

The State of Connecticut
Department of Housing (DOH)
Community Development Block Grant Disaster Recovery Program
(CDBG-DR)

Owner Occupied Rehabilitation and Rebuilding Program (OORR)

BID PACKAGE

For

Rehabilitation/Reconstruction work to:

DeLuca Residence
411 Blohm Street
West Haven, CT 06516

Diversified Technology Consultants, Inc.

2321 Whitney Avenue, Suite 301

Hamden, CT 06518

203.239.4200

June 26, 2014

Rev. 7/1/2014

Rev. 8/29/2014

Project #: 2140



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Section 1

ADVERTISEMENT FOR BIDS

Project # 2140

The State of Connecticut Department of Housing (DOH) is seeking proposals through a Request for Proposal (RFP) process for the rehabilitation, reconstruction and/or mitigation of residential structures damaged by Superstorm Sandy in compliance with all applicable local, federal, and state statutory requirements with special attention paid to requirements for Community Development Block Grants under the United States Department of Housing and Urban Development (“HUD”) Disaster Recovery grant program.

Separated sealed bids for Rehabilitation / Reconstruction work for DeLuca Residence, 411 Blohm Street, West Haven, CT 06516 will be received by Diversified Technology Consultants until 4:00 o'clock PM on **Tuesday, September 16, 2014.**

The Information to Bidders, Form of Bid, Form of Contract, Plans, Specifications, and Form of Bid Bond, Performance and Payment Bond or Security, and other contract documents may be examined on the Department of Housing Hurricane Sandy Recover website at www.ct.gov/doh/ and click on the “Hurricane Sandy” link.

Copies of plans may be downloaded directly from the Department of Housing website under bid notices or obtained at the office of Diversified Technology Consultants located at 2321 Whitney Avenue, Suite 301, Hamden, CT upon payment of \$ 30.00 for each set.

DOH reserves the right to waive any informalities or to reject any or all bids.

Attention to bidders is particularly called to the requirements as to conditions of employment to be observed and minimum wages rates to be paid under the contract (if applicable), Section 3, Segregated Facilities, Section 109 and E. O. 11246.

No bidder may withdraw his bid within 30 calendar days after the actual date of the bid opening thereof.

INFORMATION FOR BIDDERS

Receipt and Opening of Bids:

The State of Connecticut Department of Housing (herein called the "DOH"), invites bids on the form attached. Bids will be received by DOH at the office of Diversified Technology Consultants until **4:00** o'clock PM on **Tuesday, September 16, 2014**.

The envelopes containing the bids must be sealed, addressed to **OORR BID: #2140** at **Diversified Technology Consultants, 2321 Whitney Avenue, Suite 301, Hamden, CT** and designated as bid for Rehabilitation/Reconstruction work to **DeLuca Residence, 411 Blohm Street, West Haven, CT 06516, Project #2140**.

DOH may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement there considered. NO bidder may withdraw a bid within 30 days after the actual date of the opening thereof.

Mandatory Walk Through: All bidders must attend a mandatory walk through of the property designated above. The date and time of the walk through is set for **10:00 AM on Tuesday, September 9, 2014**.

Preparation of Bids:

Each bid must be submitted on the prescribed form and accompanied by Certification by Bidder Regarding Equal Employment Opportunity, Form HUD-950.1, and Certification of Bidder Regarding Section 3 and Segregated Facilities. All blank spaces for bid process must be filled in, in ink or typewritten, in both words and figures, and the foregoing Certifications must be fully completed and executed when submitted.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his/her address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the bid form.

Subcontracts: The bidder is specifically advised that any person, for, or other party to whom it is proposed to award a subcontract under this contract:

1. Must be acceptable to the DOH after verification by the State of the current eligibility status; and,
2. Must submit Form HUD-950.2, Certification by Proposed Subcontractor Regarding Equal Employment Opportunity and Certification of Proposed Subcontractor Regarding Section 3 and Segregated Facilities. Approval of the proposed subcontractor award cannot be given by the DOH unless and until the proposed subcontractor has submitted the Certifications and/or other evidence showing that it has fully complied with any reporting requirements to which it is or was subject. Although the bidder is not required to attach such Certifications by proposed subcontractors to his/her bid, the bidder is here advised of this requirement so that appropriate action can be taken to prevent subsequent delay in subcontract awards.

Method of Bidding: DOH invites the following bid(s):

Qualifications of Bidder: The DOH may make such investigations as he/she deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the DOH all such information and date for

this purpose as the DOH may request. The DOH reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the DOH that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted. The State's set Contractor Prequalifications are available at the Department of Housing's Hurricane Sandy Recovers website www.ct.gov/doh/ and click on the "Hurricane Sandy" link.

Conditions of Work: Each bidder must inform him/herself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his/her obligation to furnish all material and labor necessary to carry out the provision of his/her contract. Insofar as possible the contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.

Addenda and Interpretations: No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally.

Every request for such interpretation should be in writing addressed to: **Michael P. Casey** at Diversified Technology Consultants; via e-mail michael.casey@teamdtc.com and, to be given consideration, must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instruction will be in the form of written addenda to the specifications which, if issued, will be forwarded by electronic mail and posted on DOH's Hurricane Sandy website to all prospective bidders (at the respective email addresses furnished for such purposes), not later than three days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his/her bid as submitted. All addenda so issued shall become part of the contract documents.

Performance and Payment Bonds: A performance and payment bond will be required of the successful bidder (contractor) for 100 percent of the contract price on contracts over \$100,000.

Notice of Special Conditions: Attention is particularly called to those parts of the contract documents and specifications which deal with the following:

1. Inspection and testing of materials
2. Insurance requirements
3. Wage rates (if applicable)
4. State allowances

Laws and Regulations: The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.

Method of Award-Lowest Qualified Bidder: If at the time this contract is to be awarded, the lowest base bid submitted by a responsible bidder does not exceed the amount of funds then estimated by the DOH as available to finance the contract; the contract will be awarded on the base bid only. If such bid exceeds such amount, the DOH may reject all bids or may award the contract on the base bid combined with such deductible alternatives applied in

numerical order in which they are listed in the Form of Bids, as produces a net amount which is within the available funds.

If the homeowner wishes to select a prequalified bidding contractor other than the lowest and most responsible bidder, said owner is responsible for paying the difference between the lowest bidder and their chosen bidder from their own financing.

Obligation of Bidder: At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the plans and contract documents (including all addenda). The failure or omission of any bidder to examine any form, instrument or document shall in no way relieve any bidder from any obligation in respect of his/her bid.

Safety Standards and Accident Prevention: With respect to all work performed under this contract, the contractor shall:

1. Comply with the safety standards provision of applicable laws, building and construction codes and the “Manual of Accident Prevention in Construction” published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the “Federal Register,” Volume 36, No 75, Saturday, April 17, 1971.
2. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) who may be injured on the job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor’s care.

Contract Progress Schedule: Each bid shall be accompanied by a Contract Progress Schedule. Such Schedule shall list the bidder’s timetable for completion of the contract.

BID SUBMISSION CHECKLIST

Project # _____

BID FORM COMPLETE		()
ACKNOWLEDGEMENT of BIDDER COMPLETE		()
BID SECURITY	N/A	()
AFFIDAVIT of NON-COLLUSION		()
BIDDER'S ELIGIBILITY		()
GENERAL BIDDER CERTIFICATION		()
SUBCONTRACT BIDDER CERTIFICATION		()
SUBCONTRACTOR IDENTITY		()
CERTIFICATION REGARDING E.E.O.		()
CONTRACT SCHEDULE		()
SPECIFICATION REQUIRED BID SUBMISSIONS		
	N/A	()
		()
	OTHER	()

Bidder's Name: _____

Authorized Officer: _____

(Signature) (Date)

(Print Name) (Title/Position)

BID FORM

The undersigned, being familiarized with the local conditions affecting the cost of the work and with the Drawings, Specifications, Invitation to Bidders, Instructions to Bidders, General Conditions, Bid Form, Form of Contract and Form of Bonds for Project No. #2140 and Addenda No. and thereto, as prepared by Diversified Technology Consultants, Engineers, Hamden Connecticut, and on file in the office of DOH, hereby proposes to furnish all permits, labor, materials, tools, equipment and related items required for the rehabilitation and reconstruction including general construction, site improvements, plumbing, heating, electrical and finish items for said Project No. #2140 located at DeLuca Residence, 411 Blohm Street in Hamden, State of Connecticut, all in accordance with the Drawings and Specifications, for the sum of :

_____ Dollars (\$ _____).

Words _____

Section #	Scope of Work	Subcontractor	Labor Cost	Material	Total
<u>011000</u>	<u>General Construction</u>				
<u>021000</u>	<u>Asbestos Abatement</u>				
<u>062000</u>	<u>Carpentry</u>				
<u>073113</u>	<u>Asphalt Shingle Roofing</u>				
TOTAL COST					

ALTERNATE PROPOSALS

The undersigned bidder further proposes and agrees that should any or all of the following Alternates be accepted and included in the Contract, the amount of the Base Bid, as heretofore stated, shall be adjusted by the amount stated for each Alternate. All materials and workmanship shall be in strict accordance with the Drawings and Specifications and shall be in-place prices.

Alternates

No. <u>1</u>	REPLACE ROOF OVER FRONT PORCH	_____	\$
No. ___		_____	\$
No. ___		_____	\$
No. ___		_____	\$

The undersigned agrees to commence the work on a date to be specified in the contract and to complete such work within 45 consecutive calendar days.

The undersigned agrees that if within the period of thirty (30) days after the opening of bids, or when extended to the next work day immediately following said period, notice of the acceptance of this bid shall be mailed, or delivered to him/her at the business address given below, or at any time thereafter before this bid is withdrawn, will within fifteen (15) days thereafter deliver to the DOH, where directed, a contract properly executed in such number of counterparts as may be required by said DOH, on the forms annexed, with such changes therein as shall have been made by DOH, prior to the time named for delivery of this proposal, and a letter indicating those Small/Minority Business Enterprises that will perform work and/or provide materials, equipment or services as part of the contract.

In submitting this bid, it is understood that the right is reserved by the abovementioned DOH to reject any and all bids; and it is agreed that this bid may not be withdrawn for a period of thirty (30) days from the date of bid opening or until the next work day immediately following said period if such period ends on a weekend or a State holiday.

Attached hereto is an affidavit, in proof that the undersigned has not entered into any collusion with any person in respect to this proposal, or any other proposal, or the submitting of proposals for the above Project. Also attached is a statement of contractor's qualifications, Certification of Bidder Regarding Equal Employment Opportunity, and Segregated Facilities.

Acknowledgement of Bidder

I, THE UNDERSIGNED AS AN AUTHORIZED OFFICER OF:

_____	_____
(Company Name)	(Date)
_____	_____
(Address)	(Telephone)
_____	_____
(City/State/Zip)	(Fax No.)

(FEIN)	

I HEREBY SUBMIT THE FOLLOWING PRICES FOR THE PROJECT IDENTIFIED ABOVE: (Indicate in words and numerals)

BASE BID PRICE: Cost (\$) _____

AMOUNT IN WORDS: _____

_____	_____
(Signature)	(Date)
_____	_____
(Printed Name)	(Title/Position)
(Email address) _____	

FORM OF NON-COLLUSIVE AFFIDAVIT

AFFIDAVIT

State of _____)

County of _____)

_____, being first duly sworn, deposes and says:

That he/she is, _____ the party making the foregoing proposal for bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any bidder or person, to put in a sham bid or to refrain from bidding, and has not, in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any other bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against DOH or any person interested in the proposed contract, and that all statements in said proposal for bid are true.

Project No. _____

Location _____

Signature

Name and Title

Date

(Signature should be notarized.)

BIDDER'S CERTIFICATION OF ELIGIBILITY

By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

- (1) Be awarded contracts by any agency of the United States Government or HUD; or,
- (2) Participate in HUD programs pursuant to 24 CFR part 24.

(Name of Bidder)

(Address)

BY: _____

Title: _____

NOTE: This certification is a material representation of fact upon which reliance is placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal programs.

CERTIFICATION OF GENERAL BIDDERS ON CDBG-DR CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies that neither he/she nor any firm, corporation, partnership or association in which he/she has a substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6 (b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5), or pursuant to Section 3 (a) of the Davis-Bacon Act, as amended (40 USC 276a). The undersigned further certifies that said undersigned is not presently debarred from doing public construction work in the State of Connecticut.

Date: _____

Name of General Bidder

By _____

Signature

Print name and title

Business Address

Street Address City and State

OSHA-10 OSHA-10

CERTIFICATION OF SUB- BIDDERS (IF ANY) ON CDBG-DR CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he/she is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under penalties of perjury that this subbid is in all responses bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the “person” shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies that neither he/she nor any firm, corporation, partnership or association in which he/she has a substantial interest is designated as an ineligible contractor by the Comptroller General of the United States pursuant to Section 5.6 (b) of the Regulations of the Secretary of Labor, Part 5 (29 CFR, Part 5), or pursuant to Section 3 (a) of the Davis-Bacon Act, as amended (40 USC 276a). The undersigned further certifies that said undersigned is not presently debarred from doing public construction work in the State of Connecticut.

Date _____

Name of Sub-bidder

By _____

Signature

Print Name and Title

Business Name

Street Address, City and State

PERFORMANCE AND PAYMENT BOND
(For contracts over \$100,000)

KNOW ALL MEN BY THESE PRESENTS: THAT we, _____, as PRINCIPAL, and _____, as SURETY, are held firmly bound unto _____ hereinafter called the DOH, in the penal sum of _____ (\$ _____), for the payment of which sum we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. WHEREAS, Principal has entered into a certain Contract with DOH, dated _____, a copy of which is hereto attached and made a part hereof.

NOW, THEREFORE, the condition of this obligation is such that if the Principal shall in all respects fully perform the Contract and all duly authorized modifications thereof, during its original term and any extensions thereof that may be granted and during any guaranty period for which the Contract provides, and if the Principal shall fully satisfy all claims arising out of the prosecution of the work under the Contract and shall fully indemnify DOH for all expenses which it may incur by reason of such claims, including its attorney's fees and court costs, and if the Principal shall make full payment to all persons supplying labor, services, materials, or equipment in the prosecution of the work under the Contract, in default of which such persons shall have a direct right of action hereupon; and if the Principal shall pay or cause to be paid all sales and use taxes payable as a result of the performance of the Contract as well as payment of gasoline and special motor fuel taxes in the performance of the Contract and all motor vehicle fees required for commercial motor vehicles used in connection with the performance of the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect. No modification of the Contract or extension of the term thereof, nor any forbearance on the part of DOH shall in any way release the Principal or the Surety from liability hereunder. Notice to the Surety of any such modification, extension, or forbearance is hereby waived.

IN WITNESS WHEREOF, the aforesaid Principal and Surety have executed this instrument and affixed their seals hereto, this _____ day of _____.

Principal

Surety

Name and Title

(Signatures must be notarized.)

(Power-of-Attorney for person signing for Surety Company must be attached to bond.)

The rate of premium on this bond is \$ _____ per thousand.

The total amount of premium charge is \$ _____.

(The above is to be filled in by Surety Company.)

SUBCONTRACTOR IDENTIFICATION

(Provide additional forms for more subcontractors, as needed prior to contract execution.)

This form is a part of your bid package and must be submitted along with the itemized and formal bid forms at the time of the bid opening. Failure to submit a completed document could result in the disqualification of your bid.

Name of Subcontractor: _____

Address: _____

Trade: _____

Hourly Wage: \$_____ Full Contract Price: \$_____

Federal Tax# or SSN #: _____

Male Owned Business _____ Female Owned Business _____

Is he/she of Hispanic or Latino ethnicity? Yes _____ No _____

Race: (Please check one)

- White American Indian/Alaskan Native
 Black/African American Hasidic Jew
 Asian/Pacific American

Name of Subcontractor: _____

Address: _____

Trade: _____

Hourly Wage: \$_____ Full Contract Price: \$_____

Federal Tax# or SSN #: _____

Male Owned Business _____ Female Owned Business _____

Is he/she of Hispanic or Latino ethnicity? Yes _____ No _____

Race: (Please check one)

- White American Indian/Alaskan Native
 Black/African American Hasidic Jew
 Asian/Pacific American

Name of Subcontractor: _____

Address: _____

Trade: _____

Hourly Wage: \$_____ Full Contract Price: \$_____

Federal Tax# or SSN #: _____

Male Owned Business _____ Female Owned Business _____

Is he/she of Hispanic or Latino ethnicity? Yes _____ No _____

Race: (Please check one)

- White American Indian/Alaskan Native
 Black/African American Hasidic Jew
 Asian/Pacific American

Contractor's Signature

Date

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

INSTRUCTIONS

This certification is required pursuant to Executive Order 11246 (30 F R 12319-25). The implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION OF BIDDER

Name and address of Bidder (include zip code)

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
 YES NO
2. Compliance reports were required to be filed in connection with such contract or subcontract.
 YES NO
3. Bidder has filed all compliance reports due under applicable instructions, including SF.100.
 YES NO NOT REQUIRED
4. Have you ever seen or are you being considered for sanction due to violation of Executive Order 11246, as amended?
 YES NO
5. No segregated facilities will be maintained.

NAME AND TITLE OF SIGNER (Please type.)

SIGNATURE DATE

Green Building Standards Checklist

HUD CPD Green Building Retrofit Checklist

The CPD Green Retrofit Checklist promotes energy efficiency and green building practices for residential retrofit projects. Grantees must follow the checklist in its entirety and apply all measures within the Checklist to the extent applicable to the particular building type being retrofitted. The phrase “when replacing” in the Checklist refers to the mandatory replacement with specified green improvements, products, and fixtures only when replacing those systems during the normal course of the retrofit.

WATER AND ENERGY CONSERVATION MEASURES

N/A

Water-Conserving Fixtures

Install or retrofit water conserving fixtures in any unit and common facility, use the following specifications: Toilets-- 1.28 gpf; Urinals-- 0.5 gpf; Showerheads-- 2.0 gpm; Kitchen faucets-- 2.0 gpm; and Bathroom faucets-- 1.5gpm. [gpf = gallons per flush; gpm = gallons per minute]

N/A

ENERGY STAR Appliances

Install ENERGY STAR-labeled clothes washers, dishwashers, and refrigerators, if these appliance categories are provided in units or common areas.

N/A

Air Sealing: Building Envelope

Seal all accessible gaps and penetrations in the building envelope. If applicable, use low VOC caulk or foam.

N/A

Insulation: Attic (if applicable to building type)

For attics with closed floor cavities directly above the conditioned space, blow in insulation per manufacturer's specifications to a minimum density of 3.5 Lbs. per cubic foot (CF). For attics with open floor cavities directly above the conditioned space, install insulation to meet or exceed IECC levels.

N/A

Insulation: Flooring (if applicable to building type)

Install \geq R-19 insulation in contact with the subfloor in buildings with floor systems over vented crawl spaces. Install a 6-mil vapor barrier in contact with 100% of the floor of the crawl space (the ground), overlapping seams and piers at least 6 inches.

N/A

Duct Sealing (if applicable to building type)

In buildings with ducted forced-air heating and cooling systems, seal all penetrations of the air distribution system to reduce leakage in order to meet or exceed ENERGY STAR for Homes' duct leakage standard.

N/A

Air Barrier System

Ensure continuous unbroken air barrier surrounding all conditioned space and dwelling units. Align insulation completely and continuously with the air barrier.

X

Radiant Barriers: Roofing

When replacing or making a substantial repair to the roof, use radiant barrier sheathing or other radiant barrier material; if economically feasible, also use cool roofing materials.

N/A

Windows

When replacing windows, install geographically appropriate ENERGY STAR rated windows.

N/A

Sizing of Heating and Cooling Equipment

When replacing, size heating and cooling equipment in accordance with the Air Conditioning Contractors of America (ACCA) Manuals, Parts J and S, or 2012 ASHRAE Handbook--HVAC Systems and Equipment or most recent edition.

N/A

Domestic Hot Water Systems

When replacing domestic water heating system(s), ensure the system(s) meet or exceed the efficiency requirements of ENERGY STAR for Homes' Reference Design. Insulate pipes by at least R-4.

N/A

Efficient Lighting: Interior Units

Follow the guidance appropriate for the project type: install the ENERGY STAR Advanced Lighting Package (ALP); **OR** follow the ENERGY STAR MFHR program guidelines, which require that 80% of installed lighting fixtures within units must be ENERGY STAR-qualified or have ENERGY STAR-qualified lamps installed; **OR** when replacing, new fixtures and ceiling fans must meet or exceed ENERGY STAR efficiency levels.

N/A

Efficient Lighting: Common Areas and Emergency Lighting (if applicable to building type)

Follow the guidance appropriate for the project type: use ENERGY STAR-labeled fixtures or any equivalent high-performance lighting fixtures and bulbs in all common areas; **OR** when replacing, new common space and emergency lighting fixtures must meet or exceed ENERGY STAR efficiency levels. For emergency lighting, if installing new or replacing, all exist signs shall meet or exceed LED efficiency levels and conform to local building codes.

N/A

Efficient Lighting: Exterior

Follow the guidance appropriate for the project type: install ENERGY STAR-qualified fixtures or LEDs with a minimum efficacy of 45 lumens/watt; **OR** follow the ENERGY STAR MFHR program guidelines, which require that 80% of outdoor lighting fixtures must be ENERGY STAR-qualified or have ENERGY STAR-qualified lamps installed; **OR** when replacing, install ENERGY STAR compact fluorescents or LEDs with a minimum efficacy of 45 lumens/watt.

INDOOR AIR QUALITY

N/A

Air Ventilation: Single Family and Multifamily (three stories or fewer)

Install an in-unit ventilation system capable of providing adequate fresh air per ASHRAE 62.2 requirements.

N/A

Air Ventilation: Multifamily (four stories or more)

Install apartment ventilation systems that satisfy ASHRAE 62.2 for all dwelling units and common area ventilation systems that satisfy ASHRAE 62.1 requirements. If economically feasible, consider heat/energy recovery for 100% of corridor air supply.

N/A

Composite Wood Products that Emit Low/No Formaldehyde

Composite wood products must be certified compliant with California 93120. If using a composite wood product that does not comply with California 93120, all exposed edges and sides must be sealed with low-VOC sealants.

- | | |
|-----|--|
| N/A | <p>Environmentally Preferable Flooring</p> <p>When replacing flooring, use environmentally preferable flooring, including the FloorScore certification. Any carpet products used must meet the Carpet and Rug Institute's Green Label or Green Label Plus certification for carpet, pad, and carpet adhesives.</p> |
| X | <p>Low/No VOC Paints and Primers</p> <p>All interior paints and primers must be less than or equal to the following VOC levels: Flats--50 g/L; Non-flats--50 g/L; Floor--100 g/L. [g/L = grams per liter; levels are based on a combination of the Master Painters Institute (MPI) and GreenSeal standards.]</p> |
| X | <p>Low/No VOC Adhesives and Sealants</p> <p>All adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District.</p> |
| N/A | <p>Clothes Dryer Exhaust</p> <p>Vent clothes dryers directly to the outdoors using rigid-type duct work.</p> |
| N/A | <p>Mold Inspection and Remediation</p> <p>Inspect the interior and exterior of the building for evidence of moisture problems. Document the extent and location of the problems, and implement the proposed repairs according to the Moisture section of the EPA Healthy Indoor Environment Protocols for Home Energy Upgrades.</p> |
| N/A | <p>Combustion Equipment</p> <p>When installing new space and water-heating equipment, specify power-vented or direct vent combustion equipment.</p> |
| N/A | <p>Mold Prevention: Water Heaters</p> <p>Provide adequate drainage for water heaters that includes drains or catch pans with drains piped to the exterior of the dwelling.</p> |
| N/A | <p>Mold Prevention: Surfaces</p> <p>When replacing or repairing bathrooms, kitchens, and laundry rooms, use materials that have durable, cleanable surfaces.</p> |
| N/A | <p>Mold Prevention: Tub and Shower Enclosures</p> <p>When replacing or repairing tub and/or shower enclosures, use non-paper-faced backing materials such as cement board, fiber cement board, or equivalent in bathrooms.</p> |
| N/A | <p>Integrated Pest Management</p> <p>Seal all wall, floor, and joint penetrations with low-VOC caulking or other appropriate sealing methods to prevent pest entry. [If applicable, provide training to multifamily buildings staff.]</p> |
| X | <p>Lead-Safe Work Practices</p> |

For properties built before 1978, if the project will involve disturbing painted surfaces or cleaning up lead contaminated dust or soil, use certified renovation or lead abatement contractors and workers using lead-safe work practices and clearance examinations consistent with the more stringent of EPA's Renovation, Repair, and Painting Rule and HUD's Lead Safe Housing Rule.

X

Radon Testing and Mitigation (if applicable based on building location)

For buildings in EPA Radon Zone 1 or 2, test for radon using the current edition of American Association of Radon Scientists and Technologists (AARST)'s Protocols for Radon Measurement in Homes Standard for Single-Family Housing or Duplexes, or AARST's Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings. To install radon mitigation systems in buildings with radon level of 4 pCi/L or more, use ASTM E 2121 for single-family housing or duplexes, or AARST's Radon Mitigation Standards for Multifamily Buildings. For new construction, use AARST's Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses, or ASTM E 1465.

Section 2

General Conditions

1. The purpose of this HUD and DOH sponsored 0% interest loan Owner Occupied Rehabilitation and Rebuilding program is to make good faith efforts to assist qualified property owners in making repairs to their property damaged by Superstorm Sandy. Eligible repairs include code, health and safety compliance modifications, including but not limited to building envelope and energy efficiency upgrades (See Green Building Standards).
2. In the event that the homeowner is dissatisfied with the work performed although the work has been completed to industry standards, approved by the local municipality's code enforcement officials and approved by the DOH or its agent, the homeowner's approval will be overridden, full payment will be issued to the contractor and the project will be officially closed.
3. The owner is responsible for removal or relocation from the respective work areas the following, including but not necessarily limited to: personal belongings, window treatments, small furniture, fixtures, area carpets, interior and exterior plants. The contractor will be responsible for covering and protecting large furniture unable to be removed from the respective work areas.
4. The Contractor, unless otherwise specified, shall provide all labor, materials, tools, equipment, and related items required for the erection and completion of all work indicated in this project manual and as may be inferred, implied or otherwise necessary for the proper execution of the work.
5. The Contractor shall pay all necessary taxes, fees, and permits necessary to complete all of his work as detailed on the attached scope of work.
6. The premises herein shall be occupied during the course of the construction work.
7. All rehabilitation, alterations, repairs, or extensions shall be in compliance with all applicable codes of the Municipality, HUD requirements or compliance with the latest edition of the International Building Code, which ever applies and is the more strict. All electrical, heating, and plumbing work shall comply with the rules and regulations of the National, State and Local Codes. Before commencing work, contractors and/or subcontractors shall obtain all necessary permits.
8. The Contractor certifies that he has familiarized himself with the requirements of the specifications and plans and understands the extent and character of the work to be done, and inspected the premises and given his full attention to any and all areas with which he might become specifically involved. He must familiarize himself with all conditions relating to and affecting his work and bid.
9. The selected Contractor must, prior to contract signing, supply the DOH and the Owner with the original certificates of insurance in accordance with the following insurance requirements:
 - A. Contractor shall procure and maintain for the duration of the Agreement the following types of insurance, in amounts no less than the stated limits, against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder:
 - 1) **Workers' Compensation Insurance:** The Contractor shall maintain full and complete Workers' Compensation Insurance for all of its employees and those of its subcontractors engaged in work on the premises, in accordance with the local and state laws governing the same, in the minimum amounts of \$100,000 each accident, \$500,000 disease – Policy limit, \$100,000 disease – each employee.
 - 2) **General Liability Insurance:** The Contractor shall furnish evidence of a comprehensive general liability insurance coverage with a combined single limit for bodily injury, death, and property damage in the amount of \$1,000,000 per occurrence, naming the Owner and the State as additional insured. This shall cover the use of all equipment, hoists and vehicles on the Premises not covered by any automobile liability policy. If the Contractor has a "claims-made" policy, then the following additional requirements apply: (a) the policy must provide a retroactive date which must be on or before the execution date of this Agreement and (b) the extended reporting period may not be less than five (5) years following the Construction Completion Date.
 - 3) **Automobile Liability:** The Contractor shall furnish evidence of Automobile Liability insurance with minimum limits of \$1,000,000 per occurrence, combined single limit for bodily injury and property damage liability. This shall include owned vehicles, non-owned vehicles and employee non-ownership.
 - 4) **Cargo Insurance:** The Contractor shall furnish evidence of all-risk cargo insurance, with a minimum limit of \$250,000 per occurrence when the project involves raising a structure above the Base Flood Elevation.
 - 5) **Builders Risk:** The Contractor shall maintain Builder's Risk (fire and extended coverage) insurance providing coverage for the entire work at the project site, including all work in place, all materials stored at the building site, foundations and building equipment. Coverage shall be on a completed value form basis in an amount equal to the projected value of the project. The Contractor agrees to endorse the State of Connecticut and the Owner as Loss Payees.

