a pan continuous with or draining to Shower Room pan. Install a freely draining wooden or non-skid metal floor in pan at elevation of top of pan.

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

- ◆ Separate this room from the Changing Room and Shower Room with airtight walls fabricated of 6 mil polyethylene.
- ◆ Separate from Changing Room by a sheet plastic flapped doorway.
- ◆ Provide a continuously adequate supply of disposable bath towels.

Shower Room:

Contractor will provide a completely watertight 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.

- ◆ Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.
- ◆ Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
- ◆ Separate this room from the Drying Room and Airlock with airtight walls fabricated of 6 mil polyethylene.
- ◆ Provide splash proof entrances to Drying Room and Airlock with doors arranged in the following configuration:
 - ◆ Shower Room construct a door frame out of nominal 2" x 4" lumber with 1-1/2" jambs (sides) and 1-1/2" head (top) and sill (bottom). Attach to this door frame two overlapping flaps of plastic, fastened at the head (top) and jambs (sides) (by clamping between a 1-1/2" x 3/4" batten and frame). Overlap the flaps a minimum of 6" in a direction that presents a shingle-like configuration to the water stream from the shower. Overlap sill (bottom) by 1-1/2" minimum. Arrange so that any air movement out of the Work Area will cause the flaps to seal against the door frame.

- ◆ Provide shower head and controls.
- ◆ Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.
- ◆ Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.
- ◆ Arrange so that water from showering does not splash into the Changing or Equipment Rooms.
- ◆ 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.
- ◆ Provide flexible hose shower head.
- ◆ Pump waste water to drain or to storage for use in amended water. 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.
- ◆ Provide hose bib.
- ◆ Provide all other items indicated on contract drawings.

Airlock:

Contractor will provide an airlock between Shower Room and Equipment Room. This is a transit area for workers. Separate this room from Equipment Room by a sheet plastic flap doorway.

- ◆ Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
- ◆ Separate this room from the Equipment Room and Shower Room with airtight walls fabricated of 6 mil polyethylene.
- ◆ Separate from Equipment Room by a sheet plastic flapped doorway.

Equipment Room (contaminated area):

Contractor will 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 flapped doorway.
- ◆ Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
- ◆ Separate this room from the Shower Room and Work Area with airtight walls fabricated of 6 mil polyethylene.

Contractor will provide a drop cloth layer of sheet plastic on floor in the Equipment Room for every shift change expected. Roll drop cloth layer of plastic from Equipment Room into Work Area after each shift change. Replace before next shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

Airlock:

Contractor will provide an airlock between Equipment Room and Work Area. This is a transit area for workers.

- ◆ Separate this room from Equipment Room and Work Area by a sheet plastic flapped doorways.
- ◆ Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
- ◆ Separate this room from the Equipment Room and Work Area with airtight walls fabricated of 6 mil polyethylene.

Work Area:

Contractor will separate Work Area from the Equipment Room by 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.

Decontamination Sequence:

Contractor will require that all workers adhere to the following sequence when entering or leaving the Work Area.

Entering Work Area:

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.

- ◆ Any additional clothing and equipment left in Equipment Room needed by the worker are put on in the Equipment Room
- ◆ Worker proceeds to Work Area

Exiting Work Area:

- ◆ 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 such as boots, hard hats, goggles, gloves are to be stored in contaminated end of the Equipment Room
- ◆ Disposable coveralls are placed in a bag for disposal with other material

- ◆ Require that Decontamination procedures be followed by all individuals leaving the Work Area
- ◆ After showering, the worker moves to the Changing Room and dresses in either new coveralls for another entry or street clothes if leaving

EQUIPMENT DECONTAMINATION UNIT:

Contractor will 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.

Arrange with airlocks between rooms as required below.

Wash Down Station:

Provide an enclosed Shower Unit located in Work Area just outside Wash Room as an equipment, bag and container cleaning station.

- ◆ Fabricate waterproof floor extending 6' - 0" beyond Wash Down station in all directions. Install seamless waterproof membrane over area and extend over curbs on all four sides. Form curbs from 2" x 4" lumber laid on the flat
- ◆ Waterproof membrane is to be fabricated from elastomeric membrane
- ◆ Waterproof membrane is to be fabricated from minimum 10 mil polyethylene
- ◆ Do not allow water to collect on waterproof membrane. Remove continuously with a wet vacuum or mops.

Wash Room:

Provide wash room for cleaning of bagged or containerized asbestos-containing waste materials passed from the Work Area.

Construct wash room of nominal 2" x wood framing and polyethylene sheeting, at least 6 mil in thickness and located so that packaged materials, after being wiped clean, can be passed to the Holding Room.

Separate this room from the Work Area by a single flapped door of 6 mil polyethylene sheeting.

- ◆ Provide a drop cloth layer of plastic on floor in the Wash Room for every load-out operation. Roll this drop cloth layer of plastic from Wash Room into Work Area after each load-out. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

Airlock:

Provide an airlock between Wash Room and Holding Room. This is a transit area.

- ◆ Separate this room from adjacent spaces by a sheet plastic flapped doorway

- ◆ Separate this room from the rest of the building and adjacent spaces with airtight walls fabricated of 6 mil polyethylene

Holding Room:

Provide Holding Room as a drop location for bagged asbestos-containing materials passed from the Wash Room. Construct Holding Room of nominal 2" x wood framing and polyethylene sheeting, at least 6 mil in thickness and located so that bagged materials cannot be passed from the Wash Room through the Holding Room to the Clean Room.

- ◆ Separate this room from the adjacent rooms by flapped doors fabricated from 6 mil. single ply plastic material

Airlock:

Provide an airlock between Holding Room and Clean Room. This is a transit area.