B. Additional Insurance Provisions

- 1) Each of the Owner and the State of Connecticut Department of Housing, and their successors and assigns, as their interests may appear, shall be named as an Additional Insured on the Commercial General Liability policy.
 - 2) Described insurance shall be primary coverage and Applicant and Applicant's insurer shall have no right of subrogation recovery or subrogation against the State of Connecticut.
 - 3) Applicant shall assume any and all deductibles in the described insurance policies.
 - 4) Without limiting Applicant's obligation to procure and maintain insurance for the duration identified in (A) above, each insurance policy shall not be suspended, voided, cancelled or reduced except after thirty (30) days prior written notice by certified mail has been given to the State of Connecticut, with the exception that a ten (10) day prior written notice by certified mail for non-payment of premium is acceptable.
 - 5) Each policy shall be issued by an Insurance Company licensed to do business by Connecticut Department of Insurance and having a minimum Best Rating of A- or equivalent or as otherwise approved by the State.
10. DOH and its agents must be notified prior to start of work of any subcontractor to be paid for work on the job who is different from the subcontractor identified in original bid proposal.
 11. Working times for the project shall be Monday through Friday 8 am to 5 pm (EST). Contractors must request permission from owner and be in compliance with local municipal ordinances prior to working longer hours or weekends.
 12. All materials shall be new and of acceptable quality. The Contractor shall submit proof of purchase of warrantee items at closeout. The property Owner shall select all colors, models, etc. as per scope of work. All materials and work must be applied in accordance with the applicable manufacturer's latest instructions and specifications, and in accordance with Federal prohibitions against the use of lead paint.
 13. All manufacturers' warranties are to be extended to the property Owner free and clear of all liens. Unless otherwise specified, all labor, material, and workmanship provided by the Contractor shall be guaranteed by the Contractor, including that of subcontractors, for a one (1) year period from the date of the Final Payment. This guarantee shall be in addition to and not in limitation of, in lieu of, or modify and other guarantee that is due the property Owner from any manufacturer.
 14. The Contractor shall repair or replace all work, materials and equipment which are found to be defective during construction and the guarantee period. Repair shall include all damage to surrounding work caused by the failure and/or necessary for the repair or replacement of the defect. All repairs and replacements shall be performed at no additional expense to the Owner and shall be completed promptly after the Contractor receives notice of the defect.
 15. The Contractor shall take all necessary measures and precautions to protect the surroundings from damage occurring due to performance of the work. All areas and surfaces of the existing building which are affected by the execution of the new work (removals, demolition, repairs etc.) shall be patched and restored to either match the existing adjacent conditions or to match the new work, whichever is applicable. If such damage occurs it will be repaired by the Contractor at no cost to the Owner. Contractor shall provide all temporary shoring, bracing and other construction (interior and exterior) required to perform the work of this contract.
 16. The Contractor shall dispose of all debris and remove all material resulting from his work in accordance with local and State law. The Contractor shall police and maintain a clean and safe job site daily. He shall reinstall accessories taken down and clean up all scrap around the project and remove fingerprints. All on-site maintenance relating to the performance of the work shall be the responsibility of the Contractor until the Certificate of Completion is issued. The project shall be maintained in a habitable and safe condition daily if the project is to remain occupied.
 17. Materials and products not otherwise specified in these documents shall be to match building standards and existing conditions, provided such items are in compliance with all applicable codes. Such codes set the minimum standards to be achieved.
 18. All work shall be neat and accurate and done in a manner in accordance with customary trade practices. **The Contractor, at a minimum, shall leave the premises broom clean and orderly after each working day and shall keep the premises free from accumulation of materials and rubbish by disposing of such debris in an onsite disposal container (provided by the contractor) or removed by vehicle in accordance with all applicable state and local regulations.** At the completion of the project the Contractor shall remove all excess materials from the site. Any surplus material agreed to be left for the owner shall be stored neatly by the contractor in a location directed by the owner free from weather, spoilage or pilferage.
 19. The Contractor shall coordinate any work which interfaces with other Contractors or with the operations of the Owner. The Contractor shall take all necessary precautions to prevent fire, bodily injury, damage to property and any other calamities that may arise which pose a threat to life, limb property.
 20. The Contractor shall not make any changes to the scope of work unless a change order is processed and fully executed by the DOH.

21. The Owner may cancel this contract within three days of signing and not be liable to the Contractor or DOH. Should the Owner opt to cancel they must sign and send a Notice of Cancellation to DOH, otherwise DOH shall issue a Notice to Proceed authorizing the contractor to commence with the proposed improvements.
22. The Contractor shall commence work under this contract within 15 work days of the date of the notice to proceed and complete work within **60** calendar days of the notice to proceed.
23. If the Contractor is delayed at any time in the progress of the work by any act or neglect of the Owner or by any employee of the Owner, or by any separate Contractor employed by the Owner, or by changes ordered in the work or by labor disputes, fire, unusual delay in delivery of materials, transportation, adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any cause beyond the Contractor's control, or by delay authorized by the Owner pending arbitration, or by any other cause which justifies the delay, the contract time may be extended by Change Order for such reasonable time as may be agreed upon by all parties. It shall be the responsibility of the Contractor to request and document in writing such extensions within three (3) work days.
24. In the event that the Contractor does not commence or pursue the work as hereinafter stated, then DOH shall have the right to terminate this agreement and to hire a successor Contractor to perform the work. Any such termination shall be by certified mail to the address noted in this agreement, and shall be effective as of the date of mailing. Payments by the DOH/Owner in the event of termination shall be as follows:
25. The successor Contractor shall first be paid and then the terminated Contractor. Payments to the terminated Contractor shall be limited both as to those funds remaining after payment to the successor Contractor but shall not exceed the value of the work actually performed by the terminated Contractor. Further, should the total cost for work performed under this contract exceed the amount stated in this agreement due to the Contractor's termination, then the Owner shall have a cause of action against the terminated Contractor for any such additional cost.
26. If, through any cause, the Contractor shall fail to fulfill in a timely and proper manner his obligations under this Contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this Contract, DOH shall, thereupon, have the right to terminate this Contract by giving written notice to the Contractor of such termination and specifying the effective date of such termination. In such event, all unfinished work required by the Contractor under this Contract shall, at the option of the DOH, be completed or not.
27. Payments
 - 1) DOH/Homeowner shall pay the Contractor the price as provided in this contract.
 - 2) DOH shall make progress payments approximately every 30 days as the work proceeds, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer. DOH may, subject to written determination and approval of the Contracting Officer, make more frequent payments to contractors which are qualified small businesses.
 - 3) Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by the Contracting Officer, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a basis for determining progress payments. The breakdown shall be approved by the Contracting Officer and must be acceptable to DOH. The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price. The Contractor shall prorate its overhead and profit over the construction period of the contract.
 - 4) The Contractor shall submit, on AIA forms provided by DOH, periodic estimates showing the value of the work performed during each period based upon the approved breakdown of the contract price. Such estimates shall be submitted not later than 14 days in advance of the date set for payment and are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the Architect prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.
 - 5) Along with each request for progress payments and the required estimates, the Contractor shall furnish lien waivers and labor releases as good and sufficient evidence that the premises are free from all liens, damages, and anything chargeable to said contractor.
 - 6) Except as otherwise provided in State law, DOH shall retain five (5) percent of the amount of progress payments until completion and acceptance of all work under the contract; except, that if upon completion of 50 percent of the work, the Contracting Officer, after consulting with the Architect, determines that the Contractor's performance and progress are satisfactory, DOH may make the remaining payments in full for the work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, DOH shall reinstate the five (5) percent retainage until such time as the Contracting Officer determines that performance and progress are satisfactory. Retainage will be released 90 days after project completion.
 - 7) The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments. Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of DOH's/Homeowner's interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the Homeowner.
 - 8) All material and work covered by progress payments made shall, at the time of payment become the sole property of the Homeowner, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or, (2) waiving the right of DOH/Homeowner to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of DOH in the course of their employment, the Contractor shall restore such damaged work without cost to DOH/Homeowner and to seek redress for its damage only from those who directly caused it.

- 9) DOH shall make the final payment due the Contractor under this contract after (1) completion and final acceptance of all work; and (2) presentation of release of all claims against DOH/Homeowner arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. Each such exception shall embrace no more than one claim, the basis and scope of which shall be clearly defined. The amounts for such excepted claims shall not be included in the request for final payment. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned.
 - 10) Prior to making any payment, the Contracting Officer may require the Contractor to furnish receipts or other evidence of payment from all persons performing work and supplying material to the Contractor, if the Contracting Officer determines such evidence is necessary to substantiate claimed costs.
 - 11) DOH shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of DOH to withhold moneys from the Contractor shall in nowise impair the obligations of any surety or sureties under any bonds furnished under this contract.
28. Disputes
- 1) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract. A claim arising under the contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim. The submission may be converted to a claim by complying with the requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
 - 2) Except for disputes arising under the clauses entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
 - 3) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision.
 - 4) A claim by the Homeowner against the Contractor shall be subject to a written decision by the Contracting Officer.
 - 5) The Contracting Officer shall, within calendar 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
 - 6) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in DOH in accordance with DOH's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within (30 unless otherwise indicated) calendar days after receipt of the Contracting Officer's decision.
 - 7) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.
29. The Contractor will not discriminate against any employee or applicant for employment because of race, color, creed, religion, sex, sexual preference, national origin, or mental or physical disability during the performance of this agreement. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, in all employment practices such as the following: employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship, without regard to their race, color, creed, religion, sex, sexual preference, national origin or mental or physical disability. This provision will be inserted in all subcontracts, if any, for work covered by this agreement.
30. Equal Employment Opportunity (EEO) Clause
- During the performance of this contract, the Contractor agrees as follows:
- 1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and the employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
 - 2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.
 - 3) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - 4) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor.
 - 5) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
 - 6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by the rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

- 7) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event a Contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.
31. In the event of the Contractor's noncompliance with this equal opportunity clause or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further contracts in accordance with procedures authorized in Presidential Executive Order 11246, or by rule, regulations, or order of the Secretary of Labor or as provided by law.
32. The following applies to all contracts of \$10,000,000.00 or more: SECTION 402 VETERANS OF THE VIETNAM ERA. AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VEITNAM ERA. The Contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veteran status in all employment practices such as the following: employment upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship.
33. No officer, employee or member of the Governing Body of the Municipality shall have any financial interest, direct or indirect, in this contract or the proceeds of this loan.
34. DOH retains the right to reject any or all bids or any part of any bid in part or in whole if deemed to be in the best interest of the project.
35. Substitutions of materials from that specified are only allowed on an approved/equal basis. The Contractor must submit written documentation of the substitute item or material for approval by the Owner and Program prior to making such substitution. Any items or material substituted by the Contractor without prior written approval of the Owner and Program will at the Contractor's expense be replaced if it is determined not to be equal to the item or material specified. Any surrounding, adjoining, or dependent items affected by replacement of the unequal substituted material shall also be replaced, reworked, and reinstalled at no cost to the Owner.
36. Bids shall contain prices for general categories of work and/or items as specified on the provided bid sheets. In the case of a mathematical error by the Contractor, the correct sum of the individual line items in the cost summary shall be the Contractor's bid.
37. All bids shall remain in effect for thirty (30) calendar days.
38. The Owner will supply all necessary power required by the Contractor at no additional cost to complete his work. Power shall be limited to the use of existing outlets and shall not exceed the existing capacity of the system. Power required over the capacity of the existing electrical system shall be the responsibility of the Contractor. Heating during construction shall be supplied by the Owner.
39. If any unseen or unknown asbestos related conditions arise during the work the Contractor shall stop all work immediately and notify the DOH of such.
40. OTHER PROVISIONS – LEAD BASED PAINT

For properties built before 1978, if the project will involve disturbing painted surfaces or cleaning up lead contaminated dust or soil, use certified renovation or lead abatement contractors and workers using lead-safe work practices and clearance examinations consistent with the more stringent of EPA's Renovation, Repair, and Painting Rule and HUD's Lead Safe Housing Rule. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846) as implemented by 24 CFR Part 35 and EPA's Repair Renovation, and Painting Rule at 40 CFR.80 Subpart E.

Any and all rehabilitation work under this Agreement will comply with the requirements of the Federal Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4831) which prohibits the use of lead-based paint in residential structures constructed or rehabilitated with Federal Assistance in any form.

The construction or rehabilitation of residential structures with assistance provided under this contract is subject to the final regulations "Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally owned Residential Property and Housing Receiving Federal Assistance." The regulation is at 24 CFR part 35. It implements sections 1012 and 1013 of the Residential Lead-Based Paint Hazard Reduction Act of 1992, Title X, of the Housing and Community Development Act of 1992. Sections 1012 and 1013 amend the Lead-Based Paint Poisoning Prevention Act of 1971.

Beginning April 22, 2010, the Contractor is required to have a certificate from a 6 hour EPA/HUD RRP lead remediation course.

41. The Contractor shall comply with the provisions of the immigration Reform and Control Act of 1986 effective and enforceable as of June 6, 1987 which Act makes unlawful the hiring for employment or subcontracting individuals failing to provide documentation of legal eligibility to work in the United States. The Contractor shall hold DOH, its agents and the Homeowner harmless for the failure to comply with the provisions of said Act.

Section 3:

Scope of Work and Specifications

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Asbestos Report

SECTION 011000 – SUMMARY

SCOPE OF WORK

REFERENCES

THIS SECTION COVERS THE REQUIREMENTS FOR THE WORK AND ALL WORK REQUIRED TO PROVIDE COMPLETE AND FINISHED WORK. EXAMINE ALL CONTRACT DRAWINGS AND ALL OTHER SECTIONS OF THE SPECIFICATIONS INCLUDING ATTACHEMENTS AND REPORTS WHICH COMPRISE THE SCOPE OF WORK.

DEFINITIONS

'NOTED' - AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS.

"PROVIDE" AND "INSTALL" MEAN PROVIDE MATERIAL, LABOR, EQUIPMENT, AND APPURTENANCES NECESSARY FOR THE COMPLETE INSTALLATION OF THE ITEM IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, IN PLACE FULLY OPERATIONAL OR FUNCTIONAL AS INTENDED FOR ITS USE BY THE OWNER.

NOTICE OF HAZARDOUS MATERIALS ON SITE

NOTICE IS HEREBY GIVEN TO THE EXISTENCE OF ASBESTOS CONTAINING MATERIAL DISCOVERED ON SITE. REFERENCE IS MADE TO ATTACHED ASBESTOS AND LEAD REPORTS PROVIDED FOR YOUR USE.

PERMITS, FEES AND INSPECTIONS

THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS, PAY FOR ALL GOVERNMENT, STATE SALES TAXES AND APPLICABLE FEES. THE CONTRACTOR SHALL FILE ALL DRAWINGS, COMPLETE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS FROM THE PROPER AUTHORITY OR AGENCY HAVING JURISDICTION. OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION COVERING WORK. THE CONTRACTOR SHALL SEE THAT ALL REQUIRED INSPECTIONS AND TESTS ARE MADE AND SHALL COOPERATE TO MAKE THESE TESTS AS THOROUGH AND AS READILY MADE AS POSSIBLE.

SUBMITTALS

SUBMIT THE FOLLOWING DOCUMENTS:

COPY OF BUILDING PERMIT
COPY OF NOTIFICATIONS

SCOPE

THIS WORK SHALL CONSIST OF THE FURNISHINGS OF ALL LABOR, MATERIALS AND SERVICES REQUIRED FOR COMPLETE, READY FOR OPERATION AND LIKE NEW CONDITION FOR ALL ELEMENTS OF THE WORK AS CALLED FOR BY THE ACCOMPANYING DRAWINGS AND SPECIFICATIONS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT CODE AND AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL REMOVE & DISPOSE OF ALL CONSTRUCTION WASTE FROM THE SITE IN ACCORDANCE TO LAW.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASSESS THE FIELD CONDITIONS AND DETERMINE THE EFFORT AND ALL WORK REQUIRED TO PERFORM THE WORK AND PROVIDE COMPLETION OF THE CONTRACT IN ACCORDANCE WITH THE PLAN OF WORK INCLUSIVE OF DRAWINGS, SPECIFICATIONS, RELATED REPORTS AND REFERENCES.

PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

THE SCOPE OF WORK INCLUDES THE FOLLOWING AS FURTHER DETAILED ON THE ACCOMPANYING SCOPE OF WORK DOCUMENTS:

ROOF REPLACEMENT

PROTECT GROUNDS FROM FALLING CONSTRUCTION DEBRIS. PROTECT HOME FROM THE WEATHER DURING THE ROOF REPLACEMENT.

REMOVAL AND DISPOSAL OF EXISTING ROOFING MATERIALS DOWN TO 1 X 4 UNDERLAYMENT BOARDS ON THE MAIN HOUSE SECTION OF THE ROOF.

ASBESTOS CONTAINING MATERIALS SHALL BE HANDLED, REMOVED, AND DISPOSED IN ACCORDANCE WITH LAW.

REMOVE MISCELLANEOUS METALS, FLASHING, DRIP EDGE FLASHING AND RELATED MATERIALS.

REMOVE ALUMINUM BREAKMETAL TRIM AT FACIA AND EVE.

REMOVE ANY UNSUITABLE, DAMAGED, OR ROTTED, TRIM BOARDS, FASCIA, RAKE BOARDS.

PROVIDE NEW ROOF SHEATHING.

PROVIDE NEW RADIANT BARRIER MATERIAL

PROVIDE NEW ROOFING SYSTEM COMPLETE WITH SHINGLES, VENTS, FLASHINGS, ICE & WATER BARRIERS, UNDERLAYMENTS, DRIP EDGES, AND SPECIALTY FLASHINGS.

PROVIDE NEW GUTTERS AND DOWNSPOUTS

REPAIR & REPAINT BASEMENT WALL

PROTECT HOME FROM DUST.

REMOVE ALL LOOSE PAINT, PARGING, MORTAR AND LYME MATERIALS FROM AREA TO BE REPAINTED.

REMOVE LOOSE PAINT FROM PIPING TO BE REPAINTED IN PAINTED WALL AREA.

PARGE WALL TO CREATE A SMOOTH WALL SURFACE IN PREPARATION FOR PAINTING.

PAINT BASEMENT WALL AND PREVIOUSLY PAINTED PIPING FROM CORNER OF THE WALL TO THE WALL HUNG CABINETS. PAINT THE FULL HEIGHT OF THE WALL.

ADD STRUCTURAL METAL CLIPS TO ROOF FRAMING

PROVIDE AND INSTALL NEW STRUCTURAL METAL FRAMING CLIPS TO TIE THE EXISTING ROOF FRAMING MEMBERS TO THE HOUSE STRUCTURE.

SECTOION 012300 – ALTERNATES

THE FOLLOWING ADDED WORK ALTERNATES SHALL BE BID AND OFFERED FOR ACCEPTANCE BY THE OWNER.

ADD ALTERNATE NO. 1 REPLACE ROOF OVER FRONT PORCH –THE WORK OF THIS ALTERNATE SHALL INCLUDE THE REMOVAL AND DISPOSAL OF ROOFING MATERIAL AND SHEATHING. REMOVING AND REPLACING FLASHINGS AND DRIP EDGES, REMOVING AND REPLACING GUTTERS, REMOVING AND REPLACING SHEET METAL TRIM AT FASCIA AND RAKES, REMOVING AND REPLACING ANY ROTTED OR

DAMAGED FASCIA, TRIM, OR RAKE BOARDS, INSTALLING NEW RADIANT PANEL SHEATHING, INSTALL ICE & WATER SHEILD BARRIER OVER THE ENTIRE PORCH ROOF, INSTALL NEW METAL FLASHING AT THE INTERFACE OF THE ROOF AND THE VERTICAL HOUSE WALL, INSTALL NEW DRIP EDGE, MISC. FLASHING AND GUTTERS.

SECTION 015000– TEMPORARY FACILITIES AND CONTROLS

DUSTPROOFING: CONTRACTOR SHALL INSTALL POLYETHELYNE DUST BARRIERS TO PROTECT THE HOME FROM ANY AND ALL DUST RELEASED DURING THE ROOF REPLACEMENT AND WALL REPAIR. CONTRACTOR SHALL TARP OVER AND OTHERWISE PROTECT THE ATTIC FROM DUST AND DEBRIS FROM ROOFING REPLACEMENT ACTIVITIES. CONTRACTOR SHALL CLEAN ANY AREAS OR ITEMS CLEAN FROM DUST OR DEBRIS FROM THE WORK.

CONTRACTOR SHALL PROVIDE TARPS TO PROTECT THE GROUNDS AND SHRUBBERY FROM ROOFING DEBRIS. NO ROOFING DEMOLITION SHALL BEGIN UNTIL THE GROUNDS ARE PROTECTED.

WASTE MATERIALS: CONTRACTOR IS RESPONSIBLE FOR PROVIDING WASTE CONTAINERS AND REMOVING ALL DEMOLITION DEBRIS AND WASTE MATERIALS FROM THE SITE. MATERIALS THAT HAVE BEEN IDENTIFIED AS CONTAINING ASBESTOS SHALL BE SEGREGATED IN SEPARATE WASTE CONTAINERS AND PROPERLY IDENTIFIED AND DISPOSED.

SECTION 017300 – EXECUTION

STRUCTURAL ELEMENTS: CONTRACTOR SHALL NOT CUT ANY STRUCTURAL ELEMENTS IN THE PERFORMANCE OF THE WORK.

CUTTING AND PATCHING: IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CUT AND PATCH AND PERFORM THE CONSTRUCTION IN A MANNER TO RESULT IN A FINISHED PRODUCT. WHERE NEW MATERIALS MATCH EXISTING MATERIALS, CONTRACTOR SHALL PROTECT EXISTING MATERIALS FROM DAMAGE. WHERE DAMAGE OCCURS THE DAMAGED ELEMENT SHALL BE REPAIRED TO LIKE NEW CONSTRUCTION.

IT IS THE CONTRACTORS RESPONSIBILITY TO EXAMINE AND ACCEPT THE CONDITION OF THE WORK PRIOR TO INSTALLATION OF THE NEXT PHASE OF WORK TO ENSURE ALL TOLERANCES AND OTHER CONDITIONS EFFECTING PERFORMANCE OR FINISHED PRODUCT QUALITY HAVE BEEN ACHIEVED. REWORK IS THE RESPONSIBILITY OF THE CONTRACTOR.

**SECTION 02080
ASBESTOS ABATEMENT**

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PART 1: SCOPE OF ASBESTOS REMOVAL WORK

1.1 GENERAL REQUIREMENTS

- A. Contractor shall retain a State of Connecticut licensed Asbestos Abatement Contractor (AAC) to perform the asbestos abatement work of this Section.
- B. Engineer shall retain an Industrial Hygiene firm, with a State of Connecticut Licensed Project Monitor (PM) that shall be designated as the authorized representative of the Owner for purposes of monitoring the asbestos abatement work. The level of monitoring shall be at the discretion of the Engineer. The Contractor will regard the PM's direction as authoritative and binding as provided herein, in matters particularly but not limited to approval of work areas, pre-abatement inspections and final completion of the abatement. Final visual inspection will be conducted by a CT DPH Licensed Project Monitor for all abatement work completed. Where needed, final post abatement visual inspection and monitoring shall be performed by a CT DPH Licensed Project Monitor.
- C. Any deviation from these specifications requires the written approval and authorization from the Owner.
- D. No requirement in these Specifications shall be construed as forcing the Contractor or his employees or agents to commit an unsafe act or to violate any code or regulations. Where there is a conflict between the specifications and the regulations the most stringent condition shall apply. In any case where the Contractor determines that compliance with any condition of this Specification is not feasible for safety reasons and supports this determination with engineering and/or other appropriate data in writing together with an acceptable alternate method which is consistent with the regulations, the alternate method will be duly considered. Any proposed changes are subject to approval by the Engineer.
- E. Refer to attached drawing A2 and ChemScope's Asbestos Pre-Renovation Inspection Report CS#183-77, dated 5/2/2014.
- F. Remove all roof flashing from all roofs at the subject site, approximately 10 sq ft. Some roof shingles will need to be disposed of as ACM because the ACM flashing tar is attached to them. ACM flashing tar is located at penetrations, roof joints, patch areas, perimeter and roof transitions.
- G. Where amounts or quantities are given, these amounts or quantities have been estimated from plans and not measured. Contractor shall have no claim as to added work as the result of accepting said estimates. Contractor is required to verify quantities and report any discrepancies before the bid due date or to accept the amounts or quantities to be correct as herein stated.
- H. Roofing descriptions are based on borings and cuts scattered over the roof and are believed to represent the general conditions. The thickness values are estimated by eyeball only.
- I. Removals must be neat, leaving the substrate and objects and equipment on the roof functional for the intended roof re-construction. Do not make any holes or cuts in the substrate. The asbestos contractor will be responsible for cost of any repairs needed to restore areas damaged by the asbestos contractor's work.

- J. Do not remove roofing during rain or other precipitation.
- K. At all times, leave the roof water-tight at the end of the work day. This may be accomplished by coordination of replacement to immediately follow removal or by installing temporary flashing and other waterproof materials as will effectively protect the building against leakage for the duration of time between removal and replacement. Contractor will be held responsible for any water damage or other leakage into the building as the result of abatement work or incomplete protection.
- L. Prices must include all costs including proper abatement and disposal.
- M. Coordinate removals and protection to maintain building security and to prevent dust from entering as the result of outside abatement work.
- N. The purpose of this asbestos removal is to remove any asbestos materials properly which are in the way of application of a new roof. It is recognized that asbestos tar may remain on substrates and that it is not feasible to remove all tar. It is required that no loose debris will remain and that no build up will remain which may interfere with replacement or require disturbance during roof replacement.

PART 2: EXECUTION OF WORK

- A. Regulations: The Asbestos Abatement Contractor, the Contractor, will conform to all applicable Federal State and Local Regulations. The principal Applicable Regulations are:
1. OSHA 29 CFR 1926.1101 (Asbestos); 1926.59 (Hazard Communication); 1926.416-417 (Work Practices); 1926.24,38, 150-155 (Fire Safety); 1926.450 (Ladder Safety); 1926.451 (Scaffolds); 1926.401, 416-417 (Electrical Safety), 1910.134 (Respirator Use.)
 2. NESHAP (National Emissions Standards for Hazardous Air Pollutants) 40 CFR 61 Subpart M. (Amended 11/20/90)
 3. Connecticut General Statutes Sections 19a-332-1 through 19a-332-16 inclusive. (Standards for Asbestos Abatement, Amended 1/91)
 4. CT General Statutes Sec 22a-209-8 (i) (DEP Applies to Waste Disposal in Connecticut)
 5. Connecticut General Statutes Sections 19a-332-17 through 19a-332-23 inclusive. (Licensing and Training Requirements for Asbestos Abatement)
 6. CFR 49 parts 171-173 US Dept of Transportation.
 7. All State, County, and Department or Municipal codes and ordinances as applicable.
 10. Where applicable State, Federal and Local Regulations differ, the more stringent regulation applies.
- B. Personal Air Monitoring:
1. Personal air sampling shall be conducted by the Contractor according to 1926.1101. Provide a State of Connecticut DPH (Department of Public Health) licensed Project Monitor for this purpose. Samples will include daily 30-minute excursion limit samples and 8-hour time-weighted average concentration samples. Personal air sampling results must be recorded at the work site within 24 hours and be available for review until the job is complete. Air Monitoring must be supervised by a Licensed Project Monitor.

C. Notifications

- A. Send written notification as required by state and local regulations prior to beginning any Work on asbestos-containing materials.

1. Connecticut DPH: Not required for <25 sq ft of non-friable exterior ACM to be removed
2. Connecticut DEEP: Any disposal of Asbestos in the State of Connecticut must be authorized by the office of Solid Waste Management. To request a disposal permit, contact the Solid Waste Management Unit at (860) 424-3366. Twenty-five day notification must be sent to:

State of Connecticut
Dept. of Energy and Environmental Protection (DEEP)
Solid Waste Management Unit
79 Elm Street,
Hartford CT 06106

3. Local Fire Department. Send written notification 10 days prior to the start of Work.

D. Pre-Work Meeting;

1. Technical Submittals to the Engineer Required Before Work Begins:
 - a. Copies of all required permits and notifications.
 - b. Copy of Contractor's Asbestos Abatement license.
 - c. Copies of supervisor and worker training certificates for each employee to be used for the project training including EPA - OSHA and Connecticut DPH required training in a State of Connecticut Approved training center: 5 days for supervisors and 8-hr training for workers (see page 7). This documentation shall include copies of initial and refresher training to date. For each worker proof of up to date fit testing and medical surveillance required by CFR 29 1926.1101 and 1910.134.
 - d. Documentation, when rental equipment is to be used, that the renter is aware of the intended use of the rented equipment.
 - e. Copies of personal air monitoring results from similar jobs within 12 months.
 - f. Emergency plans: Contractor is responsible for applicable notifications and coordination regarding fire safety and emergency response.

- g. Required OSHA Hazard Communication information and training for any hazardous chemicals at this site according to CFR 29.1926.59. A list of all the hazardous chemicals to be brought to the site including amounts to be brought in, the intended use, and Material Safety Data Sheets (MSDS's) for each chemical.

2. Other Topics:

- a. Deployment and setup including locations for materials, dumpsters, egresses and equipment.
- b. Work schedule

E. Asbestos Qualifications of Contractor and Subcontractors:

1. Contractor must have sufficient ability and experience in Asbestos Abatement and must be capable of meeting all the requirements of the regulations and the specification to enable him to prosecute and complete the work successfully.
2. All employees performing work involving only intact incidentals shall be trained (minimum OSHA 8-hour roof training). In the case of asbestos roofing abatement there is a Memorandum of Understanding (MOU) between OSHA and the National Roofing Contractors Association (NRCA), dated 3/15/95, on how to remove asbestos roofing. Regardless of whether the material is friable or non-friable, DEEP disposal regulations still apply. Since Intact Incidental ACM roofing which includes cements, coatings, mastics, and flashings, was detected within the scope of this inspection, the removal is to be by individuals with a minimum of OSHA 8-hour roof training.
3. Any personnel who are not on the contractor's direct payroll are considered subcontractors and full submittals shall be required for any such subcontractors.

F. Site Condition: Prior to the bidding on the Work, bidders shall visit the site and be fully acquainted with present and expected conditions affecting the Work, including but not limited to:

1. Physical condition of the site.
2. Handling and storage of tools, equipment and materials.
3. Access to water, electric power, and other variables which may affect the Work.
4. The character and quantity of all surface and subsurface obstacles to be encountered.
5. Any existing damage: The Contractor shall submit to Owner in writing a list of any pre-existing damaged items on building and fixture condition prior to commencement of Work. The submittal shall include a photographic record of prior damage and/or deficiencies.

G. Safety and Security:

1. Contractor has responsibility to establish and maintain workplace safety and security in the areas of His Work.
2. Contractor will maintain at the work site daily logs of activities and the names of all persons entering the site and include these logs with required submittals at the end of the project.

H. Personnel Protection:

1. Contractor's workers shall be instructed on fire, electrical, and other hazards peculiar to this job site. Instructions will include spill response, power failure and emergency evacuation procedures. The workers will receive the required OSHA Hazard Communication information and training for any hazardous chemicals brought to this site.
2. All persons entering the Work Area shall wear prescribed protective clothing and respirators. Respiratory protection shall meet the requirements of OSHA as described in 29CFR 1910.134 and 1926.1101 for Asbestos.
3. The Contractor will provide appropriate respirators, disposable suits, and other safety equipment at no cost to his employees, for Asbestos and as needed for other physical and health hazards at the work site.
4. Any feasible combination of engineering controls, work practices, and personal protective equipment may be used to reduce personnel exposure to Asbestos and other hazards.
5. The Contractor has responsibility to maintain a Competent Person on site at all times. Duties of the Competent Person shall include:
 - a. Assessments required by OSHA 1926.1101.
 - b. Maintaining copies of Regulations including 1926.1101 and 40CFR 61 Subpart M, all records specified in the regulations and a copy of these Specifications on site.
 - c. Posting signs and guarding the Work Area against unauthorized intrusion and ensuring all persons entering the Work Area are properly certified, trained, and equipped and that each entry is recorded in the site log.
 - d. Providing workers with safety equipment.
 - e. Ensuring proper decontamination procedures.

- f. Ensuring in general a safe working area in all locations where employees must pass. This will include protection against eye injuries, falling on slippery surfaces, fall protection, proper construction of scaffolds or staging, proper use of ladders, power tool use, fire protection and emergency treatment or evacuation. If a recognized hazard is discovered:
- 1) If the area is under the contractors control, isolate the area from entry until the hazard is remedied. Take all reasonable steps to remedy the hazard.
 - 2) If the area is not under the contractor's control, report any unsafe conditions immediately verbally and in writing to the owner and to all persons who may pass through an area where such conditions may exist. Deny access to contractor's employees until the condition is corrected and post warning signs to warn others of the hazard.
- g. Ensuring that persons will not smoke, drink, eat, or chew gum or tobacco in the Work Area.
- h. Ensuring that the prescribed protective clothing, respirator use and decontamination measures in the Work Area, including all those described in this Specification and prescribed in the Regulations will remain in effect during asbestos roofing removal.
- i. Employers shall make available to employees information on programs to aid workers in cessation of smoking.
- j. Employees working in contiguous areas to the Work Area must understand warning signs. Bilingual signs, pictographs or graphics may be required.

I. Neighborhood Considerations:

1. Work will be conducted to avoid disturbing the neighborhood. Contractor will coordinate with PM suitable locations for egresses, equipment and waste facilities.
2. After a Asbestos waste container is deployed, it will remain locked unless in immediate use. The Supervisor will maintain control of the key.
3. Littering of the area is prohibited. Contractor will provide suitable receptacles for beverage and food containers and all other such litter and ensure that no litter is generated on the premises.

J. Materials:

1. Deliver all materials in the original container, packages with original manufacturers labels.
2. Damaged or deteriorated materials shall not be used and shall be removed from the premises. Material that becomes contaminated with Asbestos shall be decontaminated or disposed of as Asbestos waste.
3. Use only Asbestos-free replacement materials and according to applicable fire or building codes.
4. Signs to be posted at the Work Area shall be in sufficient quantity to post at all entries to Work Areas. Signs will comply with OSHA 1926.1101. Supplementary bilingual, pictograph, and/or graphics signs must be available.

K. Tools and Equipment

1. The Contractor will have available spray equipment capable of mixing wetting agent with water and generating sufficient pressure and volume and having sufficient hose length to reach all areas with Asbestos.
2. Impermeable containers are to be used to receive and retain any Asbestos-containing or contaminated materials until disposal at an acceptable disposal site. Containers shall be labeled in accordance with OSHA 1926.1101 and shall be both water and air tight.
3. The Contractor shall have sufficient personal Air Monitoring equipment to monitor each type of activity in each Work Area.
4. Contractor shall provide suitable tools for Asbestos Removal.
5. Contractor shall have sufficient quantity of safety equipment and materials necessary for the job including safety lines and harnesses, protective clothing, filter cartridges, spare fitted masks for each worker, air sample personal pumps and cassettes, signs, grounded power cables, GFCI units, HEPA vacuums,
6. Power tools for roof cutting must be equipped with emission control devices including HEPA filtered blowers to catch dust or water misting sprays as appropriate for the equipment.

L. Final Check List before Commencement of Asbestos Abatement Work:

1. Arrangements made for disposal of waste at an acceptable site.
2. Materials, tools and equipment specified including waste receptors are on hand.
3. All worker training has been completed.
4. All submittals have been received and are in proper order.

M. Multi-Employer Worksites: OSHA Requirements: 1926.1101

1. The asbestos contractor shall inform other employers at the site of:
 - a. the nature of the work with asbestos
 - b. the existence of and the requirements of regulated areas,
 - c. the measures to be taken to protect employees of the other employers from exposure.

- d. that these employers must ascertain on a daily basis that the work area perimeter is secure, or otherwise:
- 1) move their employees away from the regulated area until any breeches are corrected or
 - 2) Provide the same protective equipment as specified herein for the asbestos contractor.
2. Comply with the stricter of supervision of the general contractor or PM with respect to their determination of whether the asbestos contractor is in compliance with the OSHA asbestos standard 1926.1101.
 3. Regardless of who creates any asbestos hazard, the employer of exposed employees is required to comply with applicable protective provisions of 1926.1101 to protect his employees.
 4. Employers who discover the presence (of ACM or PACM) on the worksite must notify the project or building owner. On worksites having multi employers, the person who discovers the material is also to notify the other employers. An employer on a multi job worksite who is planning class I or class II asbestos work is to inform all the other employers on the site. They are to be informed of the location and quantity of these materials and the measures to be taken to protect them from exposure.
 5. Transmit data to the Owner any knowledge of the location and amount of ACM or PACM who must in turn pass this information to employers of employees who may be exposed.
 6. Before class I, II or III work, is initiated, building and or project owners must notify their own employees and employers who are bidding on such work, of the quantity and location of ACM or PACM present in such areas. Owners must also notify their own employees who work in or adjacent to such jobs. Employers who are not owners planning any such covered activity must notify the owner of the location and quantity of ACM and PACM known or later discovered. The building owner must keep records of all information received through this notification scheme, or through other means, which relates to the presence, location and quantity of ACM and PACM in the owner's building, project or vessel and transfer all such information to successive owners. OSHA has defined 'building owner' to include those lessees who control the management and record keeping functions of a building/facility.
 7. Within 10 days of completion of Class I or II asbestos work, the asbestos contractor shall inform the owner and employers who will be working in the area of the quantity and PACM or ACM remaining in the former regulated area and the final monitoring results.
 8. For inadvertently discovered ACM/PACM there is a 24 hour notification requirement to the owner and all employers at the site.

N. Exposure Assessment:

1. Each employer who has a workplace where asbestos abatement is conducted, must ensure that a competent person conducts an exposure assessment in accordance with 1926.1101 immediately before or at the initiation of the abatement to ascertain expected exposures.
2. Each Initial Exposure assessment by the Competent Person shall include:
 - a. Air monitoring historical data
 - b. Degree and quality of supervision
 - c. Employee training and experience
 - d. Techniques used for wetting the ACM or PACM in the various circumstances encountered
 - e. Placing and repositioning the ventilation equipment, and
 - f. Impacts due to weather conditions

O. Prohibitions:

1. High speed abrasive disc saws to cut ACM or PACM shall not be used unless inside the containment with HEPA filtered negative exhausts as herein specified or unless equipped with local HEPA filtered ventilation to collect contamination from cutting.
2. Compressed air use for cleaning ACM or PACM contaminated surfaces unless conducted inside the containment with HEPA filtered negative exhausts as herein specified.
3. Dry shoveling or sweeping or other dry clean-up of dust and debris containing ACM or PACM is prohibited.
4. Employee rotation as a means of reducing employee exposure is prohibited.
5. Sanding ACM or PACM flooring, backing or mastic is prohibited.
6. Material that has been removed shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand it shall be lowered to the ground via covered, dust-tight chute, crane, or hoist. All such material shall be removed from the roof as soon as practicable, but no later than the end of the workshift. Then properly packaged for disposal.

P. Personnel Protection

1. Contractor's workers shall be instructed and equipped to for protection from fire, electrical, and other hazards peculiar to roofing abatement. The Contractor will take appropriate precautions for other non-Asbestos hazards at the site including:
 - a. Fall hazards including the roof structural conditions
 - b. Electrical and fire safety
 - c. Fire prevention and escape
 - d. Excessive cold or heat stress for workers
 - e. Wind hazards
 - f. Proper traction on icy or other slippery surfaces.
 - g. Eye and head protection

2. Any feasible combination of engineering controls, work practices, and personal protective equipment may be used to reduce personnel exposure to Asbestos and other hazards.
3. All persons entering the Work Area shall wear prescribed protective clothing and respirators until the Asbestos related work is successfully completed in the Area.

Q. Preparation of the Work Areas

1. Isolate heating, cooling and ventilating air system intakes on the roof to prevent contamination and fiber dispersal to other areas of the facility. Isolation will be accomplished by sealing air tight using plastic and tape if appropriate or other means dictated by safety and mechanical considerations.
2. Establish the area of roof abatement as a regulated Work Area by means of signs posted at the Work Area perimeter. Saw horses or stands to hold the signs should may be used to identify the asbestos work area.
3. Provide a clean change area at the work area perimeter equipped so that workers can decontaminate their suits and person with HEPA vacuums and change into street clothes without passing back through the Work area. This area should include shrouds for privacy. The location will be coordinated by the PM on site. The privacy barriers must be sufficiently sturdy to resist dislodging, breaching or collapsing under wind and active work conditions. For roof work the decon unit should be located at ground level, where workers can change into street clothes without passing back through the regulated area.

R. Work Practices: Contractor shall observe the following work practices:

1. Continually mist any cutting blades used.
2. Keep roofing intact during removal. The recommended manual methods outlined by OSHA include but not be limited to the use of spud, spade, flat-blade or slicing tools, such as axes, mattocks, pry bars, spud bars, crow bars, shovels, flat-blade knives, and utility knives, to slice, cut, strip-off, shear-under, or pry-up the material.
3. Use wet methods. Except if the competent person determines that the specific conditions of a roofing job (eg a steeply sloping roof, or below freezing temperatures combined with the water resulting from any misting, would create a slipping hazard, misting may be omitted, if other precautions are followed, such as equipping the power tool with a HEPA vacuum system, or using hand methods.
4. Immediately lower unbagged material to a covered receptacle using a dust tight chute, crane or hoist; or immediately wrap material in plastic sheeting and lower it to ground by end of shift.
5. Loose dust left by sawing is to be HEPA vacuumed immediately.
6. Power cutting with misting is allowed if cuts are made to obtain largest feasible pieces.

7. Only necessary work shall be done on the roof while asbestos materials are being removed and the locations of the work shall be selected to minimize exposure, such as upwind of the asbestos work and at least 20 ft from the work area perimeter.
8. Contractor must maintain full personal protection including maintaining the roof as a regulated area, clean change areas and appropriate respirators as delineated in this specification.
9. Establish a material egress location nearest the Asbestos waste receptacle, which shall be at a location agreed at the pre construction meeting. If Asbestos waste is not packaged on the roof, an air tight chute or crane or hoist must be used to transfer the wet material immediately to the lined dumpster or other properly prepared container. The base of any chute used must be enclosed air tight to prevent spillage. If asbestos waste is packaged on the roof, it must be in sealed packages conforming to these specifications and lowered ground and placed in a secure location no later than the end of the work shift.
10. No Asbestos or other litter will be permitted on the ground.
11. If power cutting tools are used, wet misting, HEPA filtered devices or equivalent controls must be used in conjunction with the power cutting tools to prevent any visible emissions. Cutting machines, when used, shall be misted continuously during use unless a competent person determines that misting substantially decreases worker safety. Otherwise a knife cut and lift may be used.
12. Roofing material shall be removed in an intact state to the extent feasible.
13. Use Amended Water to wet Asbestos material freshly before Abatement Work and to maintain wet for disposal.
14. Impact and vibration must be avoided so as not to cause emissions of dust or debris in the interior of the building.
15. After completion of Stripping Work, all surfaces from which Asbestos has been removed shall be HEPA vacuumed or cleaned by an equivalent method to remove all visible dust and debris particles.
16. The combination of control measures used must produce no visible dust nor leave visible residue.
17. Report any existing voids or new damage, especially holes, in the substrate at once to the owner and to the PM so that proper precautions may be taken for interior protection. When voids are discovered stop any work which may dislodge roofing material into the building.

S. Final Inspection

1. After cleaning each Work Area, and before installation of roofing, Contractor will make an initial visual inspection and notify the PM that Work is complete. An inspection by the PM shall then be conducted. If the PM finds that the Work is incomplete or that there are visible accumulations of residue, the Contractor shall repeat the cleaning at His expense until the Work Area is in compliance.

T. Disposal

1. Impermeable double containers are to be used to receive and retain any Asbestos-containing or contaminated materials until disposal at an acceptable disposal site. Containers shall be labeled in accordance with OSHA 1926.1101 and shall be both water and air tight. All containers must be labeled in large legible letters:

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD**

2. After the Asbestos waste container is deployed, it will remain locked unless in immediate use. The job Foreman or designated person will maintain control of the key.
3. The waste container shall be tagged or labeled clearly with the name of the asbestos contractor and the name of the work site.
4. Each Asbestos waste pickup will be signed for using chain of custody forms provided in the EPA regulations CFR 40 Part 61.
5. The Contractor will turn over to the PM a copy of the custody document for the waste within 24 hours after the material has left the site and forward the complete disposal documentation to the PM and Owner within 45 days.
6. Non-friable materials meeting the EPA NESHAP definition of Category 1 materials which are removed intact may be placed in a bulk Asbestos waste container meeting the following requirements:
 - a. The container is labeled and constructed in compliance with applicable OSHA, EPA and DOT regulations and state and local regulations of the States through which the materials is to be transported and/or disposed of and meets the requirements of the EPA approved landfill which is intended to receive the material.
 - b. The container contents are adequately wet.

PART 3. DEFINITIONS:

Abatement: Procedures to control fiber release from Asbestos-containing materials; includes Removal, Encapsulation, and Enclosure.

Air Monitoring: The process of measuring the fiber content of a specific volume of air in a stated period of time.

Licensed Project Monitor (PM): A DPH Licensed professional capable of conducting air monitoring and analysis schemes. This individual is responsible for recognition of technical deficiencies in worker protection equipment and procedures during both planning and on-site phases of an Abatement project. Monitoring and worker protection. Air sampling shall be in accordance with NIOSH Method 7400 or per Appendix B of OSHA standard 29 CFR 1926.1101.

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

Asbestos: Asbestos is a name given to a number of naturally occurring fibrous silicates. There are two varieties of Asbestos; the serpentine form (Chrysotile) characterized by long, soft, flexible, and wavy fibers, and the amphiboles which occur as straight, needle-like fibers, and consist of crocidolite, amosite, anthophyllite, tremolite and actinolite.

ACM / Asbestos Containing Material: A material which contains more than 1% Asbestos by volume per EPA test Method 600/R-93/116.

DPH: Connecticut Department of Health

Category 1 and 2 Asbestos materials: Non-friable materials as defined in the amended NESHAP regulation 40 CFR 61, 11/20/90.

Class I Asbestos Abatement Work: Removal of Thermal System Insulation and surfacing removal of ACM or PACM (TSI and Surfacing have the same meaning as in EPA AHERA except drywall is not classed as surfacing but plaster is.

Class II Asbestos Abatement Work: Removal of ACM or PACM other than TSI and surfacing.

Class III work: Repair involving disturbance of ACM or PACM.

Class IV work: = Maintenance and custodial work in areas with ACM or PACM such as dusting surfaces, vacuuming carpets, sweeping or mopping asbestos containing floors or floors in areas where ACM or PACM is present; cleaning up ACM or PACM, changing a light bulb or battery in a smoke detector on a surfaced ceiling, polishing floor tile.

Clean Change Area: An area equipped as specified herein so that workers can decontaminate their suits and change into street clothes without passing back through the regulated area.

Competent Person: A person experienced in Asbestos Abatement with a current Asbestos Abatement Supervisor's Certificate from an EPA Approved Training Center. In addition, a person meeting the following requirements in 1926.32: "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them."

Curtained Doorway: A device to allow passage from one area to another while permitting minimal air movement between areas, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

Engineer: Diversified Technology Consultants (DTC)

Friable Asbestos Material: An Asbestos material that can be crumbled, pulverized or reduced to powder when dry by hand pressure and which releases Asbestos fibers into the environment.

HEPA Filter: A high efficiency particulate air (HEPA) filter in compliance with ANSI Z9.2-1979.

HEPA Vacuum: Vacuum equipment with a HEPA filter system for filtering the air effluent from the unit.

NESHAP: National Emission Standards for Hazardous Air Pollutants, including Asbestos, administered by the EPA.

NIOSH; National Institute for Occupational Safety and Health.

Owner: Anthony DeLuca

PACM: Presumed Asbestos Containing Material. OSHA definition: TSI or Surfacing. Note: OSHA also assumes roofing and resilient flooring to contain asbestos but the work practices differ. EPA assumed ACM covers a much broader range of building materials.

Permissible Exposure Limit (PEL): OSHA Standard. The employer shall ensure that no employee is exposed to an airborne concentration of Asbestos, tremolite, anthophyllite, actinolite, or a combination of these materials is excess of the PEL of 0.1 fibers per cubic centimeter of air as an eight (8) hour time weighted average (TWA), or in excess of 1 fiber/cubic centimeter as a 30-min excursion limit as determined by the method prescribed in appendix A to OSHA Regulations 29 CFR 1926.1101, or by an equivalent method.

Removal: All herein specified procedures necessary to remove Asbestos Containing Materials from the designated areas and to transport and dispose of these materials at an acceptable site.

Stripping: Taking of Asbestos materials from any surface.

Surfactant: A chemical wetting agent added to water to improve penetration.

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WEST HAVEN, CT

Wet Cleaning: The process of eliminating Asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning items as Asbestos contaminated waste.

Work Area: An area where Asbestos Abatement operations are performed which is isolated by physical boundaries to prevent the spread of Asbestos dust, fibers, or debris; Designated rooms, spaces or areas of the project in which Asbestos Abatement actions are to be undertaken or which may become contaminated as a result of such Abatement actions.

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OORR PROGRAM
CDBG-DR STORM SANDY

DELUCA RESIDENCE
411 BLOHM STREET
WEST HAVEN, CT

PART 5 LIST OF DRAWINGS

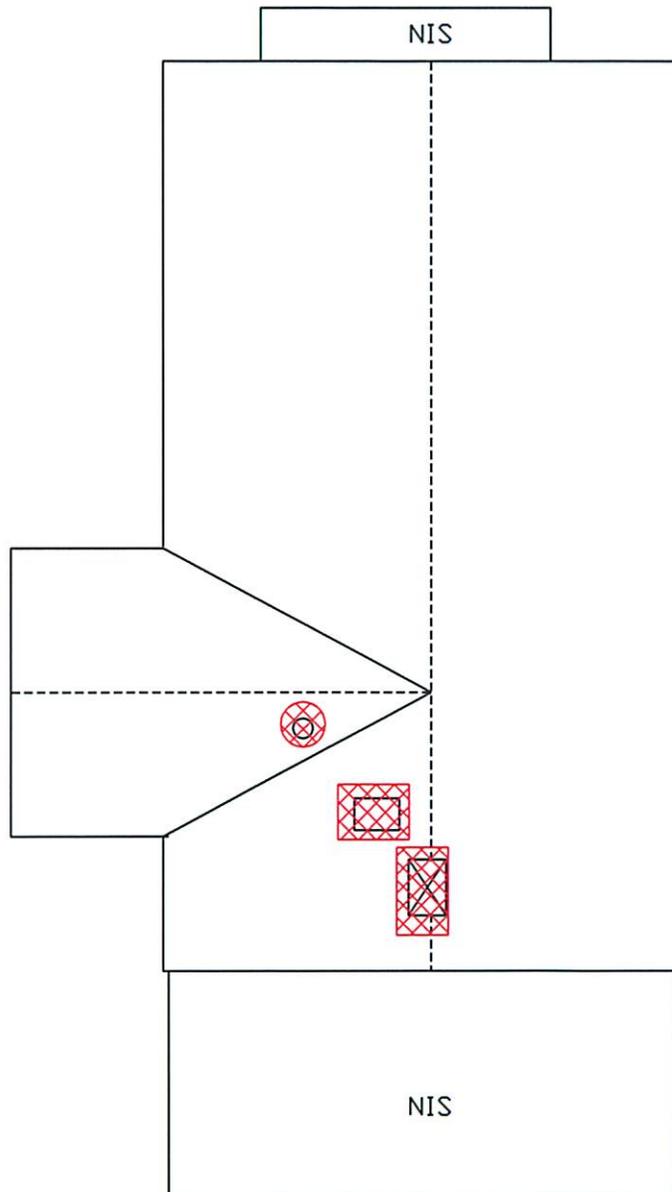
DRAWING NUMBER DESCRIPTION

(NOT TO SCALE):

2A Location of ACM Roof Flashing in Scope of Work

DECONTAMINATION UNIT DETAIL (FOUR DRAWINGS)

← BLOHM ST →



ChemScope Inc.

Site 008
411 Blohm Street, West Haven, CT
ROOF
CS# 183-77, 4-25-14

ACM LOCATION DRAWING



LEGEND OF SYMBOLS

☒ ACM Roof Flashing

NIS Not in Scope

NOTATIONS

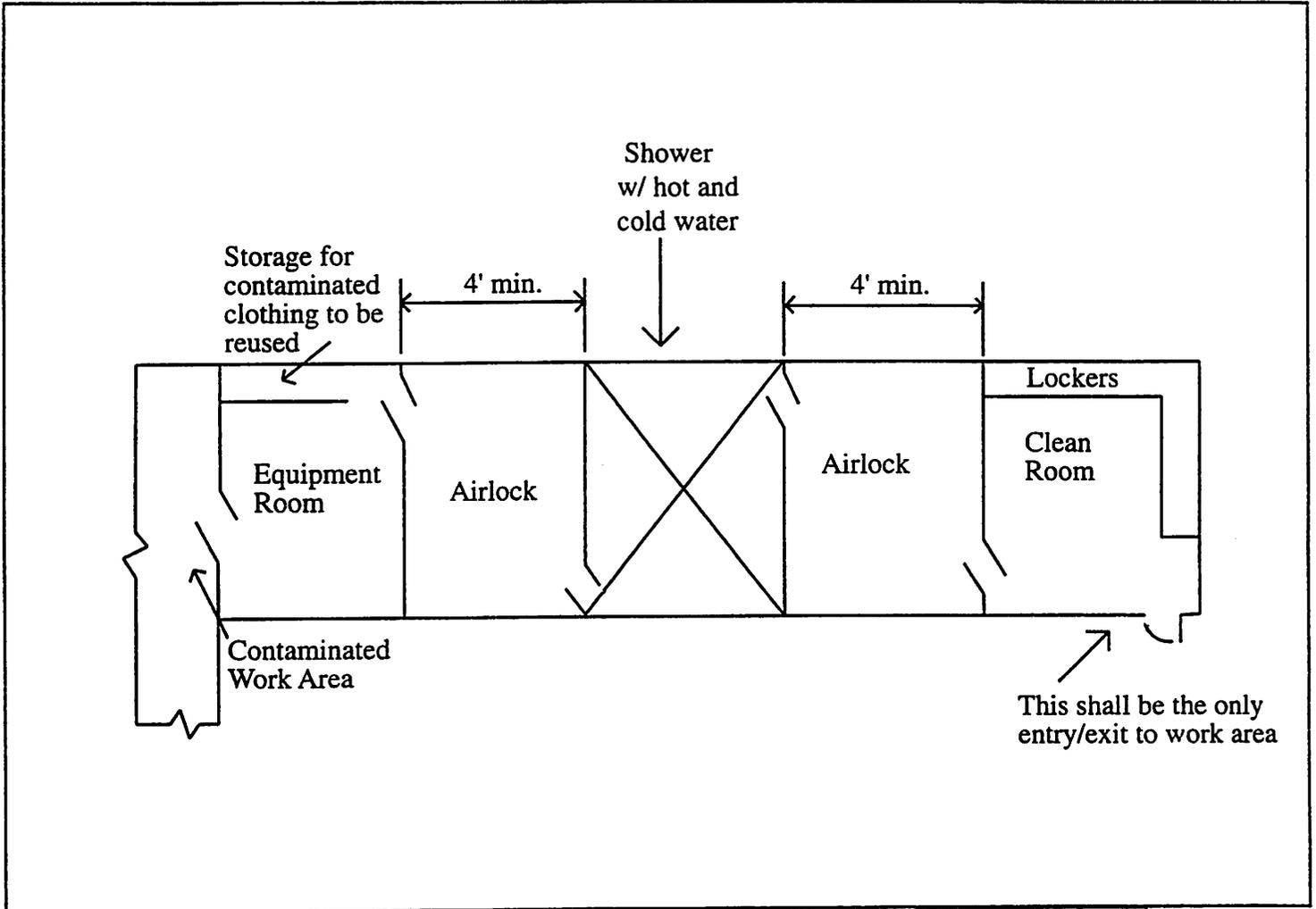
DRAWN BY:
DAN SULLIVAN

ChemScope Inc.