- ◆ Separate this room from adjacent spaces by a sheet plastic flap doorway
- ◆ Separate this room from the rest of the building and adjacent spaces with airtight walls fabricated of 6 mil polyethylene

Clean Room:

Provide Clean Room to isolate the Holding Room from the building exterior. If possible, locate to provide direct access to the Holding Room from the building exterior.

- ◆ Erect Critical and Primary Barriers as described in "Temporary Enclosures" in an existing space. If no space exists, construct Clean Room of 2X wood framing and polyethylene sheeting, at least 6 mil in thickness
- ◆ Separate this room from the exterior by a single flap door of 6 mil polyethylene sheeting

Load-out Area:

The load-out area is the transfer area from the building to a truck or dumpster. It may be the Clean Room of the Equipment Decontamination unit or a separate room or loading dock area. Erect Critical and Primary barriers as described in "Temporary Enclosures" in load-out area.

- ◆ During transfer of material from load-out area erect primary barriers as described in "Temporary Enclosures" as necessary to seal path from load-out area to truck or dumpster.

Decontamination Sequence:

Take all equipment or material from the Work Area through the Equipment Decontamination Unit according to the following procedure:

- ◆ At wash down station, thoroughly wet clean contaminated equipment or sealed polyethylene bags and pass into Wash Room.

- ◆ When passing equipment or containers into the Wash Room, close all doorways of the Equipment Decontamination Unit, other than the doorway between the Wash down Station and the Wash Room. Keep all outside personnel clear of the Equipment Decontamination Unit.
- ◆ Once inside the washroom, wet clean the bags and/or equipment.
- ◆ When cleaning is complete pass items into Holding Room. Close all doorways except the doorway between the Holding room and the Clean Room.
- ◆ Workers from the building exterior enter Holding Area and remove decontaminated equipment and/or containers for disposal.
- ◆ Require these workers to wear full protective clothing and appropriate respiratory protection.
- ◆ At no time is a worker from an uncontaminated area to enter the enclosure when a removal worker is inside.

CONSTRUCTION OF THE DECONTAMINATION UNITS:

Walls and Ceiling:

Construct airtight walls and ceiling using polyethylene sheeting, at least 6 mil in thickness. Attach to existing building components or a temporary framework.

Floors:

Use 2 layers (minimum) of 6 mil polyethylene sheeting to cover floors in all areas of the Decontamination Units. Use only clear plastic to cover floors.

Flap Doors:

Fabricated from three (3) 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. Provide a minimum of three feet (3') between doors to airlocks.

If the Decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 1/4 inch hardboard or 1/2 inch plywood "ceiling" with polyethylene sheeting, at least 6 mil in thickness covering the top of the "ceiling".

Visual Barrier:

Where the Decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the Decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs

covered with minimum 1/4 inch thick hardboard or 1/2 inch plywood. Where the solid barrier is provided, sheeting need not be opaque.

Alternate methods of providing Decontamination facilities may be submitted to Environmental Support Network, Inc. for approval. Do not proceed with any such method(s) without written authorization of Environmental Support Network, Inc.

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.

CLEANING OF DECONTAMINATION UNITS:

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.

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.

SIGNS:

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

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

3/4" Block

ALL PERSONS SHALL DON PROTECTIVE
CLOTHING (COVERINGS) BEFORE
ENTERING THE WORK AREA

3/4" Block

ALL PERSONS SHALL SHOWER IMMEDIATELY
AFTER LEAVING WORK AREA AND BEFORE
ENTERING THE CHANGING AREA

3/4" Block

END OF SECTION – 131300

SECTION 13-15-00 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

SUMMARY

This Section specifies administrative and procedural requirements governing the Contractor's selection of products for use in the project.

The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."

Standards:

Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

Administrative procedures for handling requests for substitutions made after award of the Contract are included under Section "Product Substitutions."

DEFINITIONS

Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms such are self-explanatory and have well recognized meanings in the construction industry.

"Products" are items purchased for use in performing the work or for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

"Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturers published product literature, that is current as of the date of the Contract Documents.

"Foreign Products", as distinguished from "domestic products," are items substantially manufactured (50 percent or more of the product's value) outside of the United States and its possessions, or produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of nor living within the United States and its possessions.

"Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

"Equipment" are products that may be either operational or fixed.

- ◆ Operational Equipment are products with operating parts, whether motorized or manually operated, that requires temporary or permanent service connections, such as wiring or piping.

- ◆ Fixed Equipment are products necessary for accomplishing the work that are used as a temporary facility during the work and removed afterward.

SUBMITTALS

Required Submittals:

A general listing of products requiring submittals is included at the end of "Submittals." This listing may not be complete. Submittal requirements are found in each specification section. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed.

Product List Schedule:

Contractor will prepare a schedule showing products specified in a tabular form acceptable to Environmental Support Network, Inc. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.

Coordinate the product list schedule with the Contractor's Construction Schedule and the Schedule of Submittals.

Form:

Contractor will prepare the product listing schedule with information on each item tabulated under the following column headings:

- ◆ Related Specification Section number
- ◆ Generic name used in Contract Documents
- ◆ Proprietary name, model number and similar designations
- ◆ Manufacturer's name and address
- ◆ Supplier's name and address
- ◆ Installer's name and address
- ◆ Projected delivery date, or time span of delivery period

Environmental Support Network, Inc.'s Action:

Environmental Support Network, Inc. will respond in writing to the Contractor within 2 weeks of receipt of the completed product list schedule. No response within this time period constitutes no objection to listed manufacturers or products, but does not constitute a waiver of the requirement that products comply with Contract Documents. Environmental Support Network, Inc.'s response will include a list of unacceptable product selections, containing a brief explanation for this action.

QUALITY ASSURANCE

Compatibility of Options:

When the Contractor is given the option of selecting between two or more products for use on the project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Contractor will deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.