SHEET TITLE:
**ASBESTOS AND
LEAD INSPECTION**
**411 BLOHM ST
WEST HAVEN, CT**

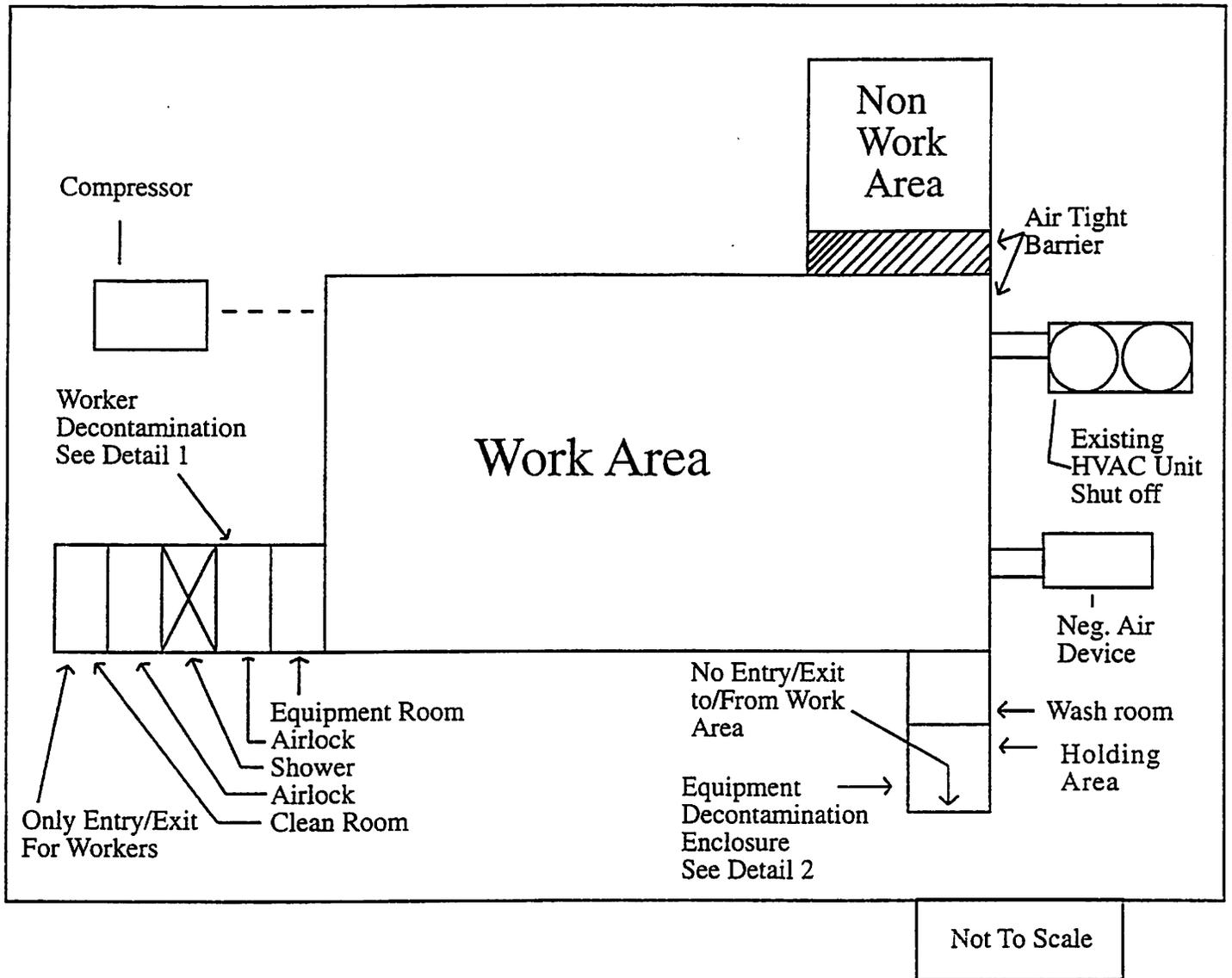
Roof

CHEMSCOPE NUMBER: CS# 183-77	DRAWING NUMBER
SCALE NOT TO SCALE	2A
DATE 4/25/14	

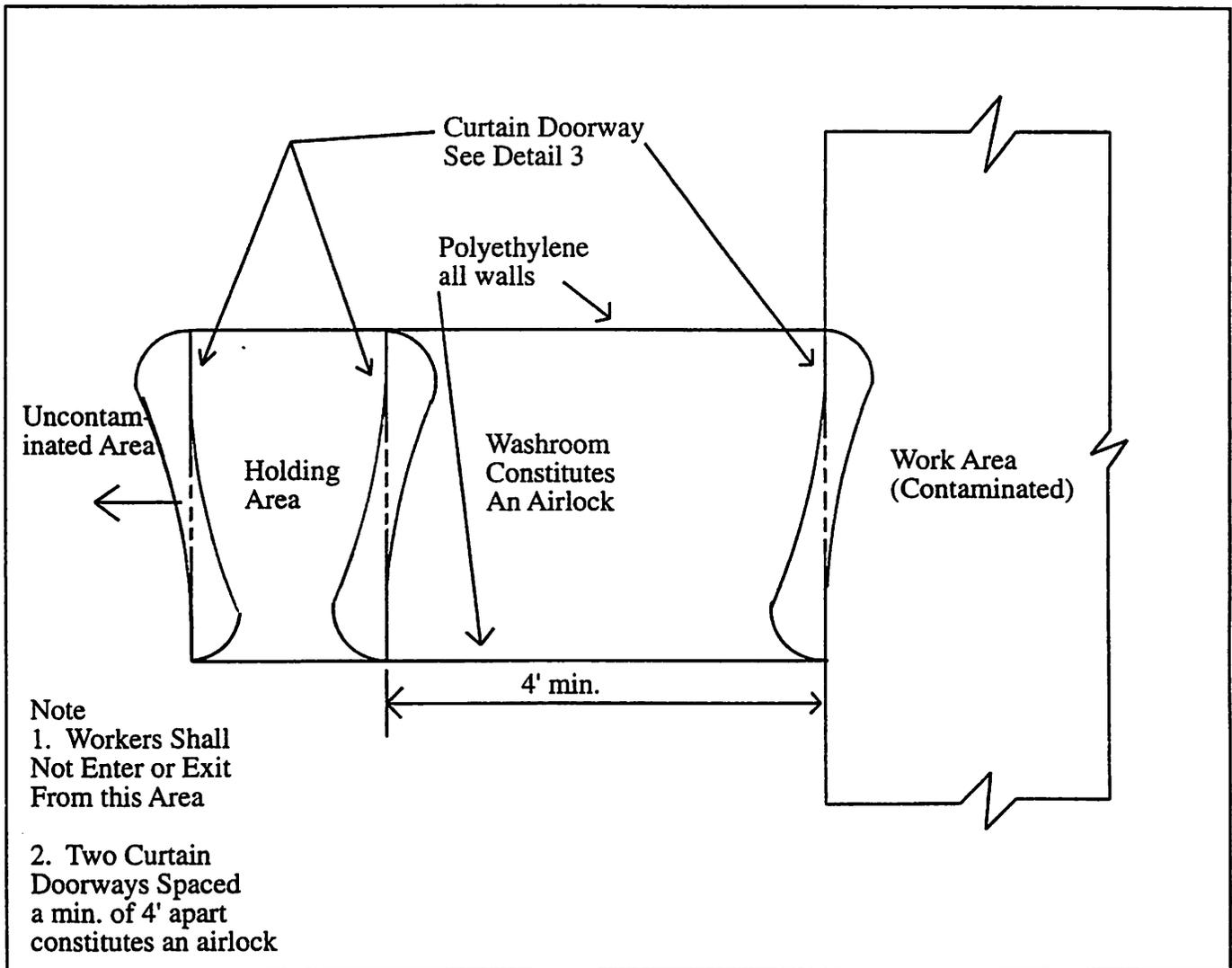


Not To Scale

Schematic of Worker Decontamination Enclosure Detail 1



Schematic Building Plan



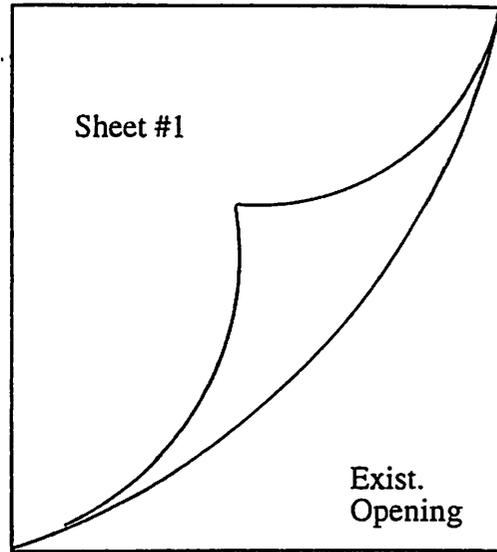
Not To Scale

Plan of Equip. Decontamination Enclosure Detail 2

END OF SECTION

1. Secure top Edge
of Sheet #1
Along Top Edge
of Opening

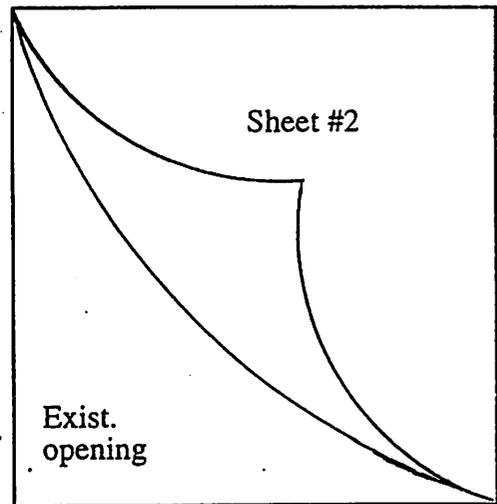
2. Secure Sheet #1
Along one vertical
side of opening



A

3. Secure Polyethylene
Sheet#2 Along
Top edge of opening

4. Secure Polyethylene
sheet #2 along opposite
side of opening as
sheet#1 was secured



B

Curtains Doorway Detail 3

APPLICANT NO. 2140
OORR PROGRAM
CDBG-DR STORM SANDY

DELUCA RESIDENCE
411 BLOHM STREET
WEST HAVEN, CT

APPENDIX A

Scott Feulner
Diversified Technology Consultants (DTC)
2321 Whitney Avenue, Suite 301
Hamden, CT 06518

5/2/2014

**ASBESTOS PRE-RENOVATION INSPECTION
SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION #2140
CS#183-77, 4/25/2014, Page 1 of 4**

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Inspection Report Synopsis	3
Limitations of the Inspection	4
Recommendations	4

Attachments:

- Scope of inspection drawing-1 page
- ACM location drawing-1 page
- PLM Certificate of Analysis report with chain of custody-5 pages
- Sample location drawing-1 page

Report Distribution:

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Curtis Graham, DTC graham.curtis@teamdtc.com
Michael Casey, DTC michael.casey@teamdtc.com

File Location:

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**ASBESTOS PRE-RENOVATION INSPECTION
SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION #2140
CS#183-77, 4/25/2014, Page 2 of 4**

INTRODUCTION

EXECUTIVE SUMMARY: Asbestos containing materials (ACM) were detected within the scope of this inspection and will need to be properly removed (abated) and disposed of prior to renovation that would disturb these materials. See Inspection Report Synopsis and Recommendation sections for further details.

BUILDING DESCRIPTION: The subject building is a single-family, two-story house, with an attic and basement totaling approximately 1900 sq ft, which was built in 1906 of wood-frame construction. Heat is supplied from a boiler in the basement. At the time of our screening, there were no children under the age of six residing at this subject house and the house was not being used as a daycare facility.

BACKGROUND: We understand the subject house suffered damage as a result of hurricane Sandy on October 29-30, 2012. The house is scheduled to be renovated. We understand a tree limb cause damaged to a basement window, and the paint on the concrete wall below that window. We understand the homeowner fixed the broken window, but the wall below it still needs to be re-painted. We understand the upper roof suffered damage and is scheduled to be replaced.

SCOPE OF INSPECTION: Asbestos Pre-Renovation Inspection of the upper roof only at the subject house, as directed by our client.

Our work included the following:

- Collection and analysis of building materials within the scope of renovation for asbestos, as required by the regulations.
- A list with quantity, type and location of asbestos containing materials (ACM) in the scope.
- Report of the findings including ACM location drawings.

This investigation and information provided in this report depends partly on background information provided by the client. This report is intended for the use of the client. The scope of services performed may not be appropriate for other users and any use of this report by third parties is at their sole risk. This report is intended to be used in its entirety. No excerpts may be taken to be representative of this report.

TEST PARAMETERS: This is an Asbestos Pre-Renovation Inspection intended to identify the presence, location, and quantity of any asbestos containing building materials which are part of the Renovation for compliance with OSHA 1926.1101 (k)(2)(i) and CT DPH 19a-332a-1 through 16.

For sampling, EPA Wet Methods are used to prevent fiber release. Building materials sampled are analyzed at our laboratory by EPA method 600/R-93/116. This is currently the approved EPA Test method, which uses Polarized Light Microscopy with Dispersion Staining. The laboratory is accredited by NIST/NVLAP and AIHA, and is a Connecticut Approved Environmental Laboratory for Asbestos Analysis.

**ASBESTOS PRE-RENOVATION INSPECTION
 SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
 APPLICATION #2140
 CS#183-77, 4/25/2014, Page 3 of 4**

INSPECTION REPORT SYNOPSIS

LOCATION NAME AND ADDRESS: Site 008, Application #2140
 411 Blohm Street, West Haven, CT

INSPECTION DATE(S): 4/25/2014

QUALIFICATIONS: The Inspection was conducted by Daniel P. Sullivan:

- EPA & State of Connecticut Accredited Asbestos Inspector, Project Monitor & Project Designer
- State of Connecticut Licensed Asbestos Inspector/Management Planner (#000019)
- State of Connecticut Licensed Asbestos Project Monitor (#000036)
- State of Connecticut Licensed Asbestos Project Designer (#000096)

Dan was assisted by Ziyang Wang. For information about Chem Scope, Inc., log onto <http://www.chem-scope.com>.

FINDINGS: The following asbestos containing materials (ACM) were detected in the Scope of the Inspection:

MATERIAL	LOCATION	~FOOTAGE
Black ACM roof flashing tar (at penetrations, roof joints, patch areas, etc.)	Upper Roof	10 sq ft

The following is a summary table of the materials that tested as non-Asbestos Containing Material (ACM) (<1%) within the Scope of Work (not already summarized above):

Material	Location	Sample #'s	Findings
Black fibrous roof shingle with white granules (on black fibrous roof shingle with red granules on black fibrous paper on wood)	Upper Roof	183-77-3,4	No Asbestos Detected
Black fibrous roof shingle with red granules (under Black fibrous roof shingle with white granules, on black paper on wood)	Upper Roof	183-77-5,6	No Asbestos Detected
Black fibrous paper (under two layers of shingles, on wood)	Upper Roof	183-77-7,8	<1%Chrysotile Asbestos*

* Materials with <1% asbestos (such as the black fibrous paper) are not defined as asbestos containing materials in DPH and EPA regulations. However, OSHA regulations require proper procedures be used to prevent exposure to workers performing the related disturbance. This includes training and protection for employees who may be exposed above the OSHA PEL.

LIMITATIONS OF INSPECTION

It is important to note that every effort is made to detect asbestos (ACM) in the path of the renovation by our inspectors. It is not practical or prudent to demolish the entire roof during an inspection. The owner should be aware of this in case suspect materials or concealed suspect materials are uncovered during the actual renovation. If suspect materials that were previously not accessible or not sampled during this inspection are discovered during the renovation, or if the scope of the renovation changes to include disturbance of new materials not inspected, then renovation must stop and the materials must be sampled by a CT DPH licensed asbestos inspector prior to disturbance of these materials.

ASBESTOS PRE-RENOVATION INSPECTION
SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION #2140
CS#183-77, 4/25/2014, Page 4 of 4

RECOMMENDATIONS

All Asbestos Containing Materials (ACM) detected in the path of the inspection must be removed prior to the disturbance of these materials. Asbestos removal and disposal is regulated by federal and state agencies.

In the case of asbestos roofing abatement there is a Memorandum of Understanding (MOU) between OSHA and the National Roofing Contractors Association (NRCA), dated 3/15/95, on how to remove asbestos roofing. Regardless of whether the material is friable or non-friable, DEEP disposal regulations apply.

Since Intact Incidental ACM roofing, which includes cements, coatings, mastics, and flashings, was detected within the scope of this inspection, the removal is to be by individuals with a minimum of OSHA 8-hour roof training. The Intact Incidental ACM roofing is currently non-friable and as long as it stays non-friable by utilizing the manual methods outlined in OSHA 1926.1101(g)(11)(iii) notification to the CT DPH is not required. The recommended manual methods outlined by OSHA include but not be limited to the use of spud, spade, flat-blade or slicing tools, such as axes, mattocks, pry bars, spud bars, crow bars, shovels, flat-blade knives, and utility knives, to slice, cut, strip-off, shear-under, or pry-up the material.

Also, OSHA regulations 1926.1101 requires that before asbestos removal or repair work (class I, II or III work) is initiated, building owners/facility owners must notify their own employees and employers who are bidding on such work, of the quantity and location of ACM or PACM (presumed asbestos containing material) present in such areas. Also for inadvertently discovered ACM or PACM there is a 24-hour notification requirement to the owner and all employers at the site.

General Work Requirements for Intact Incidental ACM Roofing Removal (according to OSHA 1926.1101 and MOU between OSHA and NRCA):

- Before work begins and as needed during the job, a competent person shall conduct an inspection of the worksite and determine that the roofing material is intact and will likely remain intact.
- All employees performing work involving only intact incidentals shall be trained (minimum OSHA 8-hour roof training).
- The materials shall not be sanded, abraded, or ground. Manual methods as outlined above in OSHA 1926.1101(g)(11)(iii), that do not render the material non-intact shall be used.
- Material that has been removed shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand it shall be lowered to the ground via covered, dust-tight chute, crane, or hoist. All such material shall be removed from the roof as soon as practicable, but no later than the end of the workshift. Then properly packaged for disposal.

Materials with <1% asbestos (such as the black fibrous paper) are not defined as asbestos containing materials in DPH and EPA regulations. However, OSHA regulations require proper procedures be used to prevent exposure to workers performing the related disturbance. This includes training and protection for employees who may be exposed above the OSHA PEL.

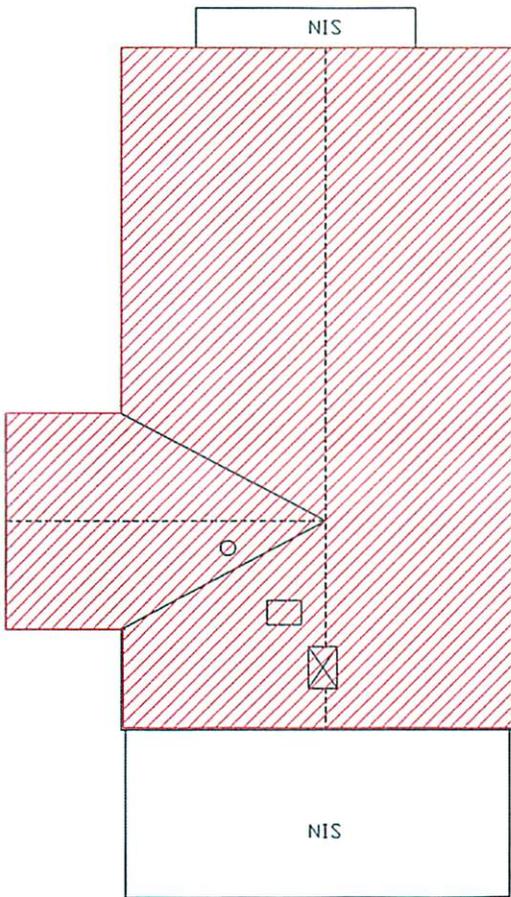
If you have any questions or need more information please call me.

Sincerely,



Dan Sullivan
Vice President, Operations

← BLOHM ST →



ChemScope Inc.
Site 008
411 Blohm Street, West Haven, CT
ROOF
CS# 183-77, 4-25-14

SCOPE OF INSPECTION DRAWING



LEGEND OF SYMBOLS

	Scope of Inspection
NIS	Not in Scope

NOTATIONS

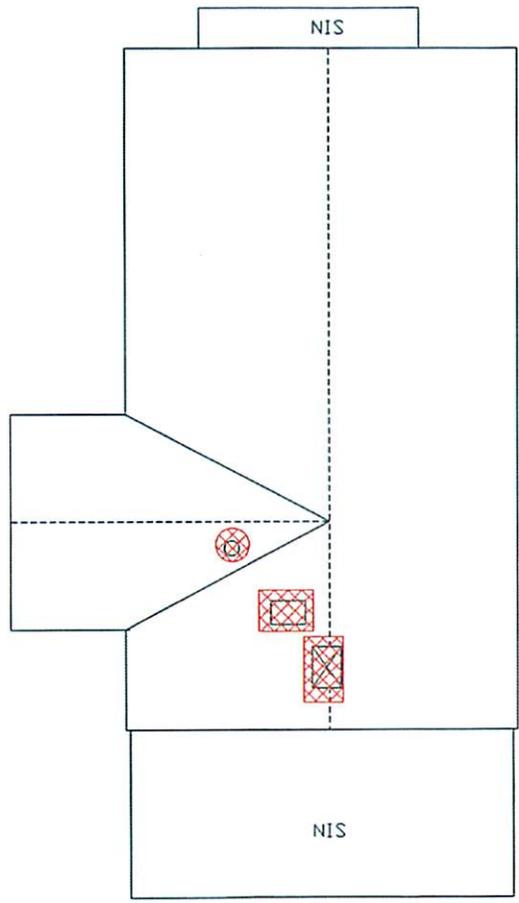
DRAWN BY:
DAN SULLIVAN

ChemScope Inc.

SHEET TITLE:
ASBESTOS AND
LEAD INSPECTION
411 BLOHM ST
WEST HAVEN, CT
Roof

CLIENT NUMBER: CS# 183-77	DRAWING NUMBER:
SCALE: NOT TO SCALE	1 S
DATE: 4/25/14	

← BLOHM ST →



ChemScope Inc.
 Site 008
 411 Blohm Street, West Haven, CT
ROOF
 CS# 183-77, 4-25-14



LEGEND OF SYMBOLS	
	ACM Roof Flashing
NIS	Not in Scope

NOTATIONS

DRAWN BY:
 DAN SULLIVAN

ChemScope Inc.

SHEET TITLE:
 ASBESTOS AND
 LEAD INSPECTION
 411 BLOHM ST
 WEST HAVEN, CT
 Roof

CHEMSCOPE NUMBER CS# 183-77	DRAWING NUMBER 1A
SCALE NOT TO SCALE	
DATE 4/25/14	

Certificate Of Analysis

Diversified Technology Consultants (DTC) - Scott Feulner
2321 Whitney Avenue
Suite 301
Hamden CT 06518

5/2/2014
CS# 183-77
Page 1 of 3

Bulk sample(s) from Site 008, 411 Blohm Street, West Haven, CT collected by Dan Sullivan (assisted by Ziyang Wang) on 4/25/2014

Asbestos Identification in the samples. Examination made by Polarized Light Microscopy (PLM) per EPA Test Method 600/R-93/116

Sample Identification

Findings (Analyzed 5/2/14)

183-77-1 Black sticky fibrous flashing tar (at chimney penetration) / Upper Roof

*29% Chrysotile Asbestos
23% Non- Fibrous Particles
48% Volatile on Ignition*

183-77-2 Black sticky fibrous flashing tar (at chimney penetration) / Upper Roof

Not Analyzed

183-77-3 Black fibrous roof shingle with white granules (on black fibrous roof shingle with red granules on black fibrous paper on wood) / Upper Roof

*No Asbestos Detected
39% Non- Fibrous Particles
29% Volatile on Ignition
32% Fiberglass*

183-77-4 Black fibrous roof shingle with white granules (on black fibrous roof shingle with red granules on black fibrous paper on wood) / Upper Roof

*No Asbestos Detected
42% Non- Fibrous Particles
23% Volatile on Ignition
35% Fiberglass*

183-77-5 Black fibrous roof shingle with red granules (from sample #3) / Upper Roof

*No Asbestos Detected
56% Non- Fibrous Particles
44% Volatile on Ignition*

Bulk sample(s) from Site 008, 411 Blohm Street, West Haven, CT collected by Dan Sullivan (assisted by Ziyang Wang) on 4/25/2014

Asbestos Identification in the samples. Examination made by Polarized Light Microscopy (PLM) per EPA Test Method 600/R-93/116

Sample Identification

Findings (Analyzed 5/2/14)

183-77-6 Black fibrous roof shingle with red granules (from sample #4) / Upper Roof

*No Asbestos Detected
45% Non- Fibrous Particles
55% Volatile on Ignition*

183-77-7 Black fibrous paper (from sample #3) / Upper Roof

*No Asbestos Detected
7% Non- Fibrous Particles
93% Volatile on Ignition*

183-77-8 Black fibrous paper (from sample #4) / Upper Roof

*<1% Chrysotile Asbestos (point counted)
5% Non- Fibrous Particles
95% Volatile on Ignition*

**PARAMETERS
ASBESTOS PLM ANALYSIS**
(Revised 3/22/13)

1. *Materials which contain >1% asbestos (greater than 1%) by PLM (polarizing light microscopy) analysis are considered to be asbestos containing materials under EPA and the State of Connecticut Regulations. OSHA still regulates material with <1%. (Contact laboratory for information.) {Note: A more sensitive method is available called TEM (transmission electron microscopy). TEM may detect asbestos fibers that PLM cannot see, but the above agencies' enforcement is based on PLM analysis. Rules may differ for states other than Connecticut. It is best to check with the individual state. For example, New York State requires TEM confirmation of negative PLM results on floor tile}.*
2. *If no asbestos is detected in a sample, or if the asbestos content is less than 1% by PLM, additional samples of the same material should be submitted for confirmation. Please check with the laboratory for guidance on the number of samples needed. Sample collection in Connecticut must be by a DPH Licensed Asbestos Inspector. Many other states also require licensing.*
3. *Floor Tile Mastic: Mastic under floor tile should be separately sampled by scraping some of the mastic from the floor to avoid contamination from the floor tile.*
4. *Although Chem Scope, Inc. takes great effort to insure accuracy in the estimation of asbestos in the materials analyzed, no quantitation method is without some uncertainty. Based on independent calibration studies and comparison of Chem Scope's quantitative results with NVLAP and AIHA round robin programs we estimate our uncertainty in quantitation to be relatively small. The average relative uncertainty of the estimate is calculated to be 35% for samples that contain less than 10% asbestos. This means a estimate of 10% asbestos in a sample has a probable range of 6.5% to 13.5% while an estimate of 1% has a range of 0.65% to 1.35%.*
5. *The presence of non-asbestos components, which are recognized by the PLM analyst, is reported with the estimated amounts. This is not an exhaustive analysis for the non-asbestos materials since the primary purpose is to determine if asbestos is present and, if so, how much is present of each type of asbestos.*
6. *Results reported apply only to the sample(s) analyzed.*
7. *Special treatment of samples: Chem Scope, Inc. routinely uses gravimetric sample reduction techniques such as low temperature ashing or acid dissolution on samples like floor tile, roofing materials, glue dots, or high cellulose content samples prior to PLM analysis. These methods are used to aid in the PLM analysis and to provide better quantitative data. Layered samples, if possible, are analyzed separately as individual layers. However, in accordance with the method, if any layer contains >1% asbestos (greater than 1%) it is to be considered an asbestos containing material. All results are reported to the original sample basis.*
8. *Sample results are not corrected for blanks. Analytical blanks are run daily and if contamination is suspected the samples are rerun.*
9. *Chem Scope, Inc. performs "400 point" point counting when the asbestos content is visually estimated to be less than 10%. There is no additional charge for this analysis.*

The Scope of Accreditation referenced in this report applies to bulk asbestos fiber analysis by PLM (Polarized Light Microscopy).

Accreditation does not imply endorsement by NVLAP, NIST or any Federal or State Agency.

This report pertains only to the samples tested and may not be reproduced in part.

Condition of the samples at the time of receipt was acceptable unless otherwise noted on the Certificate of Analysis.

See test parameters above and attached chain of custody form.

We would love to hear from you. Comments? Questions? Please call or email us at chem.scope@snet.net.

**ChemScope, Inc. is accredited by AIHA LAP, LLC LAB #100134
NVLAP Lab Code 101061-0.**

Connecticut Department of Public Health (DPH) Approved Environmental Lab PH 0581

Signature

Analyst

Signature
(if applicable)

Inspector

Authorized Signature or

Suzanne Cristante
Laboratory Director

Authorized Signature or

Izabela Kremens
Quality Manager

Authorized Signature

Ronald Aréna
President

Dear Laboratory Customer or Potential Customer,

New laboratory accreditation standards require us to provide our clients information about our services to make sure that your requirements for testing are adequately defined, documented and understood. The following is for your information. Please call us if you have any questions or comments.

Type of Samples:

- / / PCM cassettes are routinely run by NIOSH Method 7400.
- / / Bulk materials are run by EPA Method: #600/R-93/116.

Air Samples: NIOSH 7400 Method counts all fibers. This method may be used for personal air samples and for finals. Two field blanks must be submitted for each set of samples. In the unlikely event that there is to be any deviation from the standard test, you will be consulted by phone before the work begins. Those clients who have not had NIOSH 582 or AHERA asbestos training courses (either supervisor or project monitor) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

Bulk materials: sampled are analyzed by the latest EPA Method: (#600/R-93/116) which uses polarized light microscopy (PLM). When asbestos is detected and the amount is estimated to be <10%, we automatically point count the samples. When there are interfering substances present, we may use ashing, acid washing or other procedures described in the method to handle the interference. Those clients who have not had AHERA asbestos training courses (either inspector, supervisor or project designer) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

All Samples must be clearly labeled with source name and identification number or sufficient information from the client to make this sample uniquely identified. (We will then add our notebook #, page # (batch) and unique number within the batch.) Samples must be in a clean, air tight package such as a zip loc bag. Appropriate completed paperwork must accompany the sample. Bulk and air samples may not be submitted in the same package.

As soon as available bench top results will be faxed to you and reports will then be mailed. We will retain air samples for at least three months and bulk samples for 6 months unless you advise us otherwise.

You are welcome to visit the laboratory at any time to discuss the work, monitor the work or verify our testing services. We appreciate your business and encourage any feedback regarding improving our services or our quality system. Please take a minute to complete the following survey and mail/fax it to ChemScope, Inc.

Customer Service Survey

To help us improve our services give your opinions to the following:

- 1- The printed laboratory report was complete and easy to understand. YES NO
If no, please explain _____.
- 2- The turn around time for results met your expectations/needs. YES NO
If no, please explain _____.
- 3- How likely are you to recommend ChemScope Inc. to someone?
 Excellent Very Good Good Fair Poor
- 4- How likely are you to return to ChemScope in the future if the need arises?
 Excellent Very Good Good Fair Poor
5. On a scale of 1 to 5 where 1 represents "Satisfied" and 5 represents "Dissatisfied", how would you rate your level of overall satisfaction.
 1 2 3 4 5
- 6- Please add any additional comments or suggestions that would be helpful when you use our services:

Name _____ Company _____

Address _____ Telephone/e-mail _____

Can we contact you regarding this survey? YES NO

SECTION 062000 – CARPENTRY

SCOPE

PROVIDE METAL CLIP TIES TO TIE DOWN ROOF RAFTERS AND TOP WALL PLATES TO WALLS.
PROVIDE ROOF SHEATHING PANEL AT ROOF REPLACEMENT.
REPAIR AND REPLACE DAMAGED OR ROTTED ROOF RAKE, TRIM, OR FASCIA.
INSTALL RADIANT BARRIER MATERIAL IN ATTIC AT RAFTERS

SUBMITTALS

- A. ROOF SHEATHING PANEL.
 - 1. PRODUCT DATA
 - 2. INSTALLATION INSTRUCTIONS
- B. METAL CLIP TIES
 - 1. PRODUCT DATA
- C. RADIANT BARRIER MATERIAL
 - 1. PRODUCT DATA
 - 2. INSTALLATION INSTRUCTIONS

PRODUCTS

- A. ROOF SHEATHING PANELS: 15/32" PLYWOOD,
 - a. PROVIDE DEFORMED SHANK OR RING SHANK FASTENERS SUITABLE FOR THE INSTALLATION FOR A WORKMANLIKE INSTALLATION INCLUDING NAILS, OR SCREWS.
- B. METAL CLIP TIES: SIMPSON STRONG TIES
- C. WOOD FRAMING & TRIM: PROVIDE MISC. FRAMING AND TRIM LUMBER SUITABLE FOR THE APPLICATION TO MATCH EXISTING CONDITION.
- D. FASTENERS: FASTENERS SHALL BE AS REQUIRED BY CODE, SUITABLE FOR THE APPLICATION AND AS RECOMMENDED BY THE MANUFACTURER. EXTERIOR FASTENERS SHALL BE GALVANIZED STEEL, ALUMINUM, OR STAINLESS STEEL.
- E. RADIANT SHEET MATERIAL: PROVIDE DOUBLE SIDE REFLECTIVE ALUMINUM WITH POLYETHYLENE WOVEN REINFORCEMENT – RadiantGUARD ULTIMA-FOIL.
 - i. THICKNESS: 6.5 mils
 - ii. WEIGHT: 28 LBS/ 1000 SF
 - iii. FLAMESPREAD: 0; SMOKE DEVELOPMENT: 10; ASTM E84-10, ASTM E2599.
 - iv. PERMEABILITY: 8.5 PERMS ASTM 96-00
 - v. REFLECTIVITY: 97%; EMISSIVITY: 3%; ASTM C1371-98

EXECUTION

CARPENTRY SHALL BE INSTALLED IN A WORKMANLIKE MANNER. NAILS SHALL NOT BE OVERDRIVEN THROUGH THE SHEATHING. LUMBER REQUIRING REPLACEMENT SHALL BE REPLACED IN LIKE KIND.

- A. ROOF SHEATHING: ROOF SHEATHING SHALL BE INSTALLED IN ACCORDANCE WITH THE BUILDING CODE AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. USE RING SHANK OR DEFORMED NAILS. 4X8 ROOF SHEATHING PANELS SHALL BE INSTALLED PERPENDICULAR TO THE FRAMING. END EDGES OF PANELS SHALL LIE AT RAFTER LOCATION AND HAVE A MINIMUM OF 1/2" BEARING. LEAVE 1/8' GAP BETWEEN SHEATHING PANELS. METAL CLIP TIES: INSTALL METAL FRAMING CLIPS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. RADIANT BARRIER MATERIAL: INSTALL IN STRICT ACCORDANCE WITH CODE AND MANUFACTURERS INSTRUCTIONS. PROVIDE FASTENERS AND INSTALL AS RECOMMENDED BY THE MANUFACTURER.

END OF SECTION

SECTION 073113 – ASPHALT SHINGLE ROOFING

SCOPE

DEMOLISH EXISTING ROOFING SYSTEM AND COMPONENTS.
PROVIDE COMPLETE NEW ASPHALT SHINGLE ROOFING SYSTEM INCLUDING ICE & WATER BARRIERS, STARTER STRIP, UNDERLAYMENT, ROOF SHINGLES, ATTIC RIDGE VENTS, AND RIDGE CAP SHINGLES, FLASHINGS, METAL DRIP EDGE, ROOF PENETRATION FLASHING & MISC. ITEMS TO PROVIDE A COMPLETE WATERTIGHT ROOFING SYSTEM.

PROTECT EXISTING HOME FROM ADVERSE WEATHER CONDITIONS FOR THE DURATION OF THE CONSTRUCTION.

PROTECT THE INTERIOR OF THE HOUSE FROM DUST AND DEBRIS FROM CONSTRUCTION ACTIVITIES.

THE SCOPE OF THIS WORK INCLUDES THE IBC-2009, CONNECTICUT STATE BUILDING CODE.

WARRANTEE: GAF ALL AMERICAN PLEDGE GUARANTEE. LIFETIME WARRANTEE
MANUFACTURING: 50 YEARS NON-PRORATED, 20% THEREAFTER
WORKMANSHIP: 100% WORKMANSHIP

SUBMITTALS

- A. ROOF SYSTEM SUBMITT FOR ALL ELEMENTS OF THE ROOF SYSTEM
 - 1. PRODUCT DATA
 - 2. INSTALLATION INSTRUCTIONS
 - 3. COLOR SAMPLES
 - 4. WARRANTEE
- B. FLASHINGS
 - 1. PRODUCT DATA
- C. GUTTERS
 - 1. PRODUCT DATA

PRODUCTS

- A. ROOF SYSTEM: PROVIDE NEW ROOF SYSTEM WITH ALL COMPONENTS BY ONE MANUFACTURER. ALL COMPONENTS OF ROOF SYSTEM SHALL BE COMPATIBLE AND MEET THE REQUIREMENTS

STATED HEREIN. ROOF SYSTEM SHALL BE CAPABLE OF WITHSTANDING 110 MILE 3 SECOND WIND SPEED.

1. MANUFACURER; GAF
 2. SYSTEM: LIFETIME ROOFING SYSTEM
 3. SHINGLES: TIMBERLINE COOL SERIES WITH STAINGUARD
 4. CAP SHINGLES: TIMBERTEX PREMIUM RIDGE SHINGLE
 5. UNDERLAYMENT: DECK ARMOR DECK PROTECTION
 6. ICE & WATER BARRIER: WEATHER WATCH STORM GUARD ICE & WATER SHEILD
 7. ATTIC RIDGE VENT: COBRA ATTIC VENTILATION
 8. FASTENERS: FASTENERS SHALL BE AS RECOMMENDED BY MANUFACTURER AND REQUIRED BY CODE
 9. ROOFING CEMENT: ASPHALTIC PLASTIC ROOFING CEMENT MEETING THE REQUIREMENTS OF ASTM D 4586, TYPE I OR TYPE II.
 10. NAILS: STANDARD ROUND WIRE, ZINC-COATED STEEL OR ALUMINUM, SMOOTH BARBED OR DEFORMED SHANK, WITH HEADS 3/8'S INCH TO 7/16 INCH IN DIAMETER. LENGTH MUST BE SUFFICIENT TO PENETRATE INTO SOLID WOOD AT LEAST 3/4 INCHE OR THROUGH PLYWOOD SUBSTRATE AT LEAST 1/8 INCH.
- B. METAL FLASHINGS: PROVIDE ALUMINUM STEP AND TRIM FLASHING SHAPED FOR THE INTENDED PURPOSE.
1. 0.032-INCH ALUMINUM SHEET, COMPLYING WITH ASTM B 209
 2. PIPE PENETRATION FLASHING: PROVIDE PRE-MANUFACTURED METAL PIPE PENETRATION FLASHING AT ROOF PIPE PENETRATIONS WITH NEOPRENE SEAL.
 3. EXPOSED FINISH SHALL BE WHITE
- C. GUTTERS AND DOWNSPOUTS
1. PROVIDE NEW GUTTERS TO MATCH EXISTING GUTTERS INCLUDINE ALUMINUM GUTTER WITH FITTINGS, HANGERS, CORNERS AND APURTENANCES TO COMPLETE THE WORK.

EXECUTION

- A. ROOF REMOVAL SHALL NOT PROCEED UNTIL ALL PRODUCTS HAVE BEEN APPROVED AND ARE ON SITE READY FOR INSTALLATION.
- B. DELIVERY STORAGE AND HANDLING: ALL PRODUCTS SHALL BE RECEIVED NEW IN THEIR ORIGINAL UNOPENNED, LABELLED PACKAGING AND BE STORED UNOPENNED UNTIL READY FOR USE. BUNDLES SHALL BE STORED ON FLAT SURFACES.
- C. WEATHER CONDITIONS: DO NOT PROCEED WITH THE WORK UNTIL EXISTING AND FORCASTED WEATHER CONDITIONS WILL PERMIT WORK TO BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
- D. EXAMINATION: DO NOT BEGIN INSTALLATION UNTIL ROOF DECK HAS BEEN PROPERLY PREPARED.
- E. REPLACE DAMAGED DECK MATERIALSWITH NEW MATERIALS.
- F. FILL KNOT HOLES AND CRACKS AT LOCATIONS TO RECEIVE ICE AND WATER SHEILD.
- G. UNDERLAYMENTS: INSTALL UNDERLAYMENTS USING METHODS RECOMMENDED BY THE MANUFACTURER IN ACCORDANCE WITH BUILDING CODE.
- H. EVES: INSTALL EAVES EDGE METAL FLASHING TIGHT WITH FASCIA BOARDS; LAP JOINTS 2 INCHES (51MM) AND SEAL WITH PLASTIC CEMENT OR HIGH QUALITY URETHANE SEALANT; NAIL AT THE TOP OF THE FLANGE
- I. HIPS AND RIDGES: INSTALL LEAK BARRIER ALONG ENTIRE LENGTHS. IF RIDGE VENTS ARE TO BE INSTALLED, POSITION THE LEAK BARRIER SO THAT THE RIDGE SLOTS WILL NOT BE COVERED
- J. DECK ARMOR:

- a. DECK ARMOR: DECK-ARMOR SHALL BE INSTALLED OVER A CLEAN, DRY DECK.
 - b. INSTALL WEATHER WATCH® OR STORMGUARD® LEAK BARRIER AT EAVES, VALLEYS, RAKES, SKYLIGHTS, DORMERS AND OTHER VULNERABLE LEAK AREAS.
 - c. LAY DECK-ARMOR™ OVER DECK AND OVERLAP 3" (76MM) AT SIDE LAPS AND 6" (152MM) AT END LAPS.
 - d. FOR EXPOSURE TO RAIN OR SNOW, OVERLAP 12" (305MM) AT END LAPS.
 - e. FOR SIDE AND END LAPS: FASTEN DECK-ARMOR 12" (305MM) O.C. (6" (152MM) O.C. FOR HIGH WIND AREAS).
 - f. FOR MIDDLE OF THE ROLL: FASTEN DECK-ARMOR 24" (610MM) O.C. (12" (305MM) O.C. FOR HIGH WIND AREAS).
 - g. FOR SLOPES LESS THAT 2:12, A DOUBLE APPLICATION OF DECK-ARMOR IS REQUIRED. SEE COMPLETE DECK-ARMOR INSTALLATION INSTRUCTIONS FOR MORE INFORMATION.
- K. PENETRATIONS:
- a. VENT PIPES: INSTALL A 24 INCH (610 MM) SQUARE PIECE OF EAVES PROTECTION MEMBRANE LAPPING OVER ROOF DECK UNDERLAYMENT; SEAL TIGHTLY TO PIPE.
 - b. VERTICAL WALLS: INSTALL EAVES PROTECTION MEMBRANE EXTENDING AT LEAST 6 INCHES (152MM) UP THE WALL AND 12 INCHES (305MM) ON TO THE ROOF SURFACE. LAP THE MEMBRANE OVER THE ROOF DECK UNDERLAYMENT.
 - c. CHIMNEYS: INSTALL EAVES PROTECTION MEMBRANE AROUND ENTIRE CHIMNEY EXTENDING AT LEAST 6 INCHES (152MM) UP THE WALL AND 12 INCHES (305MM) ON TO THE ROOF SURFACE. LAP THE MEMBRANE OVER THE ROOF DECK UNDERLAYMENT.
 - d. RAKE EDGES: INSTALL METAL EDGE FLASHING OVER EAVES PROTECTION MEMBRANE AND ROOF DECK UNDERLAYMENT; SET TIGHT TO RAKE BOARDS; LAP JOINTS AT LEAST 2 INCHES (51MM) AND SEAL WITH PLASTIC CEMENT; SECURE WITH NAILS.
- L. INSTALLATION OF STARTER SHINGLES
- 1. PLACEMENT AND NAILING:
 - a. INSTALL STARTER STRIP TO UNDERLAYMENT AND EACH OTHER IN A 4" (102MM) WIDTH OF ASPHALT PLASTIC ROOF CEMENT.
 - b. PLACE STARTER STRIP SHINGLES 1/4" – 3/4" (6 – 19MM) OVER EAVE AND RAKE EDGES TO PROVIDE DRIP EDGE.
 - c. NAIL APPROXIMATELY 1-1/2" – 3" (38 – 76MM) ABOVE THE BUTT EDGE OF THE SHINGLE.
 - d. RAKE STARTER COURSE SHOULD OVERLAP EAVE EDGE STARTER STRIP AT LEAST 3" (76MM).
- M. INSTALLATION OF SHINGLES
- 1. GENERAL:
 - a. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND LOCAL BUILDING CODES. WHEN LOCAL CODES AND APPLICATION

INSTRUCTIONS ARE IN CONFLICT, THE MORE STRINGENT REQUIREMENTS SHALL TAKE PRECEDENCE.

- b. MINIMIZE BREAKAGE OF SHINGLES BY AVOIDING DROPPING BUNDLES ON EDGE, BY SEPARATING SHINGLES CAREFULLY (NOT BY "BREAKING" OVER RIDGE OR BUNDLES), AND BY TAKING EXTRA PRECAUTIONS IN TEMPERATURES BELOW 40 DEGREES F (4 DEGREES C).
 - c. HANDLE CAREFULLY IN HOT WEATHER TO AVOID SCUFFING THE SURFACING, OR DAMAGING THE SHINGLE EDGES.
2. PLACEMENT AND NAILING: SECURE WITH 6 NAILS PER SHINGLE PER GAF®'S APPLICATION INSTRUCTIONS OR LOCAL CODES.
- a. PLACEMENT OF NAILS VARIES BASED ON THE TYPE OF SHINGLE SPECIFIED. CONSULT THE APPLICATION INSTRUCTIONS FOR THE SPECIFIED SHINGLE FOR DETAILS.
 - b. NAILS MUST BE DRIVEN FLUSH WITH THE SHINGLE SURFACE. DO NOT OVERDRIVE OR UNDER DRIVE THE NAILS.
 - c. SHINGLE OFFSET VARIES BASED ON THE TYPE OF SHINGLE SPECIFIED. CONSULT THE APPLICATION INSTRUCTIONS FOR THE SPECIFIED SHINGLE FOR DETAILS.
 - d. PLACEMENT AND NAILING: BEGINNING WITH THE STARTER STRIP, TRIM SHINGLES SO THAT THEY "NEST" WITHIN THE SHINGLE LOCATED BENEATH IT. THIS PROCEDURE WILL YIELD A FIRST COURSE THAT IS TYPICALLY 3 INCH (76MM) TO 4 INCH (102MM) RATHER THAN A FULLY EXPOSED SHINGLE.
 - e. LATERALLY, OFFSET THE NEW SHINGLES FROM THE EXISTING KEYWAYS, TO AVOID WAVES OR DEPRESSIONS CAUSED BY EXCESSIVE DIPS IN THE ROOFING MATERIALS.
 - f. USING THE BOTTOM OF THE TAB ON EXISTING SHINGLES, ALIGN SUBSEQUENT COURSES.
 - g. NAILS MUST BE DRIVEN FLUSH WITH THE SHINGLE SURFACE. DO NOT OVERDRIVE OR UNDER DRIVE THE NAILS.
3. VALLEYS INSTALL VALLEYS USING "WOVEN VALLEY" METHOD: RUN SHINGLES FROM BOTH ROOF SLOPES AT LEAST 12 INCHES (305MM) ACROSS CENTER OF VALLEY, LAPPING ALTERNATE SIDES IN A WOVEN PATTERN.
- a. DO NOT NAIL LESS THAN 6 INCHES (152MM) FROM THE VALLEY CENTER LINE.

N. PENETRATIONS

1. ALL PENETRATIONS ARE TO BE FLASHED ACCORDING TO MANUFACTURER'S, ARMA AND NRCA APPLICATION INSTRUCTIONS AND CONSTRUCTION DETAILS.

O. INSTALLATION OF ATTIC VENTILATION

1. INSTALL RIDGE VENT ALONG THE ENTIRE LENGTH OF RIDGES:
2. CUT CONTINUOUS VENT SLOTS THROUGH THE SHEATHING, STOPPING 6 INCHES (152MM) FROM EACH END OF THE RIDGE.
3. ON ROOFS WITHOUT RIDGE BOARD, MAKE A SLOT 1 INCH (25MM) WIDE, ON EITHER SIDE OF THE PEAK (2 INCH (51MM) OVERALL).
4. ON ROOFS WITH RIDGE BOARD, MAKE TWO SLOTS 1-3/4 INCHES (44.5MM) WIDE, ONE ON EACH SIDE OF THE PEAK (3 ½ INCH (89MM) OVERALL).
5. INSTALL RIDGE VENT MATERIAL ALONG THE FULL LENGTH OF THE RIDGE, INCLUDING UNCUT AREAS.
6. BUTT ENDS OF RIDGE VENT MATERIAL AND JOIN USING ROOFING CEMENT.
7. INSTALL EAVES VENTS IN SUFFICIENT QUANTITY TO EQUAL OR EXCEED THE RIDGE VENT AREA.

P. PROTECTION

1. PROTECT INSTALLED PRODUCTS FROM FOOT TRAFFIC UNTIL COMPLETION OF THE PROJECT.
2. ANY ROOF AREAS THAT ARE NOT COMPLETED BY THE END OF THE WORKDAY ARE TO BE PROTECTED FROM MOISTURE AND CONTAMINANTS.

END OF SECTION

SECTION 079200 – JOINT SEALANTS

SCOPE

PROVIDE JOINT SEALANT FOR THE EXECUTION AND COMPLETION OF THE WORK AS REQUIRED BY INSTALLATION INSTRUCTIONS, CODE, OR OTHER SECTIONS OF THE SPECIFICATIONS AND CONTRACT DOCUMENTS

PRODUCTS

LOW VOC/NO VOC: SEALANTS USED ON THIS PROJECT SHALL BE LOW VOC/NO VOC SEALANTS CONTAINING A MINIMUM OF VOLATILE ORGANIC COMPOUNDS.

SEALANTS SHALL COMPLY WITH **REGULATION 8, RULE 51 OF THE BAY AREA QUALITY MANAGEMENT DISTRICT.**

SEALANTS SHALL BE SELECTED SUITABLE FOR THEIR APPLICATION. USE MOLD RESISTANT SEALANTS IN KITCHEN APPLICATIONS. SEALANTS INSTALLED RELATED TO FINISHED APPLICATIONS TO RECEIVE PAINT SHALL BE PAINTABLE SEALANT.

EXECUTION

INSTALL SEALANTS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. AREA TO RECEIVE SEALANTS SHALL BE CLEANED AND FREE OF LOOSE DUST OR DEBRIS THAT MAY COMPROMISE THE PURPOSE OF THE SEALANT OR PROVIDE AN INADEQUATE FINISH.

END OF SECTION

SECTION 099123 – INTERIOR CEMENT WALL REPAIR & PAINTING

GENERAL

REPAINT EXISTING WALL AND EXISTING MISC. PAINTED ITEMS AT WALL TO BE REPAIRED. PREPARE WALL FOR PAINTING AND PAINT WALL DAMAGED BY WATER AT LOCATIONS INDICATED. PROVIDE CEMENTITIOUS PATCHING COMPOUNDS TO SKIM-COAT WALL.

SUBMITTALS

SUBMIT COLOR CHARTS FOR OWNER SELECTION OF PAINT COLORS

FIELD CONDITIONS

DO NOT APPLY PAINT WHEN RELATIVE HUMIDITY EXCEEDS 85%, AT TEMPERATURES LESS THAN 5 DEG. F ABOVE THE DEW POINT, OR TO DAMP OR WET SURFACES.

PRODUCTS

PAINTS:

DESIGN BASED PRODUCTS:

BASE COAT & TOP COAT: BEHR BASEMENT & MASONRY WATERPROOFER NO. 875.

OTHER MANUFACTURERS: PROVIDE MANUFACTURERS INFORMATION FOR USE OF ALTERNATE COATING SYSTEM COMPLYING WITH THE REQUIREMENTS OF THIS SPECIFICATION AS MANUFACTURED BY:

BENJAMIN MOORE
CALIFORNIA PAINTS
GLIDDEN PROFESSIONAL
KELLY-MOORE PAINT COMPANY
M.A.B. PAINTS
PPG ARCHITECTURAL FINISHES
SHERWIN-WILLIAMS COMPANY
VALSPAR
ZINSSER

MATERIAL COMPATIBILITY

2. MATERIALS FOR USE WITHIN EACH PAINT SYSTEM SHALL BE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
3. FOR EACH COAT IN A PAINT SYSTEM, PRODUCTS SHALL BE RECOMMENDED IN WRITING BY TOPCOAT MANUFACTURERS FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED.

VOC CONTENT

PROVIDE PAINTS HAVING VOC CONTENT NO GREATER THAN THE FOLLOWING:

FLAT PAINTS AND COATINGS: 50 G/L.
NONFLAT PAINTS AND COATINGS: 50 G/L.
PRIMERS, SEALERS, AND UNDERCOATERS: 50 G/L.
FLOOR COATINGS: 100 G/L.

CEMENTITIOUS PATCHING COMPOUND:

PROVIDE CEMENTITIOUS PATCHING COMPOUNDS AND REPAIR MATERIAL SPECIFICALLY MANUFACTURED FOR FILLING CEMENTITIOUS SUBSTRATES AND PARGING WALLS.

EXECUTION

EXAMINATION

EXAMINE SUBSTRATES AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS.

VERIFY SUITABILITY OF SUBSTRATES, INCLUDING SURFACE CONDITIONS AND COMPATIBILITY, WITH EXISTING FINISHES AND PRIMERS.

PROCEED WITH COATING APPLICATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

APPLICATION OF COATING INDICATES ACCEPTANCE OF SURFACES AND CONDITIONS.

PREPARATION

COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.

PROTECT ADJACENT MATERIALS FROM DAMAGE FROM WORK ACTIVITIES.

CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINTS, INCLUDING DUST, DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS AND ENCAPSULANTS. REMOVE ALL LOOSE MATERIAL. WIRE BRUSH SUBSTRATE LEAVING ONLY MATERIAL THAT IS FAST TO THE WALL. WASH OFF LOOSE DUST, LYME, OR EFFLORESCENCE.

PROVIDE CEMENT PLASTER SKIM COAT COMPATIBLE WITH PAINT SYSTEM TO SURFACE OF WALL. PROVIDE VERTICALLY AND HORIZONTALLY SMOOTH FINISH COMPATIBLE WITH ADJACENT WALL SURFACE.

APPLICATION

APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND TO RECOMMENDATIONS.

USE APPLICATORS AND TECHNIQUES SUITED FOR PAINT AND SUBSTRATE INDICATED APPLY WITH BRUSH OR ROLLERS TO MAXIMIZE CONTACT WITH SUBSTRATE PAINT SURFACES BEHIND MOVABLE EQUIPMENT AND FURNITURE SAME AS SIMILAR EXPOSED SURFACES.

DO NOT PAINT OVER LABELS OF INDEPENDENT TESTING AGENCIES OR EQUIPMENT NAME, IDENTIFICATION, PERFORMANCE RATING, OR NOMENCLATURE PLATES.

IF UNDERCOATS OR OTHER CONDITIONS SHOW THROUGH TOPCOAT, APPLY ADDITIONAL COATS UNTIL CURED FILM HAS A UNIFORM PAINT FINISH, COLOR, AND APPEARANCE.

APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.

CLEANING AND PROTECTION

AT END OF EACH WORKDAY, REMOVE RUBBISH, EMPTY CANS, RAGS, AND OTHER DISCARDED MATERIALS FROM PROJECT SITE.

AFTER COMPLETING PAINT APPLICATION, CLEAN SPATTERED SURFACES. REMOVE SPATTERED PAINTS BY WASHING, SCRAPING, OR OTHER METHODS. DO NOT SCRATCH OR DAMAGE ADJACENT FINISHED SURFACES.

INTERIOR PAINTING SCHEDULE

PT-I BASEMENT WALL:

1 BASE COAT, 1 COAT INTERMEDIATE, 1 COAT TOPCOAT

COLORS: COLORS SHALL BE MATCHED TO EXISTING WALL COLOR.

END OF SPECIFICATIONS

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8/11/2014

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page 1 of 10**

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Attachments:

Appendix A: XRF Lead-Based Paint Testing Results with quality evaluation sheet, 7 pages
Appendix B: Dust Wipe and Soil Sample Analytical Data and Chain of Custody Document, 7 pages
Appendix C: Sample Location Drawings, 3 pages
Appendix D: Site Drawings, 3 pages
Appendix E: Copy of Risk Assessor's License/Certification, 2 pages
Appendix F: Copy of Firm's Lead Activity License/Certification, 3 pages
Appendix G: Copy of XRF Training Certificate and LPA-1 Performance Characteristics Sheet, 5 pages
Appendix H: "LEAD SPEAK" – A Brief Glossary, 2 pages
Appendix I: Additional Lead and Lead Safety Resource Data, 1 page

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**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page 2 of 10**

INTRODUCTION

EXECUTIVE SUMMARY: As a result of the Lead Hazard Risk Assessment and the limited Lead-Based Paint Testing (Assessment) conducted on 4/25/2014 and 8/6/2014, it was found that lead-based surface coatings (paint) and lead hazards were not present on the subject property as of the date of the Assessment. Lead (as defined by OSHA regulations 29 CFR 1926.62) and Lead Based Paint (as defined by USC Title 15 – Chapter 53- Toxic Substance Control) **was NOT detected** on surfaces and/or components within the scope of the inspection, the subject renovation project is not subject to hazardous waste evaluation requirements. In addition soil and dust testing results were within established standards.

BUILDING DESCRIPTION: The subject building is a single-family, two-story house, with an attic and basement totaling approximately 1900 sq ft, which was built in 1906 of wood-frame construction. Heat is supplied from a boiler in the basement. At the time of our screening, there were no children under the age of six residing at this subject house and the house was not being used as a daycare facility.

BACKGROUND: We understand the subject house suffered damage as a result of hurricane Sandy on October 29-30, 2012. The house is scheduled to be renovated. We understand a tree limb cause damaged to a basement window, and the paint on the concrete wall below that window. We understand the homeowner fixed the broken window, but the wall below it still needs to be re-painted. We understand the upper roof suffered damage and is scheduled to be replaced.

SCOPE OF OUR WORK: Our work would include the following:

- A Lead Hazard Risk Assessment
- XRF Screening of Lead Based Paint of representative painted surfaces on the 1st floor as directed by our client.
- A hazardous waste evaluation.
- A report of the findings with site drawings.

Lead paint chip and TCLP sampling are not in our scope of work.

This investigation and information provided in this report depends partly on background information provided by the client. This report is intended for the use of the client. The scope of services performed may not be appropriate for other users and any use of this report by third parties is at their sole risk. This report is intended to be used in its entirety. No excerpts may be taken to be representative of this report.

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
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SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page 3 of 10**

INTRODUCTION (cont)

QUALIFICATIONS: The Inspection was conducted by Daniel P. Sullivan, CT DPH Certified DPH Lead Inspector/Risk Assessor #002131, Radiation Safety Training, RMD 12/2/94. Dan was assisted by Ziyang Wang. Chem Scope's DPH lead license # is CC000164.

METHOD OF TESTING: Spectrum Analyzer XRF (x-ray fluorescence). Instrument used: RMD LPA-1, Serial # 1647 in Quick Mode. The unit source (Cobalt 57) for unit 1647 was replaced November 2nd, 2012. The XRF detects paint in all layers down to the painted substrate. In other words if lead paint is painted over with new paint, the lead paint is still detected by this procedure. When paint is covered with metal or plastic trim such as siding or by carpet, the lead paint is usually not detectable. This instrument is registered with the State of Connecticut Dept of Energy and Environmental Protection and is Generally Licensed under the NRC. This is one of the two methods, which are approved under the CT Dept of Public Health (DPH) regulations. This is a non-destructive test.

The dust and soil samples were sent for analysis to Eastern Analytical Services (EAS), an AIHA accredited Laboratory and a CT DPH approved Environmental Laboratory in regards to this test, using Atomic Absorption analysis.

TEST PARAMETERS FOR XRF TESTING USING THIS INSTRUMENT: OSHA 1926.62

Definition: Lead means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds. XRF readings of 1.0 mg/cm² or higher are lead based paint as defined by USC Title 15 – Chapter 53- Toxic Substance Control and XRF reading with any detectable amount of lead detected are defined as Lead by OSHA standard 1926.62.

XRF CALIBRATION CHECK: Standard Reference Material (SRM) paint film nearest to 1.0 mg/cm² within the National Institute of Standards and Technology (NIST) SRM is used to Calibrate the XRF. Calibration Readings are taken at the beginning and end of a job and every four (4) hours during the job with three (3) readings per set. The expiration date of the standard used is 7/1/20.

QUALITY CONTROL PROCEDURES: The XRF is used in accordance with Manufacturer's Performance Characteristics Sheet and instructions. See test data attached for details. Ten (or if <10, then the total number of tests conducted) testing combinations for re-testing from each unit are selected and checked in either 15 second or 60 second readings.

STATEMENT ON ACCURACY: The XRF Calibration checks were acceptable with each of the three (3) readings before, during (if applicable) and after the testing between 0.7 mg/cm² and 1.3 mg/cm². See attached XRF data sheets for documentation of proper calibration check sequence.

REPORT CONVENTIONS: Rooms are sometimes given arbitrary numbers to avoid ambiguity. Please refer to the enclosed schematic drawings of the site. Samples are referenced by the side of the building they are facing, as indicated on the drawings. Side A is the street side (front), Side B is the left side, Side C is the rear and Side D is the right side.

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
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INTRODUCTION (cont)

ONGOING MONITORING: Ongoing monitoring is necessary in all dwellings in which LBP is known or presumed to be present. At these dwellings, the very real potential exists for LBP hazards to develop. Hazards can develop by means such as, but not limited to: the failure of lead hazard control measures; previously intact LBP becoming deteriorated; dangerous levels of lead-in-dust (dust lead) re-accumulating through friction, impact, and deterioration of paint; or, through the introduction of contaminated exterior dust and soil into the interior of the structure. Ongoing monitoring typically includes two different activities: re-evaluation and annual visual assessments. A re-evaluation is a risk assessment that includes limited soil and dust sampling and a visual evaluation of paint films and any existing lead hazard controls. Re-evaluations are supplemented with visual assessments by the Client, which should be conducted at least once a year, when the Client or its management agent (if the housing is rented in the future) receives complaints from residents about deteriorated paint or other potential lead hazards, when the residence (or if, in the future, the house will have more than one dwelling unit, any unit that turns over or becomes vacant), or when significant damage occurs that could affect the integrity of hazard control treatments (e.g., flooding, vandalism, fire). The visual assessment should cover the dwelling unit (if, in the future, the housing will have more than one dwelling unit, each unit and each common area used by residents), exterior painted surfaces, and ground cover (if control of soil-lead hazards is required or recommended). Visual assessments should confirm that all Paint with known or suspected LBP is not deteriorating, that lead hazard control methods have not failed, and that structural problems do not threaten the integrity of any remaining known, presumed or suspected LBP.

The visual assessments do not replace the need for professional re-evaluations by a certified risk assessor. The re-evaluation should include:

1. A review of prior reports to determine where lead-based paint and lead-based paint hazards have been found, what controls were done, and when these findings and controls happened;
2. A visual assessment to identify deteriorated paint, failures of previous hazard controls, visible dust and debris, and bare soil;
3. Environmental testing for lead in dust, newly deteriorated paint, and newly bare soil; and
4. A report describing the findings of the reevaluation, including the location of any lead-based paint hazards, the location of any failures of previous hazard controls, and, as needed, acceptable options for the control of hazards, the repair of previous controls, and modification of monitoring and maintenance practices.