- ◆ Schedule delivery to minimize long-term storage at the site and overcrowding of construction spaces.
- ◆ Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
- ◆ Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
- ◆ Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
- ◆ Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
- ◆ Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.
- ◆ Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

PRODUCT SELECTION

General Product Requirements:

Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.

Contractor will provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

Standard Products:

Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

Product Selection Procedures:

Product selection is governed by the Contract Documents and governing regulations, not by previous project experience. Procedures governing product selection include the following:

Proprietary Specification Requirements:

Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.

Semi-proprietary Specification Requirements:

Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.

The term "or equal," or "or approved equal" comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

Non-Proprietary Specifications:

When the Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

Descriptive Specification Requirements:

Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

Performance Specification Requirements:

Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.

- ◆ Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

Compliance with Standards, Codes and Regulations:

Where the Specifications only require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified.

PART 3 - EXECUTION

INSTALLATION OF PRODUCTS

Contractor will comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work.

- ◆ Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 13-15-00

SECTION 13-17-00 - PROJECT CLOSEOUT

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

SUMMARY

This Section specifies administrative and procedural requirements for project close-out, including but not limited to:

- ◆ Inspection procedures
- ◆ Project record document submittal
- ◆ Submittal of warranties
- ◆ Final cleaning

SUBSTANTIAL COMPLETION

Preliminary Procedures:

Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

In the Application for Payment coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the work claimed as substantially complete. Include supporting documents for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

- ◆ If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the work is not complete.
- ◆ Advise Owner of pending insurance change over requirements.
- ◆ Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
- ◆ Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
- ◆ Submit record drawings, final project photographs, damage or settlement survey, and similar final record information.
- ◆ Make final change over of permanent locks and transmit keys to the Owner. Advise Owner of change over in security provisions.
- ◆ Complete start up testing of systems. Discontinue or change over and remove temporary facilities from the site, along with construction tools, and similar elements.

Complete final clean up requirements, including touch up painting. Touch up and otherwise repair and restore marred exposed finishes.

Inspection Procedures:

On receipt of a request for inspection, Environmental Support Network, Inc. will either proceed with inspection or advise the Contractor of unfilled requirements. Environmental Support Network, Inc. will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

- ◆ Environmental Support Network, Inc. will repeat inspection when requested and assured that the work has been substantially completed.
- ◆ Results of the completed inspection will form the basis of requirements for final acceptance.

FINAL INSPECTION

Reinspection Procedure:

The Environmental Consultant will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to Environmental Support Network, Inc.

Upon completion of reinspection, Environmental Support Network, Inc. will prepare a Certificate of Final Acceptance, or advice the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for Final Acceptance.

If necessary, reinspection will be repeated.

RECORD DOCUMENT SUBMITTALS

General:

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 Environmental Support Network, Inc.'s reference during normal working hours.

Record Specifications:

Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.

- ◆ Upon completion of the work, submit record Specifications to Environmental Support Network, Inc. for the Owner's records.

Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with 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 Environmental Support Network, Inc. for the Owner's records.

PART 2 - EXECUTION

FINAL CLEANING

General:

General cleaning during construction is required by the General Conditions and included in Section "Temporary Facilities".

Cleaning:

Employ experienced workers for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

- ◆ Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
- ◆ Remove labels that are not permanent labels.
- ◆ Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
- ◆ Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
- ◆ Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
- ◆ Clean the site, including landscape development areas, of rubbish, litter, and foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

Removal of Protection:

Remove temporary protection and facilities installed for protection of the work during construction.

Compliance:

Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION 13-17-00

SECTION 13-62-00 - PROJECT DECONTAMINATION

PART 1 - GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION OF REQUIREMENTS:

General:

Contractor will decontaminate the Work Area following asbestos abatement as follows.

- ◆ If the asbestos abatement work is on damaged or friable materials the work is a four step procedure with two cleanings of the Primary Barrier plastic prior to its removal and two cleanings of the room surfaces to remove any new or existing contamination. Unless specifically indicated otherwise all materials are considered damaged or friable for purposes of this section.
- ◆ If the asbestos abatement work is on undamaged and non-friable materials the decontamination procedure is a two step procedure with two cleanings of the Primary Barrier plastic to remove contamination, thus preventing contamination of the building when the Work Area isolation barriers are removed.
- ◆ In both cases operation of the pressure differential system is used to remove airborne fibers generated by the abatement work.

RELATED WORK SPECIFIED ELSEWHERE:

Removal of Gross Debris:

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:

- ◆ Removal of Asbestos-Containing Materials
- ◆ Removal of Asbestos-Contaminated Debris
- ◆ Gypsum Drywall - Asbestos Enclosures
- ◆ Encapsulation of ACM

Work Area Clearance:

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

PART 2 - EXECUTION

GENERAL:

Work of This Section

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.

Work of This Section also includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:

- ◆ Primary and Critical Barriers erected
- ◆ Decontamination Unit erected
- ◆ Pressure Differential System installed

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 Work Area.

START OF WORK:

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.

Start of Work:

Work of this section begins with the cleaning of the Primary Barrier. At start of work the following will be in place:

Primary Barrier:

Two layers of polyethylene sheeting on floor and one layer on walls.

Critical Barrier:

An airtight barrier between the Work Area and other portions of the building or the outside.

Critical Barrier Sheeting:

Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.

Decontamination Units: For personnel and equipment in operating condition.

Pressure Differential System:

Must remain in operation at all times.

FIRST CLEANING:

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 Air (HEPA) filtered vacuum. (Note: A HEPA vacuum may 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.

Remove All Filters in Air Handling System(s):

Remove filters and dispose of as asbestos-containing waste in accordance with requirements of Disposal of Asbestos-Containing Waste Material.

Wait 96 Air Changes:

Wait 96 air changes to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain Pressure Differential System in operation for the entire 96 air change period.