The first reevaluation should be conducted no later than two years after completion of hazard controls, or, if specific controls or treatments are not conducted, two years from the beginning of ongoing lead-based paint monitoring and maintenance activities. Subsequent reevaluations should be conducted at intervals of two years, plus or minus 60 days. If two consecutive reevaluations are conducted two years apart without finding a lead-based paint hazard, reevaluation may be discontinued.

Please refer to your community development agency, housing authority, or other applicable agency for additional local/regional regulations and guidelines governing re-evaluation activities.

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page 5 of 10**

INTRODUCTION (cont)

DISCLOSURE REGULATIONS: A copy of this complete report must be made available to new lessees (tenants) and/or must be provided to purchasers of this property under Federal law before they become obligated under any future lease or sales contract transactions (Section 1018 of Title X – found in 24 CFR Part 35 and 40 CFR Part 745), until the demolition of this property. Landlords (Lessors) and/or sellers are also required to distribute an educational pamphlet developed by the EPA entitled “*Protect Your Family From Lead in Your Home*” and include standard warning language in their leases or sales contracts to ensure that parents have the information they need to protect their children from LBP hazards.

FUTURE REMODELING PRECAUTIONS: It should be noted that during this Assessment, a limited number of areas were tested for the presence of LBP. All LBP, dust, and soil hazards that were identified are addressed in this report. However, LBP, dust lead hazards, and/ or soil lead hazards may be present at other locations of the property. Additional paint testing should precede any future remodeling activities that occur at any untested areas. Additional dust and/or soil sample collection and analysis should follow any hazard control activity, repair, remodeling, or renovation effort, and any other work efforts that may in any way disturb LBP and/or any lead containing materials. These Assessment activities will help the Client and owner to ensure the health and safety of the occupants and the neighborhood. Details concerning lead-safe work techniques and approved hazard control methods can be found in the HUD publication entitled: “*Guidelines for the Evaluation and Control of LBP Hazards in Housing*” (www.hud.gov/offices/lead). Remodeling, repair, renovation and painting at the residence beyond the scale of minor repair and maintenance activities must be conducted in accordance with the EPA’s Lead Repair, Renovation, and Painting Rule (within 40 CFR part 745); see the EPA’s website on the RRP Rule at <http://www.epa.gov/lead/pubs/renovation.htm> for the scope and requirements of that Rule. Lead-based paint abatement or lead-based paint hazard abatement at the residence must be conducted in accordance with the EPA’s Lead Abatement Rule (also within 40 CFR 745); see the EPA’s website for Lead Abatement Professionals at <http://www.epa.gov/lead/pubs/traincert.htm>.

CONDITIONS & LIMITATIONS: Staff of ChemScope Inc. has performed the tasks listed above requested by the our client in a thorough and professional manner consistent with commonly accepted standard industry practices, using state of the art practices and best available known technology, as of the date of the assessment. ChemScope cannot guarantee and does not warrant that this Assessment/Limited LBP Testing has identified all adverse environmental factors and/or conditions affecting the subject property on the date of the Assessment. ChemScope cannot and will not warrant that the Assessment/Limited Testing that was requested by the client will satisfy the dictates of, or provide a legal defense in connection with, any environmental laws or regulations. It is the responsibility of the client to know and abide by all applicable laws, regulations, and standards, including EPA’s Renovation, Repair and Painting regulation.

The results reported and conclusions reached by ChemScope are solely for the benefit of the client. The results and opinions in this report, based solely upon the conditions found on the property as of the date of the Assessment, will be valid only as of the date of the Assessment. ChemScope assumes no obligation to advise the client of any changes in any real or potential lead hazards at this residence that may or may not be later brought to our attention. Further conditions and limitations to this contracted report are included in the general terms and conditions supplied to the client with the contract for services.

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page 6 of 10**

INSPECTION REPORT SYNOPSIS

LOCATION NAME AND ADDRESS: Site 008 (DeLuca)
411 Blohm Street, West Haven, CT

INSPECTION DATE(S): 4/25/2014 and 8/6/2014.

XRF Testing Results:

Limited LBP Testing, conforming with HUD regulation 24 CFR 35.930(c), (d) was accomplished at this residence on surfaces found to have deteriorated paint and/or where it was indicated to the Assessor that planned renovation would occur. No paint chip samples were taken. On 4/25/2014 and 8/6/2014 a total of 44 tests (assays) were taken at a limited number of specified surfaces on the inside and outside of the residence using a x-ray fluorescence analyzer. Deteriorated paint and areas that were specified to be disturbed during the planned renovation project were tested.

Lead concentrations that meet or exceed the HUD published levels identified as being potentially dangerous [$> 1.0 \text{ mg/cm}^2$] were not encountered. Lead as defined by OSHA, DPH and EPA was not detected within scope of inspection.

OSHA 1926.62 Definition: Lead means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

XRF readings of 1.0 mg/cm^2 or higher are lead based paint as defined by USC Title 15 – Chapter 53- Toxic Substance Control and XRF reading with any detectable amount of lead detected are defined as Lead by OSHA standard 1926.62.

LIMITATIONS OF SCREENING: Not all painted surfaces were tested. Consequently, if a surface was not tested assume it contains Lead until proven otherwise. See attached data sheets for a list of surfaces tested.

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page 7 of 10**

INSPECTION REPORT SYNOPSIS (cont)

RESIDENT QUESTIONNAIRE: A resident questionnaire was completed as part of the Assessment, to help identify particular use patterns, which may be associated with potential LBP hazards, such as opening and closing windows painted with LBP. The answers to the questionnaire were obtained during a phone interview with the owner/occupant, Mr. DeLuca on 8/6/2014. Following is a summary of the information obtained during the interview:

Children in the Household:	None, and one (age 5) visit regularly
Children's bedroom locations:	2 nd Floor , Bedroom 3
Children's eating locations:	Kitchen
Primary interior play area(s):	Living Room
Primary exterior play area(s):	Backyard
Toy Storage:	N/A
Pets:	N/A
Children's blood lead testing history:	Unknown
Observed chewed surfaces:	None
Women of child bearing age:	No
Previous lead testing:	None
Most frequently used entrances:	Side C Backdoor, Side A front door used 2 nd most frequently
Most frequently opened windows:	All of them seasonally
Structure cooling method:	Window air conditioning units in Living Room and 3 Upstairs Bedrooms
Gardening – type and location(s):	Vegetable gardens Back yard
Plans for landscaping:	None
Cleaning regiment:	Daily
Cleaning methods:	Mopping, sweeping, dusting, vacuuming
Recently completed renovations:	None
Demolition debris on site:	N/A
Resident(s) with work lead exposure:	None
Planned renovations:	The scope of the renovation involves replacement of the roof.

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page 8 of 10**

INSPECTION REPORT SYNOPSIS (cont)

Building Conditions Survey

Date of Construction:	1906
Apparent Building Use:	Residential
Setting:	Residential
Front Entry Faces:	Side A, Faces South
Design:	2-Story, Conventional
Construction Type:	Wood framed
Lot Type:	Flat
Roof:	Major Storm Damage (currently has blue tar preventing water damage)
Foundation:	Concrete/Cinderblock
Front Lawn Condition:	No bare soil
Back Lawn Condition:	Approx. < 10% bare soil
Drip Line Condition:	Good – no paint chips seen
Site Evaluation:	Excellent
Exterior Structural Condition:	Exterior structural is good except for the damaged roof
Interior Structural Condition:	Excellent
Overall Building/Site Condition:	Excellent

PAINT CONDITION SURVEY

Please Note: EPA and HUD have provided a specific definition for the term “deteriorated paint.” Deteriorated paint is defined as “any interior or exterior paint or other coating that is peeling, chipping, chalking or cracking, or any paint or coating located on an interior or exterior surface or fixture that is otherwise damaged or separated from the substrate.” This definition is most typically associated with surface conditions only. Usage of this term in describing conditions other than those associated with surface coatings are not known to be defined by EPA or HUD.

Continued

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
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INSPECTION REPORT SYNOPSIS (cont)

Identified Deteriorated Paint, Paint Conditions, Lead Content, & Most Apparent Cause of Deterioration:

- None Detected

The remaining paint exhibited no apparent signs of deterioration, as of the date of the Assessment.

INTERIOR DUST SAMPLING:

A total of 11 single surface dust wipe samples were collected (and two blanks) in an effort to help to determine the levels of lead-containing dust on the interior window sills and floors. These samples were collected from areas most likely to be lead-contaminated if lead-in-dust is present. These samples were collected in accordance with the requirements of ASTM Standard E-1728, Standard Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques. EPA, HUD and State of Connecticut regulations define the following as hazardous levels for lead dust in residences: floors – ≥ 40 mg/ft² (micrograms per square foot); interior window sills – ≥ 250 mg/ft². There is no EPA dust-lead hazard standard for window troughs. Please refer to *Appendix B – Dust Wipe Analytical Results* for the laboratory reports and to *Appendix I – Lead and Lead Safety Information and Resources* for a list of publications and resources addressing lead hazards and their health effects; both are located at the end of this report.

All of the eleven dust samples collected were within acceptable levels. A summary list is given below, see attached analysis reports and drawings for details.

Sample #	Date	Location	Surface	Dust Wipe Result (ug/sq ft)	CT-DPH Standard (ug/sq ft)
183-77-1D	8/6/2014	1 st Flr Foyer, by Front Door	Floor	BDL <12.2	40
183-77-2D	8/6/2014	1 st Flr Kitchen, by Back Door	Floor	32.6	40
183-77-3D	8/6/2014	1 st Floor Living Rm	Floor	BDL <12.2	40
183-77-4D	8/6/2014	2 nd Flr BedRm 1	Floor	BDL <12.2	40
183-77-5D	8/6/2014	2 nd Flr BedRm 2	Floor	BDL <12.2	40
183-77-6D	8/6/2014	2 nd Flr BedRm 3	Floor	BDL <12.2	40
183-77-7D	8/6/2014	1 st Flr Kitchen, Side C	Window Sill	BDL <12.0	250
183-77-8D	8/6/2014	1 st Flr Living Rm, Side D	Window Sill	BDL <26.6	250
183-77-9D	8/6/2014	2 nd Flr BedRm 1, Side B	Window Sill	82.6	250
183-77-10D	8/6/2014	2 nd Flr BedRm 2, Side D	Window Sill	BDL <24.4	250
183-77-11D	8/6/2014	2 nd Flr BedRm 3, Side B	Window Sill	BDL <24.4	250
183-77-12D	8/6/2014	-	Blank	BDL <12.2	-
183-77-13D	8/6/2014	-	Blank	BDL <12.2	-

SOIL SAMPLING AND LABORATORY INFORMATION: Two (2) soil samples were collected at this residence in accordance with the requirements of ASTM Standard E-1727, Standard Practice for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques. None of the samples identified lead concentrations above the levels that EPA, HUD or CT-DPH identifies as hazardous. See the following table for a summary of the soil sampling results. Please refer to *Appendix C – Soil Sample Analytical Data* for the detailed analytical reports.

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 008 (DeLuca) – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION # 2140, CS#183-77, 4/25/2014 AND 8/6/2014, Page10 of 10**

INSPECTION REPORT SYNOPSIS (cont)

SOIL SAMPLING AND LABORATORY INFORMATION (cont):

Sample #	Date	Location	Surface	Soil Concentration (mg/kg)	CT-DPH Standard (mg/kg)
183-77-1S	8/6/2014	Garden – Side C – 2' from house, 2' from Side B	Soil 2" deep	351.1	400
183-77-2S	8/6/2014	Garden – Side B – 2' from house, 14' from side C	Soil 2" deep	79.1	400

HAZARDOUS WASTE EVALUATION

Lead (as defined by OSHA regulations 29 CFR 1926.62) and Lead Based Paint (as defined by USC Title 15 – Chapter 53- Toxic Substance Control) **was NOT detected** on surfaces and/or components within the scope of the inspection, the subject renovation project is not subject to hazardous waste evaluation requirements.

RECOMMENDATIONS

No further action is required at this time as Lead Based Paint was not detected within the scope of the inspection, no Lead Based Paint Hazards were identified and you are exempt from evaluating the construction waste as hazardous waste. However, please keep in mind, lead related work must be done according to applicable regulations (OSHA 1926.62 and USC Title 15 – Chapter 53- Toxic Substance Control) with properly trained personnel using proper work practices and procedures including proper disposal of hazardous lead waste (CT DEEP) and proper precautions to avoid contaminating the building and exposing those present to lead dust or fumes. Before cutting or welding and preparation work, any lead-based paint identified above should be handled with proper precautions to avoid contaminating adjacent areas and exposing those present to lead dust or fumes.

Please note that OSHA 29 CFR 1926.62 requires contractors working at the site must be notified of the location of the lead even if it is not to be disturbed so they make safely work around it.

See separate Asbestos Pre-renovation Inspection report and Mold Assessment report for additional details.

If you have any questions or need more information please call me. Thank you for calling on us.

Sincerely,



Dan Sullivan
Vice President, Operations

Appendix A XRF Lead-Based Paint Testing Results

ChemScope, Inc.

LEAD INSPECTION DATA FORM FOR XRF - COVER PAGE

XRF Data Form LI-1 (8/11)

Site Name: Site 008Date of Inspection: 4/25/2014Site Address: 411 Blohm Street, West Haven, CTCS# 183-77Customer Name: Diversified Technology Consultants (DTC)Customer Address: 2321 Whitney Avenue, Suite 301 / Hamden, CT 06518Work Area: Basement Wall B Page 1 of 2Site Description: Single-Family Residential Year of Construction: 1906Name of Individual Doing Testing: Don Sullivan CT DPH Lic# 2131CO-57 Date Source Installed: _____ Software version # N/A Serial # 1647

Test #	Clock Time	NIST Calibration Standard	Results QM (mg/CM2)
1	11 ⁰⁰ _{am}	NIST SRM 2573 Red	1.0
2	11 ⁰¹	NIST SRM 2573 Red	1.0
3	11 ⁰²	NIST SRM 2573 Red	1.0
11	11 ⁴²	NIST SRM 2573 Red	1.0
12	11 ⁴³	NIST SRM 2573 Red	1.0
13	11 ⁴⁴	NIST SRM 2573 Red	1.0
		NIST SRM 2573 Red	
		NIST SRM 2573 Red	
4	11 ⁰³	NIST SRM 2570 White (Blank)	-0.2
14	11 ⁴⁵	NIST SRM 2570 White (Blank)	-0.1

Note: each entry represents a single test on the surface indicated.

- Acceptance limits for calibration are 0.7-1.3.
- 1.0 mg/cm² or higher = lead based paint (LBP)
- All values run under Quick Mode (QM), unless noted otherwise under comments above.
- Calibration std SRM 2573 has 1.0 mg/cm² of lead, expiration of std is 7/1/20.
- DEF under comments means the surface has defective lead based paint

INSPECTOR SIGNATURE/Date/REVIEWED BY/Date: Don Sullivan, 4/25/14, [Signature], 18-12

EVALUATING THE QUALITY OF XRF:

Site Name: Site 008
 Site Address: 411 Blohm Street, West Haven, CT

CS# 183-77
 Date: 8/6/2014

Location	Original Reading	Retest Reading	Square of Original Reading	Square of Retest Reading
1. Interior - Kitchen - Door Frame - Side D	0.1	0.0	0.01	0.00
2. Interior - Foyer - Door - Side A	-0.3	-0.2	0.09	0.04
3. Interior - Foyer - Door Casing - Side A	0	-0.3	0.00	0.09
4. Interior - Foyer - Door Frame - Side A	-0.3	-0.3	0.09	0.09
5. Interior - Dining - Window Sill 2 - Side B	-0.1	-0.1	0.01	0.01
6. Interior - Dining - Baseboard - Side D	0	-0.1	0.00	0.01
7. Interior - Stair Stringer - Wall - Side C	-0.1	-0.3	0.01	0.09
8. Interior - 2nd Hall - Door 1 - Side A	-0.2	-0.3	0.04	0.09
9. Interior - 2nd Hall - Door 1 - Side C	-0.3	-0.3	0.09	0.09
10. Interior - Bedroom 4 - Baseboard - Side D1	-0.2	-0.3	0.04	0.09
Sum of ten squared averages ("C"):			0.38	0.60
"C" times 0.0072 ("D"):			0.002736	0.00432
"D" plus 0.032 ("E"):			0.034736	0.03632
Square root of "E" ("F"):			0.18638	0.190578068
"F" times 1.645 (Retest Tolerance Limit):			0.3066	0.3135
Average of the ten XRF Readings:			-0.14	-0.22
Absolute difference of the two averages:			0.0800	

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest.

Site Name: Site 008Date of Inspection: 8/6/2014Site Address: 411 Blohm Street, West Haven, CTCS# 183-77Customer Name: Diversified Technology Consultants (DTC)Customer Address: 2321 Whitney Avenue, Suite 301 / Hamden, CT 06518Work Area: Throughart Page 1 of 3Site Description: Single-Family Residential Year of Construction: 1906Name of Individual Doing Testing: Dan Sullivan CT DPH Lic# 002131CO-57 Date Source Installed: 11/2/2012 Software version # N/A Serial # 1647

Test #	Clock Time	NIST Calibration Standard	Results QM (mg/CM2)
1	12 ⁰⁸ pm	NIST SRM 2573 Red	1.0
2	12 ⁰⁹ pm	NIST SRM 2573 Red	1.0
3	12 ¹⁰ pm	NIST SRM 2573 Red	1.0
43	12 ⁵⁹ pm	NIST SRM 2573 Red	1.0
44	1 ⁰⁰ pm	NIST SRM 2573 Red	1.0
45	1 ⁰¹ pm	NIST SRM 2573 Red	1.0
		NIST SRM 2573 Red	
		NIST SRM 2573 Red	
4	12 ¹¹ pm	NIST SRM 2570 White (Blank)	-0.1
46	1 ⁰² pm	NIST SRM 2570 White (Blank)	-0.0

Note: each entry represents a single test on the surface indicated.

- Acceptance limits for calibration are 0.7-1.3.
- 1.0 mg/cm² or higher = lead based paint (LBP)
- All values run under Quick Mode (QM), unless noted otherwise under comments above.
- Calibration std SRM 2573 has 1.0 mg/cm² of lead, expiration of std is 7/1/20.
- DEF under comments means the surface has defective lead based paint

INSPECTOR SIGNATURE/Date/REVIEWED BY/Date: Dan Sullivan / 8/6/14 / Pa / 8-12-14

Site Name: Site 008

Date of Inspection: 8/6/2014

Site Address: 411 Blohm Street, West Haven, CT

CS#183-77

Work Area: Interior

Page 2 of 3

Test #/ Side	Int/Ext	Room #	Component	Defective (Y/N)	Color	Substrate	Results QM (mg/CM2)	LPB (Y/N)
5 A	Int	Kitchen	door frame	Y	white	wood	0.1	N
6 "	"	"	"	"	"	"	-0.0	N
7 A	"	Foyer	door	Y	Lt. grey	wood	-0.3	N
8 "	"	"	"	"	"	"	-0.2	N
9 "	"	"	door casing	Y	white	wood	0.0	N
10 "	"	"	"	"	"	"	-0.3	N
11 "	"	"	door frame	"	"	"	-0.3	N
12 "	"	"	"	"	"	"	-0.3	N
13 B	"	dinning	window sill	"	"	"	-0.1	N
14 "	"	"	"	"	"	"	-0.1	N
15 D	"	"	baseboard	"	"	"	-0.0	N
16 "	"	"	"	"	"	"	-0.1	N
17 C	"	Stair	Wall stringer	"	"	"	-0.1	N
18 "	"	"	"	"	"	"	-0.3	N
19 A	"	2nd hall	door	"	"	"	-0.2	N
20 "	"	"	"	"	"	"	-0.3	N
21 C	"	"	door	"	"	"	-0.3	N
22 "	"	"	"	"	"	"	-0.3	N
23 D ₁	"	bedroom 4	baseboard	"	"	"	-0.2	N
24 "	"	"	"	"	"	"	-0.3	N
25 C ₂	"	"	door casing	"	"	"	-0.1	N
26 A	"	bedroom 3	window sill	"	"	"	-0.4	N
27 "	"	"	window frame	"	"	"	-0.1	N
28 "	"	"	window casing	"	"	"	-0.1	N
29 B	"	"	" sill	"	"	"	-0.1	N
30 B	"	bedroom 2	door	"	"	"	-0.2	N
31 "	"	"	door frame	"	"	"	-0.3	N

Signature: [Signature]

Date: 8/6/14

EVALUATING THE QUALITY OF XRF:

Site Name: Site 008
 Site Address: 411 Blohm Street, West Haven, CT

CS# 183-77
 Date: 8/6/2014

Location	Original Reading	Retest Reading	Square of Original Reading	Square of Retest Reading
1. Interior - Kitchen - Door Frame - Side D	0.1	0.0	0.01	0.00
2. Interior - Foyer - Door - Side A	-0.3	-0.2	0.09	0.04
3. Interior - Foyer - Door Casing - Side A	0	-0.3	0.00	0.09
4. Interior - Foyer - Door Frame - Side A	-0.3	-0.3	0.09	0.09
5. Interior - Dining - Window Sill 2 - Side B	-0.1	-0.1	0.01	0.01
6. Interior - Dining - Baseboard - Side D	0	-0.1	0.00	0.01
7. Interior - Stair Stringer - Wall - Side C	-0.1	-0.3	0.01	0.09
8. Interior - 2nd Hall - Door 1 - Side A	-0.2	-0.3	0.04	0.09
9. Interior - 2nd Hall - Door 1 - Side C	-0.3	-0.3	0.09	0.09
10. Interior - Bedroom 4 - Baseboard - Side D1	-0.2	-0.3	0.04	0.09
Sum of ten squared averages ("C"):			0.38	0.60
	"C" times 0.0072 ("D"):		0.002736	0.00432
	"D" plus 0.032 ("E"):		0.034736	0.03632
	Square root of "E" ("F"):		0.18638	0.190578068
	"F" times 1.645 (Retest Tolerance Limit):		0.3066	0.3135
Average of the ten XRF Readings:			-0.14	-0.22
	Absolute difference of the two averages:		0.0800	

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest.

Appendix B Lead in Dust and Soil Sample Analysis Reports

ChemScope INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY

15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610

Diversified Technology Consultants
2321 Whitney Avenue, Suite 301
Hamden CT 06518

Application #2140
8/11/2014
CS# 183-77

LEAD ANALYSIS BY ATOMIC ABSORPTION

Lead dust wipe and soil samples from Site 008, 411 Blohm Street, West Haven CT, collected by ChemScope, Inc., on 8/6/2014:

See attached chain of custody and EAS Analytical Services, Inc., reports for sample descriptions and analytical data; and applicable standards on reverse side of this page.

*NOTE: The EAS Analytical Services, Inc. report provides the lead soil concentration in mg/kg which is equivalent to ppm (parts per million).

Suzanne Cristante or
Laboratory Director
SC

Izabela Kremens or
Quality Manager
IK


Ronald D. Arena
President
RDA

LEAD STANDARDS AND GUIDELINES

(Revised 4/2013)

The following are some existing known standards and guidelines as they relate to lab analysis for lead by AAS. ChemScope assumes no liability for the use of these data. All values are expressed as pure lead, Pb.

1. Lead in Dust Standards: Connecticut DPH, EPA & HUD:

Dust-Wipe Re-Occupancy Testing:

Floors: 40 micrograms/sq ft

Sills: 250 micrograms/sq ft

Window Wells: 400 micrograms/sq ft

Toxic Level of lead in dry paint: 0.5%

*NOTE: City of Stamford has a stricter standard of .06%

2. For Air Samples: OSHA PEL (Permissible Exposure Limit) is 50 micrograms/cubic meter and the AL (Action Level) is 30 micrograms/cubic meter.

3. For Soil: 400 PPM is considered contaminated.

State regulations (CT DEEP RCSA 22a-133K) require lead-contaminated soil to be cleaned up to a concentration of 500 ppm in residential areas and 1,000 ppm in industrial and commercial areas. But in practice the Department of [Energy and] Environmental Protection (DEEP) and state and local health departments apply a 400 ppm standard in residential areas. DEEP has begun the process of adopting the 400 ppm standard in regulation.

OLR Research Report, October 11, 2006, 2006-R-0596

4. For any material to be disposed of: the DEP and EPA Standard for TCLP lead is 5 milligrams/liter. In addition, other substances besides lead may need to be tested which are not in the scope of this test report.

5. Consumer Product Safety Commission: Lead in paint for sale 0.06%.

6. For Drinking Water Samples (First Draw and Fully Flushed samples):

State of Connecticut Action Level: 0.015 mg/l

EPA Action Level: 15 ppb

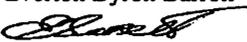
NOTE: .015 mg/l = 15 ppb



Eastern Analytical Services, Inc.

Wipe Sample Report

RE: CPN 183-77 - Diversified Technology Consultants (DTC) - Site 008 - 411 Blohm Street - West Haven, CT

Date Collected: 08/06/2014
 Collected By: Dan Sullivan
 Date Received: 08/07/2014
 Date Analyzed: 08/07/2014
 Analyzed By: Everton Byron Barrett
 Signature: 
 Analyte: Pb Dust
 Analytical Method: EPA 3050B/7000B
 NYS Lab Number: 10851

Client: Chem Scope, Inc.
 15 Moulthrop Street
 North Haven, CT 06473

Sample ID# / Lab ID#	Sample Location	Sample Notes	Concentration
183-77-1D 2305025	Foyer - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft ²
183-77-2D 2305026	Kitchen - Floor	Dust Wipe - 12" x 12" Area	32.6 µg/ft ²
183-77-3D 2305027	Living Room - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft ²
183-77-4D 2305028	Bedroom 1 - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft ²
183-77-5D 2305029	Bedroom 2 - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft ²
183-77-6D 2305030	Bedroom 3 - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft ²
183-77-7D 2305031	Kitchen - Window Sill	Dust Wipe - 7" x 21" Area	BDL < 12.0 µg/ft ²
183-77-8D 2305032	Living Room - Window Sill	Dust Wipe - 2" x 33" Area	BDL < 26.6 µg/ft ²
183-77-9D 2305033	Bedroom 1 - Window Sill	Dust Wipe - 3" x 24" Area	82.6 µg/ft ²

BDL = Below Detectable Limits Reporting Limit = 0.3 ppm
 Liability Limited to Cost of Analysis
 Results Applicable to Those Items Tested Results are Not Blank Corrected All QC within Control Limits Unless Otherwise Indicated
 AIHA Accreditation No. 100263 Rhode Island DOH No. AAL-072T3 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095



Eastern Analytical Services, Inc.

Wipe Sample Report

RE: CPN 183-77 - Diversified Technology Consultants (DTC) - Site 008 - 411 Blohm Street -
West Haven, CT

Date Collected: 08/06/2014
Collected By: Dan Sullivan
Date Received: 08/07/2014
Date Analyzed: 08/07/2014
Analyzed By: Everton Byron Barrett
Signature: 
Analyte: Pb Dust
Analytical Method: EPA 3050B/7000B
NYS Lab Number: 10851

Client: Chem Scope, Inc.
15 Moulthrop Street
North Haven, CT 06473

Sample ID# / Lab ID#	Sample Location	Sample Notes	Concentration
183-77-10D 2305034	Bedroom 2 - Window Sill	Dust Wipe - 3" x 24" Area	BDL < 24.4 µg/ft ²
183-77-11D 2305035	Bedroom 3 - Window Sill	Dust Wipe - 3" x 24" Area	BDL < 24.4 µg/ft ²
183-77-12D 2305036	Not Applicable	Field Blank	BDL < 12.2 µg
183-77-13D 2305037	Not Applicable	Field Blank	BDL < 12.2 µg

BDL = Below Detectable Limits Reporting Limit = 0.3 ppm
Liability Limited to Cost of Analysis
Results Applicable to Those Items Tested Results are Not Blank Corrected All QC within Control Limits Unless Otherwise Indicated
AIHA Accreditation No. 100263 Rhode Island DOH No. AAL-07273 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095



Eastern Analytical Services, Inc.

Bulk Sample Report

RE: CPN 183-77 - Diversified Technology Consultants (DTC) - Site 008 - 411 Blohm Street - West Haven, CT

Date Collected: 08/06/2014
Collected By: Dan Sullivan
Date Received: 08/07/2014
Date Analyzed: 08/07/2014
Analyzed By: Everton Byron Barrett
Signature: 
Analyte: Pb Bulk
Analytical Method: EPA 3050B/7000B
NYS Lab Number: 10851

Client: Chem Scope, Inc.
15 Moulthrop Street
North Haven, CT 06473

Sample ID# / Lab ID#	Sample Location	Sample Notes	Concentration
183-77-1S 2305011	Garden - Side C - 2' from House, 2' from Side B	Soil - 2" Deep Grab	351.1 mg/kg 0.04 %
183-77-2S 2305012	Garden - Side B - 2' from House, 14' from Side C	Soil - 2" Deep Grab	79.1 mg/kg 0.01 %

BDL = Below Detectable Limits Reporting Limit = 0.3 ppm

Liability Limited to Cost of Analysis

Results Applicable to Those Items Tested Results are Not Blank Corrected All QC within Control Limits Unless Otherwise Indicated Soil Samples Reported on Dry Weight Basis - Paint Samples Reported as Received

AIHA Accreditation No. 100263 Rhode Island DOH No. AAL-072T3 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095

PO# 1306

Chem Scope, Inc.
15 Moulthrop Street, North Haven CT 06473
203-865-5605

Form FL-4A Rev 11/12/13
(Issued By SC)

CHAIN OF CUSTODY

Emailed _____
Faxed _____
Called _____
Logged

Site 008

Sample Source: 411 Blohm Street, West Haven, CT

CS Job CS# 183-77

Sampled by: Don Au Date Sampled: 8/6/14 Customer Name: Diversified Technology Consultants (DTC) -

CS Sample#	Client Sample#	Sample Description	Comments
183-77-1D	Foyer	Floor 12"x12" on ceramic floor by door	1.0 sq ft
-2D	Kitchen	Floor 12"x12" on ceramic by door	1.0 sq ft
-3D	Living Room	Floor 12"x12" on ceramic	1.0 sq ft
-4D	Bedroom 1	Floor 12"x12" on ceramic tile	1.0 sq ft
-5D	Bedroom 2	Floor 12"x12" on hardwood	1.0 sq ft
-6D	Bedroom 3	Floor 12"x12" on hardwood	1.0 sq ft
-7D	Kitchen	Sill on white wood sill 7"x21"	1.0 sq ft
-8D	Living Rm	Sill on white wood sill 2"x33"	0.46 sq ft
-9D	Bedroom 1	Sill on white wood sill 3"x24"	0.46 sq ft
-10D	Bedroom 2	Sill on white wood sill 3"x24"	0.46 sq ft
-11D	Bedroom 3	Sill on white wood sill 3"x24"	0.46 sq ft
-12D	+	Blank	-
-13D	-	Blank	-
183-77-1S	Garden	Side C 2' from house, 2' from Side B	2" deep grab
-2S	Garden	Side B 2' from house, 14' from side C	2" deep grab

Lead in Dust (ug/ft²)
Lead in Soil (ppm)

Sample Turnaround: 48 hr

Analysis Requested (if variable, use comment column) Lead in Soil / Lead in Dust

Check if you want sample returned _____ (sampled will be disposed of after 30 days).

Relinquished by Don Au Date 8/6/14 Time 08:10/14 Received by _____
Relinquished by _____ Date _____ Time _____ Received by _____

Other Special Instructions: _____

Result Transmittal Instructions (for Chem Scope to transmit): _____

FOR CHEM SCOPE, INC. TO FILL OUT IF SAMPLES ARE GOING TO OUTSIDE LAB:

Name of Laboratory: EAS Method of Transportation to Laboratory: Fed Ex

Result Transmittal Instructions (for outside Lab to Chem Scope, Inc): PLEASE FAX RESULTS

The person submitting samples is responsible for obtaining true and representative samples, for complying with applicable regulations and for the use of the data obtained from the analysis. For example, many states have licensing and laboratory approval requirements. Please contact the individual states if you have any questions regarding specific sampling or approval requirements. For Connecticut sites, we have licensed inspectors available to collect client samples and to perform building inspections.

Dear Laboratory Customer or Potential Customer,

New laboratory accreditation standards require us to provide our clients information about our services to make sure that your requirements for testing are adequately defined, documented and understood. The following is for your information. Please call us if you have any questions or comments.

Type of Samples:

/ / PCM cassettes are routinely run by NIOSH Method 7400.

/ / Bulk materials are run by EPA Method: #600/R-93/116.

Air Samples: NIOSH 7400 Method counts all fibers. This method may be used for personal air samples and for finals. Two field blanks must be submitted for each set of samples. In the unlikely event that there is to be any deviation from the standard test, you will be consulted by phone before the work begins. Those clients who have not had NIOSH 582 or AHERA asbestos training courses (either supervisor or project monitor) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

Bulk materials: sampled are analyzed by the latest EPA Method: (#600/R-93/116) which uses polarized light microscopy (PLM). When asbestos is detected and the amount is estimated to be <10%, we automatically point count the samples. When there are interfering substances present, we may use ashing, acid washing or other procedures described in the method to handle the interference. Those clients who have not had AHERA asbestos training courses (either inspector, supervisor or project designer) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

All Samples must be clearly labeled with source name and identification number or sufficient information from the client to make this sample uniquely identified. (We will then add our notebook #, page # (batch) and unique number within the batch.) Samples must be in a clean, air tight package such as a zip loc bag. Appropriate completed paperwork must accompany the sample. Bulk and air samples may not be submitted in the same package.

As soon as available bench top results will be faxed to you and reports will then be mailed. We will retain air samples for at least three months and bulk samples for 6 months unless you advise us otherwise.

You are welcome to visit the laboratory at any time to discuss the work, monitor the work or verify our testing services. We appreciate your business and encourage any feedback regarding improving our services or our quality system. Please take a minute to complete the following survey and mail/fax it to ChemScope, Inc.

Customer Service Survey

To help us improve our services give your opinions to the following:

- 1- The printed laboratory report was complete and easy to understand. YES NO
If no, please explain _____.
- 2- The turn around time for results met your expectations/needs. YES NO
If no, please explain _____.
- 3- How likely are you to recommend ChemScope Inc. to someone?
 Excellent Very Good Good Fair Poor
- 4- How likely are you to return to ChemScope in the future if the need arises?
 Excellent Very Good Good Fair Poor
5. On a scale of 1 to 5 where 1 represents "Satisfied" and 5 represents "Dissatisfied", how would you rate your level of overall satisfaction.
 1 2 3 4 5
- 6- Please add any additional comments or suggestions that would be helpful when you use our services:

Name _____ Company _____
Address _____ Telephone/e-mail _____

Can we contact you regarding this survey? YES NO

Appendix C Sample Location Drawings

ChemScope Inc.

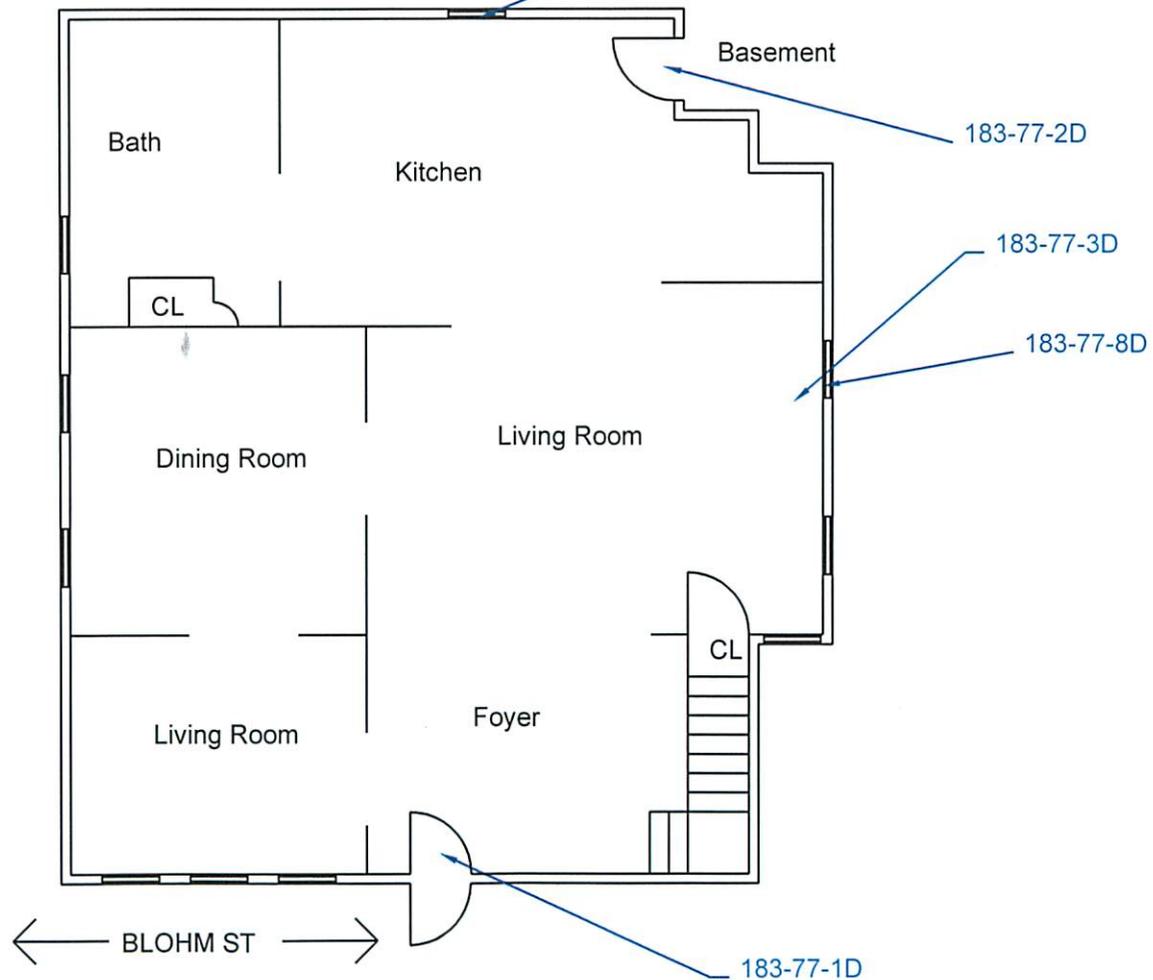
Site 008

411 Blohm Street, West Haven, CT

Main Level

CS# 183-77, 8/6/14

LEAD IN DUST SAMPLE LOCATION DRAWING 183-77-7D



LEGEND OF SYMBOLS

#D Lead in Dust Sample Location

NOTATIONS

DRAWN BY
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE
LEAD RISK ASSESSMENT
411 BLOHM ST
WEST HAVEN, CT
FIRST FLOOR

CHEMSCOPE NUMBER
CS# 183-77

DRAWING NUMBER

SCALE
NOT TO SCALE

1LD

DATE
8/6/14

ChemScope Inc.

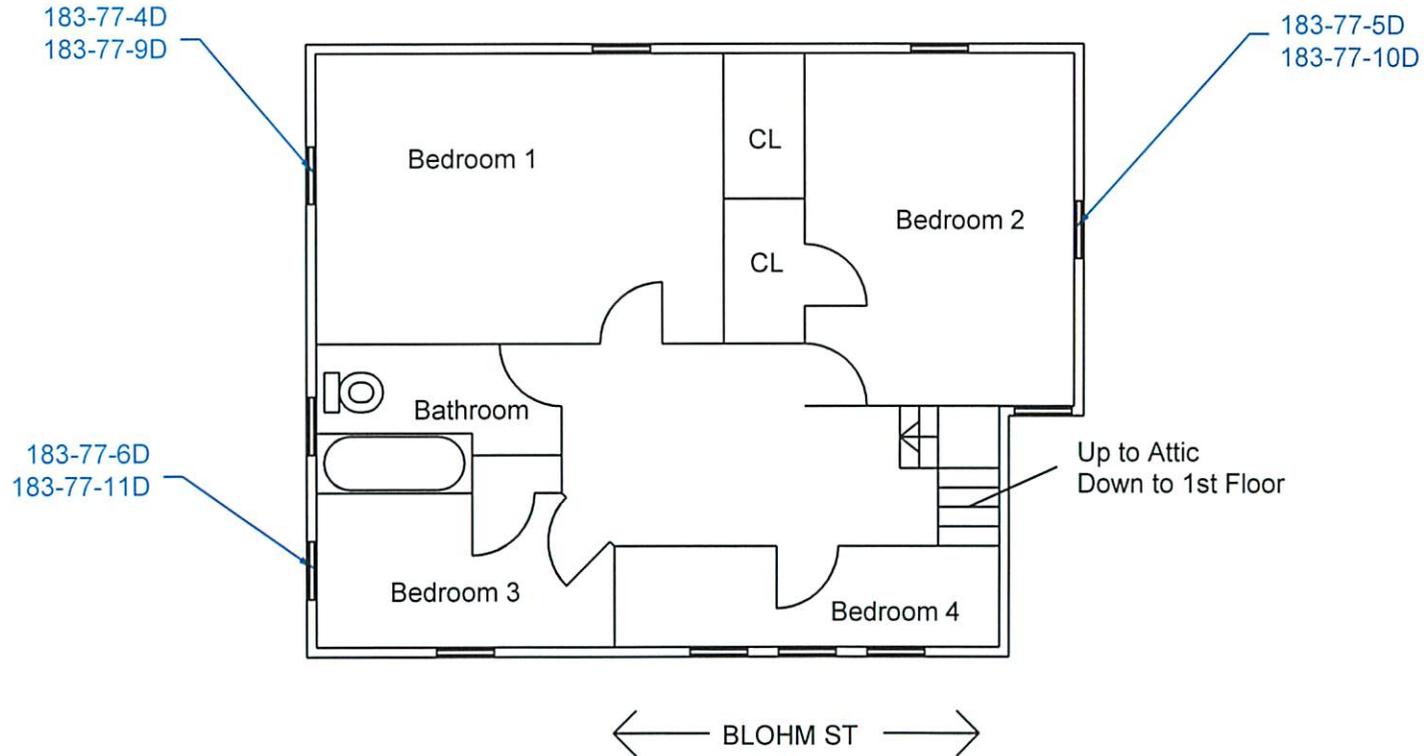
Site 008

411 Blohm Street, West Haven, CT

Main Level

CS# 183-77, 8/6/14

LEAD IN DUST SAMPLE LOCATION DRAWING



LEGEND OF SYMBOLS

#D	Lead in Dust Sample Location

NOTATIONS

DRAWN BY
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE

**LEAD RISK
ASSESSMENT**

**411 BLOHM ST
WEST HAVEN, CT**

SECOND FLOOR

CHEMSCOPE NUMBER
CS# 183-77

DRAWING NUMBER

SCALE
NOT TO SCALE

2LD

DATE
8/6/14

ChemScope Inc.

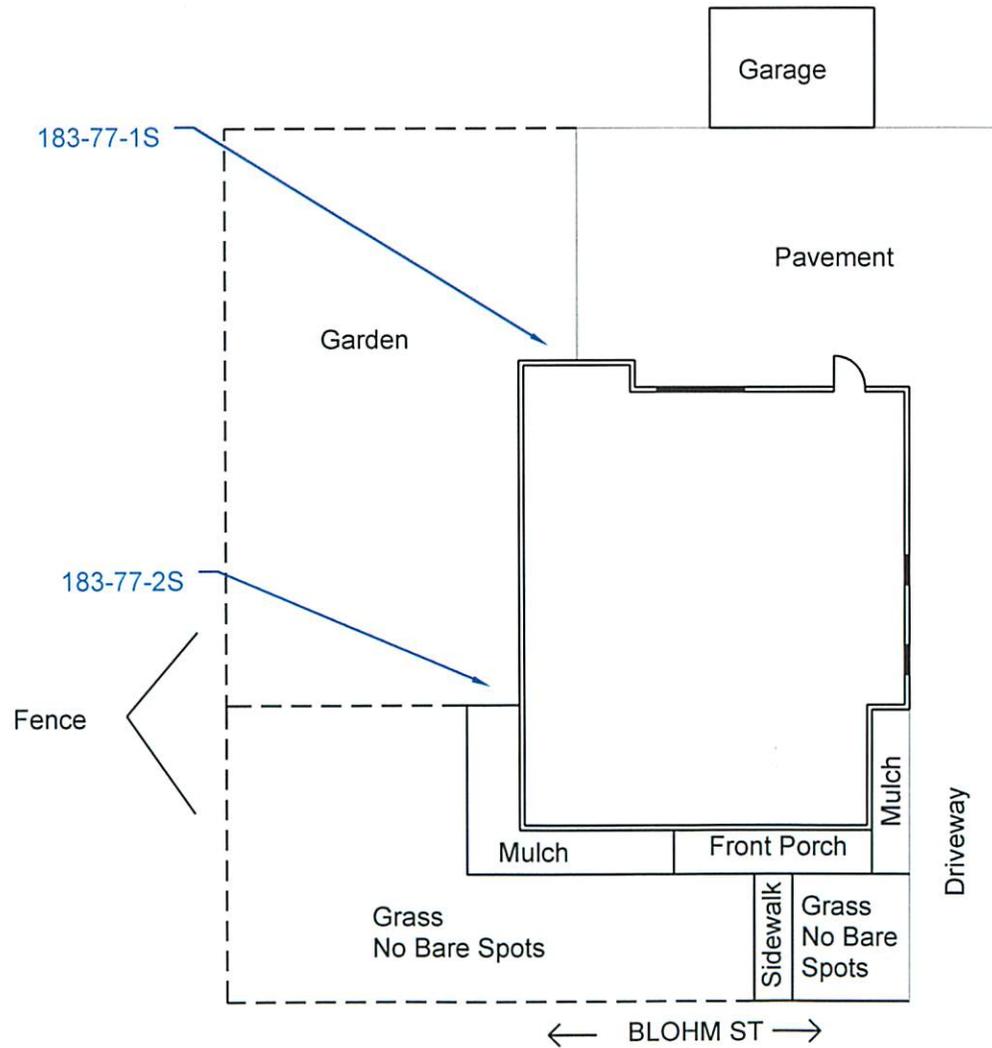
Site 008

411 Blohm Street, West Haven, CT

Exterior

CS# 183-77, 8/6/14

LEAD IN SOIL SAMPLE LOCATION DRAWING



LEGEND OF SYMBOLS

#S	Lead in Soil Sample Location
----	------------------------------

NOTATIONS

DRAWN BY
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE

LEAD RISK ASSESSMENT
411 BLOHM ST WEST HAVEN, CT
EXTERIOR

CHEMSCOPE NUMBER
CS# 183-77

DRAWING NUMBER

SCALE
NOT TO SCALE

3LS

DATE
8/6/14

Appendix D Site Reference Drawings

ChemScope Inc.

Site 008

411 Blohm Street, West Haven, CT

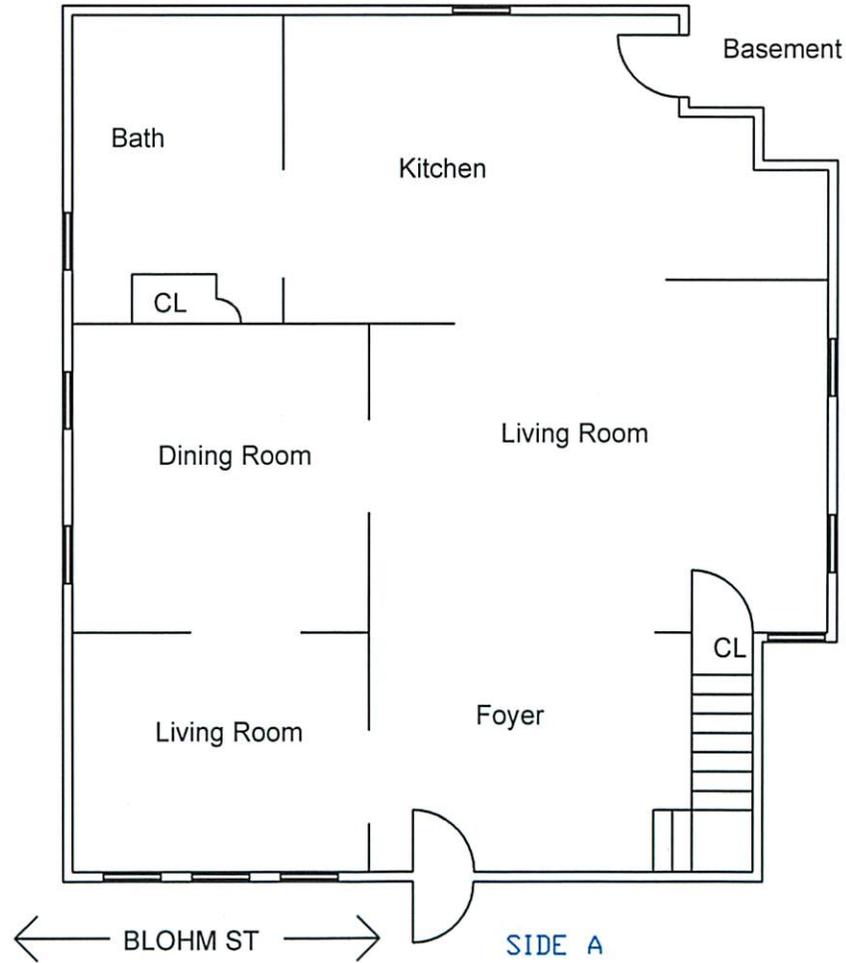
Main Level

CS# 183-77, 8/6/14

SIDE C

SIDE B

SIDE D



LEGEND OF SYMBOLS

Symbol	Description

NOTATIONS

Notation	Description

DRAWN BY
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE
**LEAD RISK
ASSESSMENT
411 BLOHM ST
WEST HAVEN, CT
FIRST FLOOR**

CHEMSCOPE NUMBER CS# 183-77	DRAWING NUMBER 1 L
SCALE NOT TO SCALE	DATE 8/6/14

Appendix E Copy of Risk Assessor's License/Certification

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A

LEAD INSPECTOR RISK ASSESSOR

DANIEL P. SULLIVAN

CERTIFICATION NO.
002131
CURRENT THROUGH
04/30/15
VALIDATION NO.
03-790779


SIGNATURE


COMMISSIONER

CERT# L-600 - 763

**CHEMSCOPE TRAINING DIVISION
LEAD INSPECTOR/RISK ASSESSOR REFRESHER
8HOUR TRAINING CERTIFICATE**

**Daniel P. Sullivan
15 Moulthrop Street , North Haven CT**

Has attended an 8 hour course on the subject discipline on
11/08/2013 and has passed a written and hands on skills examination.

The above individual has successfully completed the above training course approved in accordance with the Department of Public Health Standards established pursuant to Section 20-477 of the Connecticut General Statutes.

Course syllabus includes all required topics of State of Connecticut DPH and EPA.

Examination Date: 11/08/2013

Expiration Date: 11/08/2014

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (U.S.C. 1001 and 15 U.S.C. 2615), I certify that this training complies with all applicable requirements of Title IV of TSCA, 40 CFR part 745 and any other applicable Federal, State, or local requirements.

Ronald D. Arena or Brian Santos
Training Director Training Manager



Chem Scope, Inc.
15 Moulthrop Street
North Haven CT 06473
(203) 865-5605

Appendix F Copy of Firm's Lead Activity License/Certification

STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE STATE HAS SELECTED AND APPOINTED
TO THE DEPARTMENT AS A
LEAD CONSULTANT CONTRACTOR

CHEMSCOPE INC

DOCUMENT NO
000164

EXPIRES (MM/DD/YY)
07/31/15

VALUE (USD) NO
03-847539


SIGNATURE


STATE OF CONNECTICUT



Connecticut Department of
Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106-0127
www.ct.gov/deep

CHEM SCOPE, INC.
15 MOULTHROP STREET
NORTH HAVEN, CT 06473

12/30/2013

Dear Registrant:

Enclosed is a Certificate of Use for the Radioactive Materials and Industrial X-Ray Device Registration submitted by your facility to the department.

This certificate will serve two purposes. First, this is a way for us to acknowledge to you that your registration has been processed. Second, it is a way for our inspection staff to know that you have the appropriate registration for your radioactive materials and equipment.

The Radioactive Materials and Industrial X-Ray Device Registration must be renewed each year. Notification will be sent to you in the month of November prior to the expiration of this registration to renew your registration.

When corresponding with our office regarding your registration please use the "Application No." indicated on the certificate. This number is unique to your facility and its location.

If you have any questions regarding the Radioactive Materials and Industrial X-Ray Device Registration please feel free to call the Radiation Division at 860-424-3029.

Enclosure



Connecticut Department of
Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106-5127
www.ct.gov/deep

Certificate of Use

Issued To

CHEM SCOPE, INC.

For

Radioactive Material and Industrial X-Ray Device Registration

Daniel C. Esty
Commissioner

Site Located at:
15 Moulthrop St,
North Haven, CT 06473
Reference: 0808-2014

Application No: 201306468
Issue Date: 12/24/2013
Expiration Date: 12/31/2014

**Appendix G Copy of XRF Training Certificate and XRF Performance
Characteristics Sheet**

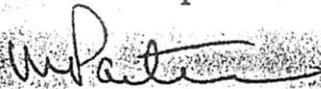
Certificate of Achievement

This is to certify that

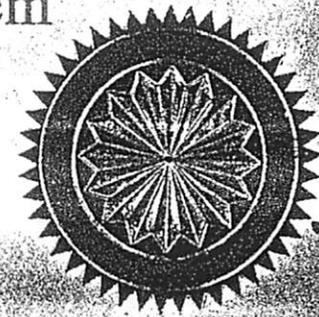
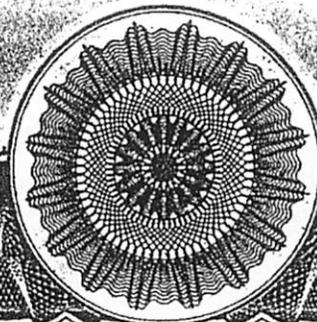
Daniel P. Sullivan
of Chem Scope

on the 2nd day of December 1994 successfully completed the factory training for
RMD's LPA-1 Lead Paint Inspection System

including, but not limited to, the topics of Radiation Safety
and the Proper Use of the Instrument.



Jacob Paster, Vice-President of RMD
44 Hunt St., Watertown, Massachusetts



Performance Characteristic Sheet

EFFECTIVE DATE: December 1, 2006

EDITION NO.: 5

MANUFACTURER AND MODEL:

Make: **Radiation Monitoring Devices**

Model: **LPA-1**

Source: **⁵⁷Co**

Note: This sheet supersedes all previous sheets for the XRF instrument of the make, model, and source shown above **for instruments sold or serviced after June 26, 1995. For other instruments, see prior editions.**

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Quick mode or 30-second equivalent standard (Time Corrected) mode readings.

XRF CALIBRATION CHECK LIMITS:

0.7 to 1.3 mg/cm² (inclusive)

SUBSTRATE CORRECTION:

For XRF results below 4.0 mg/cm², substrate correction is recommended for:

- Metal using 30-second equivalent standard (Time Corrected) mode readings.
- None using quick mode readings.

Substrate correction is not needed for:

- Brick, Concrete, Drywall, Plaster, and Wood using 30-second equivalent standard (Time Corrected) mode readings
- Brick, Concrete, Drywall, Metal, Plaster, and Wood using quick mode readings

THRESHOLDS:

30-SECOND EQUIVALENT STANDARD MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Results corrected for substrate bias on metal substrate only	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0

QUICK MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Readings not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted on approximately 150 test locations in July 1995. The instrument that performed testing in September had a new source installed in June 1995 with 12 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm² in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm² film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION :

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm² for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm² at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm². Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.

Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.

For each substrate type (the 1.02 mg/cm² NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):

$$\text{Correction value} = (1^{\text{st}} + 2^{\text{nd}} + 3^{\text{rd}} + 4^{\text{th}} + 5^{\text{th}} + 6^{\text{th}} \text{ Reading}) / 6 - 1.02 \text{ mg/cm}^2$$

Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use either the Quick Mode or 30-second equivalent standard (Time Corrected) Mode readings.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

BIAS AND PRECISION:

Do not use these bias and precision data to correct for substrate bias. These bias and precision data were computed without substrate correction from samples with reported laboratory results less than 4.0 mg/cm² lead. The data which were used to determine the bias and precision estimates given in the table below have the following properties. During the July 1995 testing, there were 15 test locations with a laboratory-reported result equal to or greater than 4.0 mg/cm² lead. Of these, one 30-second standard mode reading was less than 1.0 mg/cm² and none of the quick mode readings were less than 1.0 mg/cm². The instrument that tested in July is representative of instruments sold or serviced after June 26, 1995. These data are for illustrative purposes only. Actual bias must be determined on the site. Results provided above already account for bias and precision. Bias and precision ranges are provided to show the variability found between machines of the same model.

30-SECOND STANDARD MODE READING MEASURED AT	SUBSTRATE	BIAS (mg/cm ²)	PRECISION* (mg/cm ²)
0.0 mg/cm ²	Brick	0.0	0.1
	Concrete	0.0	0.1
	Drywall	0.1	0.1
	Metal	0.3	0.1
	Plaster	0.1	0.1
	Wood	0.0	0.1
0.5 mg/cm ²	Brick	0.0	0.2
	Concrete	0.0	0.2
	Drywall	0.0	0.2
	Metal	0.2	0.2
	Plaster	0.0	0.2
	Wood	0.0	0.2
1.0 mg/cm ²	Brick	0.0	0.3
	Concrete	0.0	0.3
	Drywall	0.0	0.3
	Metal	0.2	0.3
	Plaster	0.0	0.3
	Wood	0.0	0.3
2.0 mg/cm ²	Brick	-0.1	0.4
	Concrete	-0.1	0.4
	Drywall	-0.1	0.4
	Metal	0.1	0.4
	Plaster	-0.1	0.4
	Wood	-0.1	0.4

*Precision at 1 standard deviation.

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than the upper boundary of the inconclusive range, and negative if they are less than the lower boundary of the inconclusive range, or inconclusive if in between. The inconclusive range includes both its upper and lower bounds. Earlier editions of this *XRF Performance Characteristic Sheet* did not include both bounds of the inconclusive range as "inconclusive." While this edition of the Performance Characteristics Sheet uses a different system, the specific XRF readings that are considered positive, negative, or inconclusive for a given XRF model and substrate remain unchanged, so previous inspection results are not affected.

DOCUMENTATION:

An EPA document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD. A HUD document titled *A Nonparametric Method for Estimating the 5th and 95th Percentile Curves of Variable-Time XRF Readings Based on Monotone Regression* provides supplemental information on the methodology for variable-time XRF instruments. A copy of this document can be obtained from the HUD lead web site, www.hud.gov/offices/lead.

This XRF Performance Characteristic Sheet was developed by QuanTech, Inc., under a contract from the U.S. Department of Housing and Urban Development (HUD). HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.

Appendix H "LEAD SPEAK" – A Brief Glossary

Abatement: A measure or set of measures designed to permanently eliminate lead-based paint hazards or lead-based paint. Abatement strategies include the removal of lead-based paint, enclosure, encapsulation, replacement of building components coated with lead-based paint, removal of lead-contaminated dust, and removal of lead-contaminated soil or overlaying of soil with a durable covering such as asphalt (grass and sod are considered interim control measures). All of these strategies require preparation; cleanup; waste disposal; post-abatement clearance testing; recordkeeping; and, if applicable, monitoring. (For full EPA definition, see 40 CFR 745.223).

Bare soil: Soil not covered with grass, sod, some other similar vegetation, or paving, including the sand in sandboxes.