SECOND CLEANING:

Second Cleaning:

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

Encapsulation of substrate:

Perform encapsulation of substrate or installation of spray-applied finishes or fireproofing, where required, at this time. Maintain Pressure Differential System in operation during encapsulation work. Perform work only after meeting the following requirements:

- ◆ Surfaces to be covered have met the requirements for a visual inspection in this section.
- ◆ Airborne fiber counts in the Work Area are at or below 70 structures per field as measured by transmission electron microscopy. Contractor must allow 72 hours for sample turnaround.

Removal of Primary Barriers:

Immediately following the second cleaning of the Primary plastic, remove all Primary Barrier sheeting and Material Decontamination Unit, if there is one, leaving only:

Critical Barrier:

Which forms the sole barrier between the Work Area and other portions of the building or the outside.

Critical Barrier Sheeting:

Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.

Decontamination Unit:

For personnel, in operating condition.

Pressure Differential System:

Maintain in continuous operation.

THIRD CLEANING:

Third cleaning:

Carry out a third cleaning of all surfaces in the work area in the same manner as the first cleaning immediately after removal of Primary plastic. This cleaning is now being applied to existing room surfaces. Take care to avoid water marks or other damage to surfaces.

Contractor's Testing:

At the completion of the above cleaning visually inspect all surfaces. Re-clean if any dust, debris, etc. is found. At completion of this inspection sweep entire Work Area including walls, ceilings, ledges, floors and other surfaces in the Work Area with exhaust from forced-air equipment (leaf blower with approximately 1 horsepower electric motor or equivalent). Do not direct forced-air equipment at any seal in any Critical Barrier. If any debris or dust is found repeat the cleaning. Continue this process until no debris dust or other material is found while sweeping of all surfaces with forced-air equipment.

Cover carpeting in the work area with 6 mil polyethylene during Contractor's testing procedures. Seal plastic to baseboards with duct tape.

Cleaning Carpeting:

At the completion of cleaning of all surfaces except carpeting, HEPA vacuum carpeting designated to remain in Work Areas using a floor cleaning attachment adjusted so that rubber skirting is in contact with carpet surface. Use a passive (non-power brush type) floor attachment with rubber floor seals and adjustable above-floor height. Completely clean carpeting in one direction with each pass of the floor attachment overlapping the previous pass by one-half the attachment width. At the completion of one such cleaning, vacuum clean in the same manner in a direction at right angles to the initial cleaning.

Wait 96 Air Changes to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain pressure differential system in operation for the entire 96 air change period.

FINAL CLEANING:

Final Cleaning:

Carry out a final cleaning of all surfaces in the Work Area in the same manner as the previous cleaning.

Contractor's Testing:

At the completion of the above cleaning visually inspect all surfaces. Re-clean if any dust, debris, etc. is found. At completion of this inspection sweep entire Work Area including walls, ceilings, ledges, floors and other surfaces in the Work Area with exhaust from forced air equipment (leaf blower with approximately 1 horsepower electric motor or equivalent). Do not direct forced air equipment at any seal in any critical barrier. If any debris or dust is found repeat the final cleaning. Continue this process until no debris dust or other material is found while sweeping of all surfaces with forced air equipment.

Wait 96 Air Changes:

Wait 96 air changes to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use oscillating fans as necessary to assure circulation of air in all parts of Work Areas during this period. Maintain Pressure Differential System in operation for the entire 96 air change period.

VISUAL INSPECTION:

96 Air Changes After Final Cleaning Perform a Complete Visual Inspection of the entire Work Area:

All surfaces will be inspected with a white glove method including, ceiling, walls, floor, 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. During visual inspection sweep entire work area including walls, ceilings, ledges, floors, and other surfaces in the room with exhaust from forced air equipment (leaf blower with approximately 1 horsepower electric motor or equivalent). If any debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, and if after sweeping of all surfaces with leaf blower, no debris, residue, dust or other material is found, complete the certification at the end of this section. Visual inspection is not complete until confirmed in writing, on the certification, by the Environmental Consultant.

Temporary Electric and Lighting:

Provide at least a five-(5) electric outlet access and a minimum of 100 foot candles of lighting on all surfaces in the areas to be subjected to visual inspection. Provide hand held lights providing 150 foot candles at 4 feet capable of reaching all locations in work area.

Lifts:

Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

LOCKBACK:

Encapsulation of Substrate:

Where applicable, perform encapsulation of substrate or installation of spray-applied finishes or fireproofing, where required, before Removal of Work Area Isolation as specified below. Maintain Pressure Differential System in operation during encapsulation work.

REMOVAL OF WORK AREA ISOLATION:

After all requirements of this section and Work Area Clearance have been met:

- ◆ Shut down and remove the Pressure Differential System. Seal HEPA filtered fan units, HEPA vacuums and similar equipment with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from Work Area.
- ◆ Remove Personnel Decontamination Unit.
- ◆ Remove the Critical Barriers separating the Work Area from the rest of the building. Remove any small quantities of residual material found upon removal of the plastic sheeting with wet wiping, HEPA filtered vacuum cleaners and local area protection. If significant quantities, as determined by Environmental Support Network, Inc., are found then the entire area affected shall be decontaminated as specified in Cleaning & Decontamination Procedures.
- ◆ Remove all equipment, materials, debris from the work site.
- ◆ Dispose of all asbestos-containing waste material as specified in Disposal of Asbestos Containing Waste Material.

SUBSTANTIAL COMPLETION OF ABATEMENT WORK:

Asbestos Abatement Work is Substantially Complete upon meeting the requirements of this section and Work Area Clearance, including submission of:

- ◆ Certificate of Visual Inspection and Final Clearance Air Testing
- ◆ Receipts Documenting proper disposal.
- ◆ Punch list detailing repairs to be made and incomplete items.

CERTIFICATE OF VISUAL INSPECTION:

Following this section is a "Certificate of Visual Inspection". This certification is to be completed by the Contractor and certified by the Environmental Consultant.

END OF SECTION – 13-62-00

CERTIFICATION OF VISUAL INSPECTION

In accordance with "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): _____

ENVIRONMENTAL SUPPORT NETWORK, INC.'S CERTIFICATION

Environmental Support Network, Inc. hereby certifies that he has accompanied the contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's Certification above is a true and honest one.

(Signature) _____

Date _____

(Print Name) _____

(Print Title) _____

SECTION 13-66-00 - CLEANING AND DECONTAMINATION

PART 1 - GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION OF THE WORK:

The extent of cleaning and decontamination work is shown on the drawings.

- ◆ Removal and disposal of visible debris
- ◆ Decontamination of carpeting in the area of the debris (if necessary) and for 10 feet beyond any visible debris
- ◆ Removal, cleaning and decontamination of other entities within the above area

The work includes decontamination of the areas indicated in the "Listing of Asbestos Volumes and Related Abatement Work," found at the end of this section.

RELATED WORK SPECIFIED ELSEWHERE:

Work Area Clearance:

Specified in Work Area Clearance

PART 2 EXECUTION

GENERAL:

Complete the following before start of work of this section:

- ◆ Regulated Areas
- ◆ Respiratory Protection
- ◆ Worker Protection

WET CLEANING:

Accomplish wet cleaning during decontamination with paper towels or disposable rags:

- ◆ Immerse paper towel or rag in container of water with surfactant, or diluted removal encapsulant. Contractor must first test the encapsulant on the surface to assure that damage to the surface does not occur.

- ◆ Wring out

- ◆ Fold into quarters

- ◆ Wipe surface once and refold to a fresh face of cloth. Proceed in this manner until all available faces of paper towel or rag have been used.

- ◆ Dispose of paper towel or rag

Do not place rag back in container to rinse out or for any other purpose. If a used towel or rag comes in contact with water, empty container and refill.

- ◆ Material adhered to a surface with removal encapsulant may require the application of additional removal encapsulant to facilitate cleaning.

REMOVAL OF ASBESTOS-CONTAINING DEBRIS

Work of this Section is limited to the cleanup of a small quantity of amassed debris which has fallen from an architectural finish, fire-proofing, or thermal insulation on pipes, boilers and other thermal equipment.

Remove asbestos-containing debris and decontaminate the area involved using the following sequence:

- ◆ Shut down all ventilation into room.

- ◆ Seal entry to work area with 6 mil polyethylene. Slit polyethylene for entry. Install a flap to cover the slit automatically; tape slit closed after entry.

- ◆ Start HEPA vacuum before entering the area.

- ◆ Use the HEPA vacuum to clean a path at least 6 feet wide from the entry point of the work area to the site of the fallen material.

- ◆ Remove all small debris with the HEPA vacuum.

- ◆ HEPA vacuum surfaces of all pieces too large to be removed by the suction of the HEPA vacuum.

- ◆ Pick up such pieces and place in the bottom of a 6 mil polyethylene disposal bag. Place pieces in the bag without dropping and avoiding unnecessary disturbance and release of material.

- ◆ Remove all remaining visible debris with HEPA vacuum.

- ◆ HEPA vacuum an area 3 feet beyond the location in which any visible debris was found in two directions each at right angles to the other.

- ◆ Place a 6 mil polyethylene drop cloth immediately on top of the HEPA vacuumed area before performing any repair work on site from which fall-out occurred.
- ◆ HEPA vacuum the site from which material fell removing all loose material which can be removed by the vacuums suction.
- ◆ Repair or remove remaining material.
- ◆ HEPA vacuum ladder and/or any tools used and pass out of the work area.
- ◆ HEPA vacuum all surfaces in the room starting at the top of wall and working downward to the floor. Then start at corner of floor farthest from Work Area entrance and work towards entrance.
- ◆ HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16" of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one-half the width of the floor attachment. At the completion of one cleaning vacuum the floor a second time at right angles to the first.
- ◆ Secure area from occupancy until air monitoring results per Project Decontamination indicate that area is safe for reoccupancy.

CLEANING AND DECONTAMINATING OBJECTS

Perform all work of decontaminating objects wherever possible on a plastic drop sheet.

- ◆ HEPA vacuum all surfaces of object and immediate area before moving the object.
- ◆ Pick-up object, if possible, and HEPA vacuum all surfaces.
- ◆ Hand to off-sheet worker who will wet-clean object, if possible, and place in storage location.
- ◆ Decontaminate area where object was located by HEPA vacuuming twice, in two perpendicular directions. Wet clean if necessary to remove any debris.
- ◆ Return object to its original location.

DECONTAMINATION OF ROOMS:

Perform all work of decontaminating rooms as follows.

- ◆ Shut down all ventilation into space.
- ◆ Seal entry to Work Area with 6 mil polyethylene. Slit polyethylene for entry. Install a flap to cover the slit automatically; tape slit closed after entry.
- ◆ Install Differential Pressure System in accordance with this specification.

- ◆ Recirculate HEPA filtered fan units in space by operating them so that discharge from machine is back into room. Use one HEPA filtered fan unit for each 2,500 cubic feet of room volume.
- ◆ HEPA vacuum all surfaces in the room starting at the ceiling, then top of wall and working downward to the floor.
- ◆ HEPA vacuum the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16" of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.
- ◆ Operate HEPA filtered fan unit in space for 24 hours minimum.
- ◆ At completion of Decontamination Work workers decontaminate in accordance with Worker Protection - Repair and Maintenance.
- ◆ Secure area from occupancy until air monitoring results per Work Area Clearance indicates area is safe for reoccupancy.