Chewable surface: An interior or exterior surface painted with lead-based paint that a young child can mouth or chew. A chewable surface is the same as an "accessible surface" as defined in 42 U.S.C. 4851b(2). Hard metal substrates and other materials that cannot be dented by the bite of a young child are not considered chewable.

Deteriorated paint: Any paint coating on a damaged or deteriorated surface or fixture, or any interior or exterior lead-based paint that is peeling, chipping, blistering, flaking, worn, chalking, alligating, cracking, or otherwise becoming separated from the substrate.

Dripline/foundation area: The area within 3 feet out from the building wall and surrounding the perimeter of a building.

Dust-lead hazard: Surface dust in residences that contains an area or mass concentration of lead equal to or in excess of the standard established by the EPA under Title IV of the Toxic Substances Control Act. EPA standards for dust-lead hazards, which are based on wipe samples, are published at 40 CFR 745.65(b); as of the publication of this edition of these *Guidelines*, these are 40 µg/ft² on floors and 250 µg/ft² on interior windowsills. Also called lead-contaminated dust.

Friction surface: Any interior or exterior surface, such as a window or stair tread, subject to abrasion or friction.

Garden area: An area where plants are cultivated for human consumption or for decorative purposes.

Impact surface: An interior or exterior surface (such as surfaces on doors) subject to damage by repeated impact or contact.

Interim controls: A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include, but are not limited to, specialized cleaning, repairs, maintenance, painting, temporary containment, and the establishment and operation of management and resident education programs. Monitoring, conducted by owners, and reevaluations, conducted by professionals, are integral elements of interim control. Interim controls include dust removal; paint film stabilization; treatment of friction and impact surfaces; installation of soil coverings, such as grass or sod; and land use controls. Interim controls that disturb painted surfaces are renovation activities under EPA's Renovation, Repair and Painting Rule.

Lead-based paint: Any paint, varnish, shellac, or other coating that contains lead equal to or greater than 1.0 mg/cm² as measured by XRF or laboratory analysis, or 0.5 percent by weight (5000 mg/g, 5000 ppm, or 5000 mg/kg) as measured by laboratory analysis. (Local definitions may vary.)

Lead-based paint hazard: A condition in which exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health (as established by the EPA at 40 CFR 745.65, under Title IV of the Toxic Substances Control Act). Lead-based paint hazards include, for example, **paint-lead hazards, dust-lead hazards, and soil-lead hazards.**

Paint-lead hazard: Lead-based paint on a friction surface that is subject to abrasion and where a dust-lead hazard is present on the nearest horizontal surface underneath the friction surface (e.g., the window sill, or floor); damaged or otherwise deteriorated lead-based paint on an impact surface that is caused by impact from a related building component; a chewable lead-based painted surface on which there is evidence of teeth marks; or any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of any residential building or child-occupied facility.

Play area: An area of frequent soil contact by children of under age 6 as indicated by, but not limited to, such factors including the following: the presence of outdoor play equipment (e.g., sandboxes, swing sets, and sliding boards), toys, or other children's possessions, observations of play patterns, or information provided by parents, residents, care givers, or property owners.

Soil-lead hazard: Bare soil on residential property that contains lead in excess of the standard established by the EPA under Title IV of the Toxic Substances Control Act. EPA standards for soil-lead hazards, published at 40 CFR 745.65(c), as of the publication of this edition of these *Guidelines*, is 400 µg/g in play areas and 1,200 µg/g in the rest of the yard. Also called lead-contaminated soil.

Appendix I Additional Lead and Lead Safety Resource

Key Units of Measurement

Gram (g or gm): A unit of mass in the metric system. A nickel weighs about 1 gram, as does a 1 cube of water 1 centimeter on each side. A gram is equal to about 35/1000 (thirty-five thousandths of an ounce). Another way to think of this is that about 28.4 grams equal 1 ounce.

µg (microgram): A microgram is 1/1000th of a milligram. To put this into perspective, a penny weighs 2 grams. To get a microgram, you would need to divide the penny into 2 million pieces. A microgram is one of those two million pieces.

µg/dL (microgram per deciliter): used to measure the level of lead in children's and worker's blood to establish whether intervention is needed. A deciliter is a little less than a half a cup.

µg/ft² (micrograms per square feet): the unit used to express levels of lead in dust samples. All reports should report levels of lead in dust in µg/ft².

mg/cm² (milligrams per square centimeter): used to report levels of lead in paint thru XRF testing.

ppm (parts per million): Typically used to express the concentrations of lead in soil. Can also be used to express the amount of lead in a surface coating on a mass concentration basis. This measurement can also be shown as: µg/g, mg/kg or mg/l.

ppb (parts per billion): Typically used to express the amount of lead found in drinking water. This measurement is also sometimes expressed as: µg/L (micrograms per liter). EPA/HUD Lead-Based Paint and Lead-Based Paint Hazard Standards

Lead-Based Paint (may be determined in either of two ways)

- Surface concentration (mass of lead per area) 1.0 µg/cm²
- Bulk concentration (mass of lead per volume) 0.5%, 5000 µg/g, or 5000 ppm

Dust-thresholds for Lead-Contamination

- Floors 40 µg/ft²
- Interior Window Sills 250 µg/ft²
- Window Troughs (clearance examination only) 400 µg/ft²

Soil-thresholds for Lead Contamination

- Play areas (used by children under age 6) 400 µg/g, or 400 ppm
- Other areas 1200 µg/g, or 1200 ppm

Resources For Additional Information On Lead-Based Paint And Lead-Based Paint Hazards:

National Lead information Center & Clearinghouse: 1-800-424 LEAD

www.epa.gov/lead/pubs/nlic.htm

Centers for Disease Control and Prevention Lead Program: www.cdc.gov/lead Toll-free

CDC Contact Center: 800-CDC-INFO; TTY 888-232-6348

Consumer Product Safety Commission www.cpsc.gov Toll-free consumer hotline: 1-800-638-2772; TTY 301-595-7054

Environmental Protection Agency Lead Program: www.epa.gov/lead 202-566-0500

HUD Office of Healthy Homes and Lead Hazard Control: www.hud.gov/offices/lead 202-402-7698

Connecticut Department of Public Health, Lead Poisoning Prevention Program

<http://www.ct.gov/dph/>

Hearing- or speech-challenged individuals may access the federal agency numbers above through TTY by calling the toll-free Federal Relay Service at 800-877-8339; see also

<http://www.federalrelay.us/tty>.

Scott Feulner
Diversified Technology Consultants (DTC)
2321 Whitney Avenue, Suite 301
Hamden, CT 06518

5/2/2014

**ASBESTOS PRE-RENOVATION INSPECTION
SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION #2140
CS#183-77, 4/25/2014, Page 1 of 4**

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Recommendations	4

Attachments:

- Scope of inspection drawing-1 page
- ACM location drawing-1 page
- PLM Certificate of Analysis report with chain of custody-5 pages
- Sample location drawing-1 page

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File Location:

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**ASBESTOS PRE-RENOVATION INSPECTION
SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION #2140
CS#183-77, 4/25/2014, Page 2 of 4**

INTRODUCTION

EXECUTIVE SUMMARY: Asbestos containing materials (ACM) were detected within the scope of this inspection and will need to be properly removed (abated) and disposed of prior to renovation that would disturb these materials. See Inspection Report Synopsis and Recommendation sections for further details.

BUILDING DESCRIPTION: The subject building is a single-family, two-story house, with an attic and basement totaling approximately 1900 sq ft, which was built in 1906 of wood-frame construction. Heat is supplied from a boiler in the basement. At the time of our screening, there were no children under the age of six residing at this subject house and the house was not being used as a daycare facility.

BACKGROUND: We understand the subject house suffered damage as a result of hurricane Sandy on October 29-30, 2012. The house is scheduled to be renovated. We understand a tree limb cause damaged to a basement window, and the paint on the concrete wall below that window. We understand the homeowner fixed the broken window, but the wall below it still needs to be re-painted. We understand the upper roof suffered damage and is scheduled to be replaced.

SCOPE OF INSPECTION: Asbestos Pre-Renovation Inspection of the upper roof only at the subject house, as directed by our client.

Our work included the following:

- Collection and analysis of building materials within the scope of renovation for asbestos, as required by the regulations.
- A list with quantity, type and location of asbestos containing materials (ACM) in the scope.
- Report of the findings including ACM location drawings.

This investigation and information provided in this report depends partly on background information provided by the client. This report is intended for the use of the client. The scope of services performed may not be appropriate for other users and any use of this report by third parties is at their sole risk. This report is intended to be used in its entirety. No excerpts may be taken to be representative of this report.

TEST PARAMETERS: This is an Asbestos Pre-Renovation Inspection intended to identify the presence, location, and quantity of any asbestos containing building materials which are part of the Renovation for compliance with OSHA 1926.1101 (k)(2)(i) and CT DPH 19a-332a-1 through 16.

For sampling, EPA Wet Methods are used to prevent fiber release. Building materials sampled are analyzed at our laboratory by EPA method 600/R-93/116. This is currently the approved EPA Test method, which uses Polarized Light Microscopy with Dispersion Staining. The laboratory is accredited by NIST/NVLAP and AIHA, and is a Connecticut Approved Environmental Laboratory for Asbestos Analysis.

ASBESTOS PRE-RENOVATION INSPECTION
SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION #2140
CS#183-77, 4/25/2014, Page 3 of 4

INSPECTION REPORT SYNOPSIS

LOCATION NAME AND ADDRESS: Site 008, Application #2140
411 Blohm Street, West Haven, CT

INSPECTION DATE(S): 4/25/2014

QUALIFICATIONS: The Inspection was conducted by Daniel P. Sullivan:

- EPA & State of Connecticut Accredited Asbestos Inspector, Project Monitor & Project Designer
- State of Connecticut Licensed Asbestos Inspector/Management Planner (#000019)
- State of Connecticut Licensed Asbestos Project Monitor (#000036)
- State of Connecticut Licensed Asbestos Project Designer (#000096)

Dan was assisted by Ziyang Wang. For information about Chem Scope, Inc., log onto <http://www.chem-scope.com>.

FINDINGS: The following asbestos containing materials (ACM) were detected in the Scope of the Inspection:

<i>MATERIAL</i>	<i>LOCATION</i>	<i>~FOOTAGE</i>
Black ACM roof flashing tar (at penetrations, roof joints, patch areas, etc.)	Upper Roof	10 sq ft

The following is a summary table of the materials that tested as non-Asbestos Containing Material (ACM) (<1%) within the Scope of Work (not already summarized above):

Material	Location	Sample #'s	Findings
Black fibrous roof shingle with white granules (on black fibrous roof shingle with red granules on black fibrous paper on wood)	Upper Roof	183-77-3,4	No Asbestos Detected
Black fibrous roof shingle with red granules (under Black fibrous roof shingle with white granules, on black paper on wood)	Upper Roof	183-77-5,6	No Asbestos Detected
Black fibrous paper (under two layers of shingles, on wood)	Upper Roof	183-77-7,8	<1%Chrysotile Asbestos*

* Materials with <1% asbestos (such as the black fibrous paper) are not defined as asbestos containing materials in DPH and EPA regulations. However, OSHA regulations require proper procedures be used to prevent exposure to workers performing the related disturbance. This includes training and protection for employees who may be exposed above the OSHA PEL.

LIMITATIONS OF INSPECTION

It is important to note that every effort is made to detect asbestos (ACM) in the path of the renovation by our inspectors. It is not practical or prudent to demolish the entire roof during an inspection. The owner should be aware of this in case suspect materials or concealed suspect materials are uncovered during the actual renovation. If suspect materials that were previously not accessible or not sampled during this inspection are discovered during the renovation, or if the scope of the renovation changes to include disturbance of new materials not inspected, then renovation must stop and the materials must be sampled by a CT DPH licensed asbestos inspector prior to disturbance of these materials.

**ASBESTOS PRE-RENOVATION INSPECTION
SITE 008 – 411 BLOHM STREET, WEST HAVEN, CT
APPLICATION #2140
CS#183-77, 4/25/2014, Page 4 of 4**

RECOMMENDATIONS

All Asbestos Containing Materials (ACM) detected in the path of the inspection must be removed prior to the disturbance of these materials. Asbestos removal and disposal is regulated by federal and state agencies.

In the case of asbestos roofing abatement there is a Memorandum of Understanding (MOU) between OSHA and the National Roofing Contractors Association (NRCA), dated 3/15/95, on how to remove asbestos roofing. Regardless of whether the material is friable or non-friable, DEEP disposal regulations apply.

Since Intact Incidental ACM roofing, which includes cements, coatings, mastics, and flashings, was detected within the scope of this inspection, the removal is to be by individuals with a minimum of OSHA 8-hour roof training. The Intact Incidental ACM roofing is currently non-friable and as long as it stays non-friable by utilizing the manual methods outlined in OSHA 1926.1101(g)(11)(iii) notification to the CT DPH is not required. The recommended manual methods outlined by OSHA include but not be limited to the use of spud, spade, flat-blade or slicing tools, such as axes, mattocks, pry bars, spud bars, crow bars, shovels, flat-blade knives, and utility knives, to slice, cut, strip-off, shear-under, or pry-up the material.

Also, OSHA regulations 1926.1101 requires that before asbestos removal or repair work (class I, II or III work) is initiated, building owners/facility owners must notify their own employees and employers who are bidding on such work, of the quantity and location of ACM or PACM (presumed asbestos containing material) present in such areas. Also for inadvertently discovered ACM or PACM there is a 24-hour notification requirement to the owner and all employers at the site.

General Work Requirements for Intact Incidental ACM Roofing Removal (according to OSHA 1926.1101 and MOU between OSHA and NRCA):

- Before work begins and as needed during the job, a competent person shall conduct an inspection of the worksite and determine that the roofing material is intact and will likely remain intact.
- All employees performing work involving only intact incidentals shall be trained (minimum OSHA 8-hour roof training).
- The materials shall not be sanded, abraded, or ground. Manual methods as outlined above in OSHA 1926.1101(g)(11)(iii), that do not render the material non-intact shall be used.
- Material that has been removed shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand it shall be lowered to the ground via covered, dust-tight chute, crane, or hoist. All such material shall be removed from the roof as soon as practicable, but no later than the end of the workshift. Then properly packaged for disposal.

Materials with <1% asbestos (such as the black fibrous paper) are not defined as asbestos containing materials in DPH and EPA regulations. However, OSHA regulations require proper procedures be used to prevent exposure to workers performing the related disturbance. This includes training and protection for employees who may be exposed above the OSHA PEL.

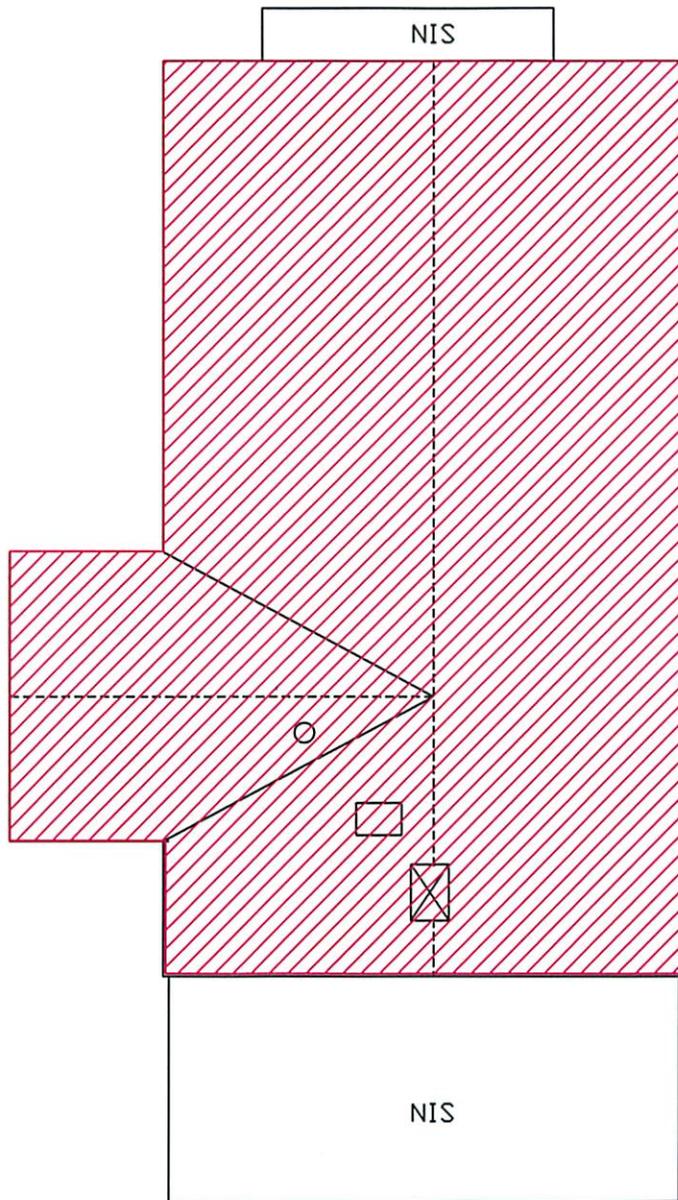
If you have any questions or need more information please call me.

Sincerely,



Dan Sullivan
Vice President, Operations

← BLOHM ST →



ChemScope Inc.

Site 008

411 Blohm Street, West Haven, CT

ROOF

CS# 183-77, 4-25-14

SCOPE OF INSPECTION DRAWING



LEGEND OF SYMBOLS

Scope of Inspection

NIS Not in Scope

NOTATIONS

DRAWN BY:
DAN SULLIVAN

ChemScope Inc.

SHEET TITLE:
**ASBESTOS AND
LEAD INSPECTION**
**411 BLOHM ST
WEST HAVEN, CT**

Roof

CHEMSCOPE NUMBER:
CS# 183-77

SCALE:
NOT TO SCALE

DATE:
4/25/14

DRAWING NUMBER

1 S

Certificate Of Analysis

Diversified Technology Consultants (DTC) - Scott Feulner

2321 Whitney Avenue

Suite 301

Hamden CT 06518

5/2/2014

CS# 183-77

Page 1 of 3

Bulk sample(s) from Site 008, 411 Blohm Street, West Haven, CT collected by Dan Sullivan (assisted by Ziyang Wang) on 4/25/2014

Asbestos Identification in the samples. Examination made by Polarized Light Microscopy (PLM) per EPA Test Method 600/R-93/116

Sample Identification

Findings (Analyzed 5/2/14)

183-77-1 Black sticky fibrous flashing tar (at chimney penetration) / Upper Roof

*29% Chrysotile Asbestos
23% Non- Fibrous Particles
48% Volatile on Ignition*

183-77-2 Black sticky fibrous flashing tar (at chimney penetration) / Upper Roof

Not Analyzed

183-77-3 Black fibrous roof shingle with white granules (on black fibrous roof shingle with red granules on black fibrous paper on wood) / Upper Roof

*No Asbestos Detected
39% Non- Fibrous Particles
29% Volatile on Ignition
32% Fiberglass*

183-77-4 Black fibrous roof shingle with white granules (on black fibrous roof shingle with red granules on black fibrous paper on wood) / Upper Roof

*No Asbestos Detected
42% Non- Fibrous Particles
23% Volatile on Ignition
35% Fiberglass*

183-77-5 Black fibrous roof shingle with red granules (from sample #3) / Upper Roof

*No Asbestos Detected
56% Non- Fibrous Particles
44% Volatile on Ignition*

Bulk sample(s) from Site 008, 411 Blohm Street, West Haven, CT collected by Dan Sullivan (assisted by Ziyang Wang) on 4/25/2014

Asbestos Identification in the samples. Examination made by Polarized Light Microscopy (PLM) per EPA Test Method 600/R-93/116

Sample Identification

Findings (Analyzed 5/2/14)

183-77-6 Black fibrous roof shingle with red granules (from sample #4) / Upper Roof

*No Asbestos Detected
45% Non- Fibrous Particles
55% Volatile on Ignition*

183-77-7 Black fibrous paper (from sample #3) / Upper Roof

*No Asbestos Detected
7% Non- Fibrous Particles
93% Volatile on Ignition*

183-77-8 Black fibrous paper (from sample #4) / Upper Roof

*<1% Chrysotile Asbestos (point counted)
5% Non- Fibrous Particles
95% Volatile on Ignition*

**PARAMETERS
ASBESTOS PLM ANALYSIS
(Revised 3/22/13)**

1. *Materials which contain >1% asbestos (greater than 1%) by PLM (polarizing light microscopy) analysis are considered to be asbestos containing materials under EPA and the State of Connecticut Regulations. OSHA still regulates material with <1%. (Contact laboratory for information.) {Note: A more sensitive method is available called TEM (transmission electron microscopy). TEM may detect asbestos fibers that PLM cannot see, but the above agencies' enforcement is based on PLM analysis. Rules may differ for states other than Connecticut. It is best to check with the individual state. For example, New York State requires TEM confirmation of negative PLM results on floor tile}.*
2. *If no asbestos is detected in a sample, or if the asbestos content is less than 1% by PLM, additional samples of the same material should be submitted for confirmation. Please check with the laboratory for guidance on the number of samples needed. Sample collection in Connecticut must be by a DPH Licensed Asbestos Inspector. Many other states also require licensing.*
3. *Floor Tile Mastic: Mastic under floor tile should be separately sampled by scraping some of the mastic from the floor to avoid contamination from the floor tile.*
4. *Although Chem Scope, Inc. takes great effort to insure accuracy in the estimation of asbestos in the materials analyzed, no quantitation method is without some uncertainty. Based on independent calibration studies and comparison of Chem Scope's quantitative results with NVLAP and AIHA round robin programs we estimate our uncertainty in quantitation to be relatively small. The average relative uncertainty of the estimate is calculated to be 35% for samples that contain less than 10% asbestos. This means a estimate of 10% asbestos in a sample has a probable range of 6.5% to 13.5% while an estimate of 1% has a range of 0.65% to 1.35%.*
5. *The presence of non-asbestos components, which are recognized by the PLM analyst, is reported with the estimated amounts. This is not an exhaustive analysis for the non-asbestos materials since the primary purpose is to determine if asbestos is present and, if so, how much is present of each type of asbestos.*
6. *Results reported apply only to the sample(s) analyzed.*
7. *Special treatment of samples: Chem Scope, Inc. routinely uses gravimetric sample reduction techniques such as low temperature ashing or acid dissolution on samples like floor tile, roofing materials, glue dots, or high cellulose content samples prior to PLM analysis. These methods are used to aid in the PLM analysis and to provide better quantitative data. Layered samples, if possible, are analyzed separately as individual layers. However, in accordance with the method, if any layer contains >1% asbestos (greater than 1%) it is to be considered an asbestos containing material. All results are reported to the original sample basis.*
8. *Sample results are not corrected for blanks. Analytical blanks are run daily and if contamination is suspected the samples are rerun.*
9. *Chem Scope, Inc. performs "400 point" point counting when the asbestos content is visually estimated to be less than 10%. There is no additional charge for this analysis.*

The Scope of Accreditation referenced in this report applies to bulk asbestos fiber analysis by PLM (Polarized Light Microscopy).

Accreditation does not imply endorsement by NVLAP, NIST or any Federal or State Agency.

This report pertains only to the samples tested and may not be reproduced in part.

Condition of the samples at the time of receipt was acceptable unless otherwise noted on the Certificate of Analysis.

See test parameters above and attached chain of custody form.

We would love to hear from you. Comments? Questions? Please call or email us at chem.scope@snet.net.

ChemScope, Inc. is accredited by AIHA LAP, LLC LAB #100134

NVLAP Lab Code 101061-0.

Connecticut Department of Public Health (DPH) Approved Environmental Lab PH 0581

[Signature]
Signature
Analyst

[Signature]
Signature
(if applicable)
Inspector

Authorized Signature or
Suzanne Cristante
Laboratory Director

Authorized Signature or
Izabela Kremens
Quality Manager

[Signature]
Authorized Signature
Rohald Areña
President

Dear Laboratory Customer or Potential Customer,

New laboratory accreditation standards require us to provide our clients information about our services to make sure that your requirements for testing are adequately defined, documented and understood. The following is for your information. Please call us if you have any questions or comments.

Type of Samples:

/ / PCM cassettes are routinely run by NIOSH Method 7400.

/ / Bulk materials are run by EPA Method: #600/R-93/116.

Air Samples: NIOSH 7400 Method counts all fibers. This method may be used for personal air samples and for finals. Two field blanks must be submitted for each set of samples. In the unlikely event that there is to be any deviation from the standard test, you will be consulted by phone before the work begins. Those clients who have not had NIOSH 582 or AHERA asbestos training courses (either supervisor or project monitor) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

Bulk materials: sampled are analyzed by the latest EPA Method: (#600/R-93/116) which uses polarized light microscopy (PLM). When asbestos is detected and the amount is estimated to be <10%, we automatically point count the samples. When there are interfering substances present, we may use ashing, acid washing or other procedures described in the method to handle the interference. Those clients who have not had AHERA asbestos training courses (either inspector, supervisor or project designer) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

All Samples must be clearly labeled with source name and identification number or sufficient information from the client to make this sample uniquely identified. (We will then add our notebook #, page # (batch) and unique number within the batch.) Samples must be in a clean, air tight package such as a zip loc bag. Appropriate completed paperwork must accompany the sample. Bulk and air samples may not be submitted in the same package.

As soon as available bench top results will be faxed to you and reports will then be mailed. We will retain air samples for at least three months and bulk samples for 6 months unless you advise us otherwise.

You are welcome to visit the laboratory at any time to discuss the work, monitor the work or verify our testing services. We appreciate your business and encourage any feedback regarding improving our services or our quality system. Please take a minute to complete the following survey and mail/fax it to ChemScope, Inc.

Customer Service Survey

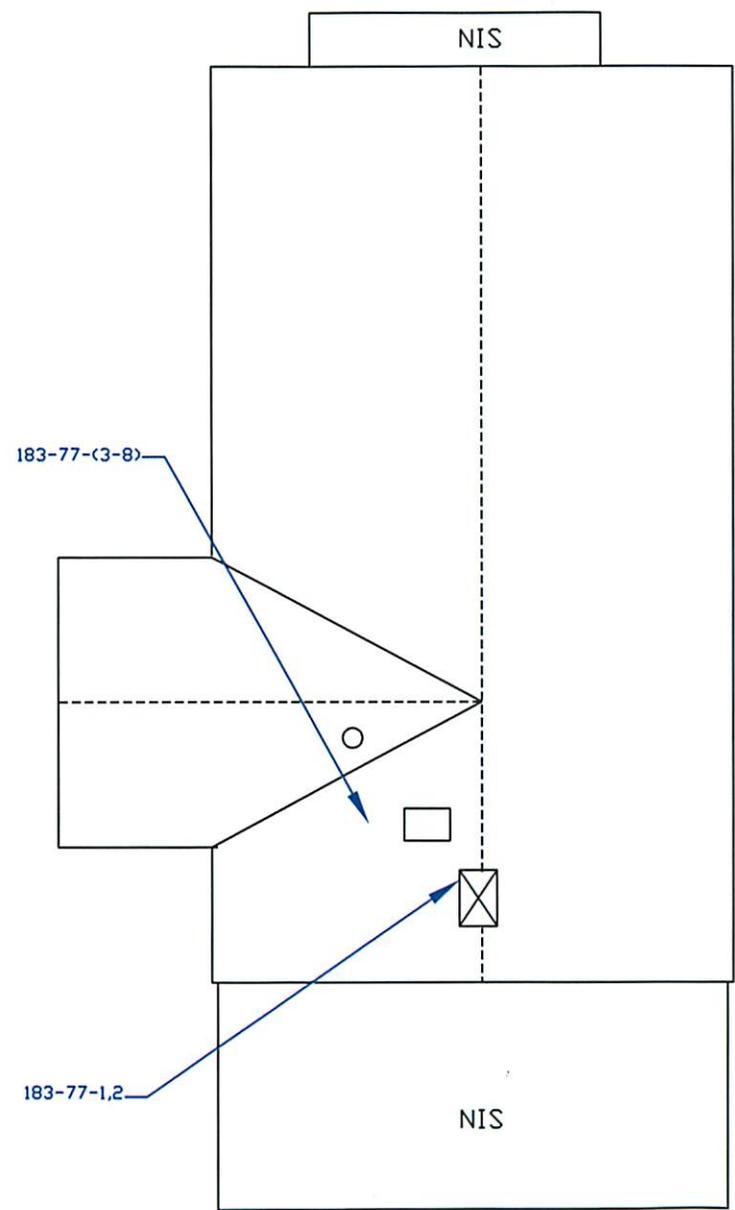
To help us improve our services give your opinions to the following:

- 1- The printed laboratory report was complete and easy to understand. YES NO
If no, please explain _____.
- 2- The turn around time for results met your expectations/needs. YES NO
If no, please explain _____.
- 3- How likely are you to recommend ChemScope Inc. to someone?
 Excellent Very Good Good Fair Poor
- 4- How likely are you to return to ChemScope in the future if the need arises?
 Excellent Very Good Good Fair Poor
- 5. On a scale of 1 to 5 where 1 represents "Satisfied" and 5 represents "Dissatisfied", how would you rate your level of overall satisfaction.
 1 2 3 4 5
- 6- Please add any additional comments or suggestions that would be helpful when you use our services:

 Name _____ Company _____
 Address _____ Telephone/e-mail _____

Can we contact you regarding this survey? YES NO

← BLOHM ST →



ChemScope Inc.

Site 008

411 Blohm Street, West Haven, CT

ROOF

CS# 183-77, 4-25-14

BULK SAMPLE LOCATION DRAWING



LEGEND OF SYMBOLS

1 Bulk Sample No.

NIS Not in Scope

NOTATIONS

DRAWN BY:
DAN SULLIVAN

ChemScope Inc.

SHEET TITLE:

**ASBESTOS AND
LEAD INSPECTION**

**411 BLOHM ST
WEST HAVEN, CT**

Roof

CHEMSCOPE NUMBER: CS# 183-77 DRAWING NUMBER

SCALE: NOT TO SCALE **1 B**

DATE: 4/25/14