END OF SECTION – 13-66-00

SECTION 13-67-00 - PROJECT DECONTAMINATION - MICROFIBERS

PART 1 - GENERAL

RELATED DOCUMENTS:

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

DESCRIPTION OF THE WORK:

Work of this section is to decontaminate air and all surfaces in each room where highly elevated asbestos levels are determined.

AIRBORNE ASBESTOS FIBER HAZARD:

When any area demonstrates airborne asbestos levels above 2.0 fibers/cc. These fibers are invisible to the human eye. Type "C" Respiratory Protection is to be used at all times in the Work Area.

PART 2 - EXECUTION

GENERAL:

Prior to starting work, complete requirements of:

- ◆ Temporary Pressure Differential and Air Circulation System
- ◆ Decontamination Units (Personnel Decontamination Unit Only)
- ◆ Temporary Enclosure (Critical Barriers Only)
- ◆ Worker Protection - Asbestos Abatement
- ◆ Respiratory Protection

CLEANING AREA:

First Cleaning:

Carry out a first cleaning of all surfaces of the work area including Critical Barrier 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 dry dust or dry sweep. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue cleaning until there is no visible dust, debris or residue on plastic sheeting or other surfaces.

Perform a Complete Visual Inspection:

Inspect the entire Work Area including decontamination unit, sole barrier sheeting, seals over ventilation openings, doorways and windows, etc.) for debris from any sources, residue on surfaces, etc. If any such debris or residue is found repeat the first cleaning and continue the decontamination procedure from that point. When the Work Area is visually clean, complete the Certification at the end of this section.

Wait twenty-four (24) hours to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use 24" diameter floor fans as necessary to assure circulation of air in all parts of Work Areas during this period. Maintain the Differential Pressure System in operation for the entire 24 hour period.

Second Cleaning:

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

Wait 24 hours to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Use 24" diameter oscillating fans as necessary to assure circulation of air in all parts of work areas during this period. Maintain differential pressure system in operation for the entire 24 hour period.

Final Cleaning:

Carry out a final cleaning of all surfaces in the Work Area in the same manner as the first cleaning.

ADDITIONAL CLEANING:

Work of the Base Bid is completed after the final cleaning. Work from this point will be carried on as additional to the Base Bid.

First Additional Cleaning:

If airborne asbestos fiber levels within the Work Area exceed those in make-up air pursuant to, repeat final cleaning.

Air samples will be taken by the Environmental Consultant in each Work Area at the completion of final cleaning. See for Work Area Clearance criteria.

All Filters in the air handling system(s) shall be carefully removed, treated as contaminated material, bagged and disposed of as contaminated waste.

SHORTCYCLING HEPA FILTERED FAN UNITS:

If airborne asbestos fibers in the Work Area still exceed those measured at the source of make up air for the HEPA filtered fan unit(s), operate HEPA filtered fan unit(s), within the Work Area with exhaust from units being returned to Work Area.

Use an extension duct or move the units to various locations in the Work Area. Continue this procedure for 24 hours. At the end of that time final air samples will be secured. Continue this procedure until the Work Area meets clearance criteria.

REMOVAL OF CRITICAL BARRIERS:

After final air samples are found to meet Clearance Criteria remove critical barriers and completely dismantle and remove Decontamination Unit.

Seal HEPA filtered fan units with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before unit is moved from the Work Area.

CERTIFICATE OF VISUAL INSPECTION:

Following this section is a "Certificate of Visual Inspection". This Certification is to be completed by the Contractor and certified by Environmental Support Network, Inc. Submit completed Certificate with Application for Final payment. Final payment will not be made until this Certification is executed.

END OF SECTION - 13-67-00

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section "Project Decontamination - Microfibers" 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.

(Signature) _____

Date _____

(Print) _____

(Title) _____

ENVIRONMENTAL SUPPORT NETWORK, INC. CERTIFICATION

Environmental Support Network, Inc. hereby certifies that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's Certification above is a true and honest one.

(Signature) _____

Date _____

(Print) _____

(Title) _____

SECTION 13-68-00 - WORK AREA CLEARANCE

PART 1 - GENERAL

RELATED DOCUMENTS:

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

Visual Inspection:

Visual inspection is required as a prerequisite of air testing, is set forth in Project Decontamination.

Air Monitoring:

Air monitoring will be performed by the Environmental Consultant during abatement work, is described in Test Laboratory Services.

CONTRACTOR RELEASE CRITERIA:

The Asbestos Abatement Work Area is Cleared when the Work Area is visually clean and airborne asbestos structure concentrations have been reduced to the level specified below.

VISUAL INSPECTION:

Work of this Section will not begin until the visual inspection described in Project Decontamination is complete and has been certified by Environmental Support Network, Inc.

AIR MONITORING:

To determine if the elevated airborne asbestos fiber concentration encountered during abatement operations has been reduced to the specified level, Environmental Support Network, Inc. will secure samples and analyze them according to the following procedures.

- ◆ PCM samples will be secured and analyzed as indicated below.
- ◆ Work Area Clearance upon meeting the PCM Clearance requirements of 0.01 f/cc.

SAMPLING:

All Air Samples will be taken by Environmental Support Network, Inc. using sampling techniques as follows:

- ◆ Before sampling pumps are started a Visual Inspection will be completed by the Environmental Consultant.

◆ Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors or vents. No less than five final clearance air samples will be obtained per 1,000 square feet of area to be cleared. Clearance air samples will be obtained inside each work area.

SCHEDULE OF AIR SAMPLES:

General:

The number and volume of air samples taken and analytical methods used by Environmental Support Network, Inc. will be in accordance with the following schedule. Sample volumes given may vary depending upon the analytical instruments used.

PHASE CONTRAST MICROSCOPY:

In each homogeneous work area after completion of all cleaning work, a minimum of 13 samples will be taken and analyzed as follows:

Location Sampled	Number of Samples	Analysis Method	Analytical Sensitivity Fibers/cc.	Recommended Volume (Liters)	Rate LPM
Each Work Area	5	PCM	0.01	1,200-1,800	1-15
Outside Each Work Area	5	PCM	0.01	1,200-1,800	1-15
Work Area Blank	1	PCM	0.01	0	Open for 30 Seconds
Outside Blank	1	PCM	0.01	0	Open for 30 Seconds
Laboratory Blank	1	PCM	0.01	0	Do Not Open

Analysis will be performed using the analysis method set forth in the relevant applicable standard.

Asbestos Structures referred to in this Section include asbestos fibers, bundles, clusters or matrices, as defined by method of analysis.

Release Criteria:

Decontamination of the work site is complete if the following conditions are met:

Work Area Samples are below filter background levels

- ◆ All Work Area sample volumes are greater than 1,199 liters for a 25 mm. sampling cassette.

- ◆ The average concentration of asbestos on the five Work Area Samples does not exceed the filter background level of 0.01 fibers per cubic centimeter of air.

If these conditions are not met then the decontamination is incomplete and the cleaning procedures shall be repeated.

LABORATORY TESTING:

PHASE CONTRAST MICROSCOPY:

Samples will be read for analysis by Phase Contrast Microscopy (PCM). Verbal results will normally be available during the 2nd working day after receipt of samples by the laboratory. The laboratory is capable of analyzing a maximum of 13 such samples from this project at any one time. All Phase Contrast Microscopy results will be available to the Owner.

END OF SECTION – 13-68-00

SECTION 13-69-00 - REMOVAL OF ASBESTOS WASTE MATERIALS

PART 1 - GENERAL

RELATED DOCUMENTS:

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

RELATED WORK SPECIFIED ELSEWHERE:

Installation of Critical and Primary Barriers, and Work Area Isolation Procedures are set forth in Temporary Enclosures.

Project Decontamination procedures after removal of the Secondary Barrier are specified in Project Decontamination.

Disposal of asbestos-containing waste is specified in Disposal of Asbestos-Containing Waste Material.

SUBMITTALS:

Before Start of Work:

Contractor will submit the following to Environmental Support Network, Inc. for review. Do not start work until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use.

Surfactant:

Contractor will submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.

Removal Encapsulant:

Contractor will submit product data, use instructions, and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.

NESHAP Certification:

Contractor will 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 (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M).

Material Safety Data Sheet:

Contractor will submit the Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each surfactant, encapsulating material

and 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:

Wetting Materials:

For wetting prior to disturbance of Asbestos-Containing Materials use either amended water or a removal encapsulant:

◆ 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.

◆ 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 one ounce of a mixture of 50% polyoxyethylene ester and 50% polyoxyethylene ether in five gallons of water.

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. Provide largest size possible to minimize seams, 6.0 mil thick as indicated, frosted, or black as indicated.

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

Spray Cement:

Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

Disposal Bags:

Provide 6 mil thick leak-tight polyethylene bags labeled as required by Disposal of Asbestos Containing Waste Material.

Fiberboard Drums:

Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.

Paper Board Boxes:

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

Felt:

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

PART 3 - EXECUTION

SECONDARY BARRIER:

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.

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

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.

Install Walkways of black 6 mil plastic between active removal areas and decontamination units to protect Primary Layer from tracked material. Install walkways at the beginning of, and remove at the end of, each work shift.

WORKER PROTECTION:

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.

WET REMOVAL:

Thoroughly wet to satisfaction of Environmental Support Network, Inc. Asbestos-Containing Materials 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. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for amended water or removal encapsulant to penetrate material thoroughly. 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. Perforate outer covering of any installation which has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or use injection equipment to wet material under the covering. Where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.

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

Remove saturated Asbestos-Containing Material in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to Wash Down Station adjacent to Material Decontamination Unit.

Pipe Insulation:

Spray with a mist of amended water or removal encapsulant. Allow amended water or removal encapsulant to saturate material to substrate. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Cut bands holding pre-formed pipe insulation, slit jackets at seams, remove and hand-place in a disposal bag. Remove job-molded fitting insulation in chunks and hand place in a disposal bag. Do not drop to floor. Remove any residue on pipe or fitting with stiff bristle nylon hand brush. In locations where pipe fitting insulation is removed from pipe with straight runs insulated with fibrous glass or other non-asbestos-containing fibrous material, remove fibrous material 6" from the point where it contacts the asbestos-containing insulation.

Under No Circumstances is Dry Removal Allowed.

END OF SECTION – 13-69-00

SECTION 13-70-00 - DISPOSAL OF WASTE MATERIAL

PART 1 - GENERAL

RELATED DOCUMENTS:

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

The Codes and Regulations Section - Asbestos Abatement describes applicable federal, state and local regulations.

DESCRIPTION OF THE WORK:

This section describes the disposal of Asbestos-Containing Materials. Disposal includes packaging of asbestos-containing waste materials. Disposal may be accomplished by landfilling.

SUBMITTALS:

Before Start of Work:

Contractor will submit the following to Environmental Support Network, Inc. for review. Do not start work until these submittals are returned with Environmental Support Network, Inc.'s action stamp indicating that the submittal is returned for unrestricted use.

- ◆ Copy of state or local license for waste hauler.
- ◆ Name and address of landfill where asbestos-containing waste materials are to be buried. Include contact person and telephone number.
- ◆ Name and address of processor where asbestos-containing waste materials are to be processed into non-asbestos waste. Include contact person and telephone number.
- ◆ Product data on process to be used
- ◆ Letters or other documents from the United States Environmental Protection Agency relative to the process:
- ◆ Indicating that the process to be used can produce an asbestos-free product and is capable of satisfying the requirement for an acceptable "alternative" means of complying with Section 61.152(a) of the NESHAP for asbestos
- ◆ Identifying process parameters or operating conditions important to the successful operation of the process
- ◆ Chain of Custody form and form of waste manifest proposed
- ◆ Sample of disposal bag and any added labels to be used.

On a weekly basis submit copies of all manifests and disposal site receipts to Environmental Support Network, Inc.

PART 2 - PRODUCTS:

Disposal Bags:

Provide 6 mil thick leak-tight polyethylene bags labeled with three labels with text as follows:

First Label:

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

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

Third Label:

Provide in accordance with U. S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances: Final Rule. Published November 21, 1986 and revised February 17, 1987:

RQ HAZARDOUS
SUBSTANCE,
SOLID, NOS,
ORM-E, NA 9188
(ASBESTOS)

PART 3 - EXECUTION

Comply with the following sections during all phases of this work:

Worker Protection - Asbestos Abatement
Respiratory Protection

GENERAL:

All waste is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction.

- ◆ Load all asbestos-containing waste material in asbestos disposal bags. All materials are to be contained in two-(2) 6 mil disposal bags.

Carefully load containerized waste in lined, fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.

Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to a sealed and enclosed truck. Open trucks or dumpsters are not permitted.

Do not transport bagged materials on open trucks.

Advise the landfill operator or processor, at least ten days in advance of transport, of the quantity of material to be delivered.

At disposal site unload containerized waste:

- ◆ At a disposal site, sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for re-bagging. Clean entire truck and contents using procedures set forth in Project Decontamination.
- ◆ At a processing site truck and loading dock are arranged as a controlled work area and containerized waste is transferred to storage area by site personnel. All bags including broken ones will be transferred. Clean truck, using procedures set forth in Project Decontamination.

Retain receipts from landfill or processor for materials disposed of.

At completion of hauling and disposal of each load submit copy of waste manifest, chain of custody form, and landfill receipt to Environmental Support Network, Inc.

END OF SECTION – 13-70-00

SECTION 13-80-00 - MONETARY REQUIREMENTS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings, general provisions of Contract, including General and Supplementary Conditions, and other Specification Sections, apply to the work of this section.

PART 2 - EXECUTION:

Contractor's Liability Insurance:

Abatement Contractor will provide "Contractor's Liability Insurance", in the amount of \$1 million. The Insurance must have an "Asbestos Abatement Endorsement". Owner will be provided with a copy of the Insurance Certificate on an ACORD form. Owner and Environmental Support Network, Inc. will be named as Additional Insureds. Insurance shall be underwritten by an on-shore company guaranteed by the State of Ohio.

Liability Insurance shall also include all major divisions of coverage and be on a Comprehensive Basis, including:

- ◆ Premises Operations
- ◆ Independent Contractor's Protective
- ◆ Products and Completed Operations
- ◆ Personal Injury with Employment Exclusion deleted
- ◆ Contractual
- ◆ Owned, non-Owned and hired motor vehicles
- ◆ Broad form property damage including Completed Operations

If the General Policy Coverages are provided by a Policy on a Claims-Made Basis, the policy date or retroactive date shall precede the contract. The termination date of the policy or applicable extended reporting period shall be no later than the ruminant date of coverage to be maintained to be maintained after final payment.

Other Insurance amounts include:

1. State of Ohio Workmen's Compensation	Statutory
2. Comprehensive or CGL Policy Amounts:	
Bodily Injury:	
Per Occurrence	\$ 1,000,000.00
Aggregate	\$ 1,000,000.00
Property Damage:	
Per Occurrence	\$ 1,000,000.00
Aggregate	\$ 1,000,000.00
Products and Completed Operations: (maintained 60 days after final payment)	
Aggregate	\$ 1,000,000.00

Property Damage shall provide X, C, and U coverage

Broad Form property damage coverage shall include completed operations

3. Contractual Liability:

Bodily Injury:	
Per Occurrence	\$ 1,000,000.00
Aggregate	\$ 1,000,000.00
Property Damage:	
Per Occurrence	\$ 1,000,000.00
Aggregate	\$ 1,000,000.00

4. Personal Injury
(with employment exclusion deleted)
 Aggregate

\$ 1,000,000.00

5. Business Automobile Liability
(including owned, non-owned and hired vehicles)

Bodily Injury:	
Per Occurrence	\$ 1,000,000.00
Aggregate	\$ 1,000,000.00
Property Damage:	
Per Occurrence	\$ 1,000,000.00

6. If the policy is a Commercial General Policy

- ◆ General Aggregate shall not be less than \$1 million and it shall apply in total to this project only
- ◆ Fire Damage Limit shall not be less than \$500,000.00
- ◆ Medical Expenses Limit shall not be less than \$25,000.00 on any one person.

Damages for Delayed Completion:

Contractor shall complete work according to the time frame presented in this Specification. For every day the project exceeds the completion date, damages will be paid to the Owner as compensation for Environmental Support Network, Inc.'s additional work hours and expenses as follows.

1. The consultant's daily rate of \$750.00 per 8 hour shift for any part of any shift while abatement or cleaning or other time the contractor or contractor's employees are on-site .
2. The contractor will compensate Owner for additional time as follows and for any and all samples obtained or work completed beyond the scheduled time.

PCM Samples	\$75.00 / sample
HiVol Sampling Pumps	\$100 / day
CAHES/CAHAS Time	\$750.00 / 8 hour shift or part thereof

The above compensation will be completed by reverse charge order. The number and location of all samples obtained will be at the sole discretion of the consultant.

END OF SECTION – 13-80-00

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