

CONTRACT AWARD
SP-38 Rev. 4/08
Prev. Rev. 5/07

STATE OF CONNECTICUT

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROCUREMENT DIVISION

165 Capitol Avenue, 5th Floor South

HARTFORD, CT 06106-1659

Paul Greco
Contract Specialist

(860)713-5189
Telephone Number

CONTRACT AWARD NO.:

10PSX0238

Contract Award Date:

17 December 2010

Bid Due Date:

15 November 2010

CONTRACT AWARD

IMPORTANT: THIS IS NOT A PURCHASE ORDER. DO NOT PRODUCE OR SHIP WITHOUT AN AGENCY PURCHASE ORDER.

DESCRIPTION: Asbestos, lead and mold abatement services

FOR:
CT Department of Public Works
165 Capitol Ave. Hartford, CT 06106.
All Using State Agencies and Political Sub-Divisions of the State

TERM OF CONTRACT:
2/1/2011 through 1/31/2016

AGENCY REQUISITION NUMBER: 01886

IN STATE (NON-SB) CONTRACT VALUE	DAS CERTIFIED SMALL BUSINESS CONTRACT VALUE	OUT OF STATE CONTRACT VALUE	TOTAL CONTRACT AWARD VALUE
\$500,000.00	\$1,500,000.00		Est. \$2,000,000.00

NOTICE TO CONTRACTORS: This notice is not an order to ship. Purchase Orders against contracts will be furnished by the using agency or agencies on whose behalf the contract is made.

INVOICE SHALL BE RENDERED DIRECT TO THE ORDERING AGENCY.

NOTE: Dollar amounts listed next to each contractor are possible award amounts, however, they do not reflect any expected purchase amounts (actual or implied). They are for CHRO use only.

NOTICE TO AGENCIES: A complete explanatory report shall be furnished promptly to the Procurement Manager concerning items delivered and/or services rendered on orders placed against awards listed herein which are found not to comply with the specifications or which are otherwise unsatisfactory from the agency's viewpoint, as well as failure of the contractor to deliver within a reasonable period of time specified. Please issue orders and process invoices promptly.

CASH DISCOUNTS: Cash discounts, if any, shall be given SPECIAL ATTENTION, but such cash discount shall not be taken unless payment is made within the discount period.

PRICE BASIS: Unless otherwise noted, prices include delivery and transportation charges fully prepaid f.o.b. agency. No extra charge is to be made for packing or packages.

See page two for Awarded Contractor information

APPROVED _____

Carol Wilson

DAS Procurement Director

(Original Signature on Document in Procurement Files)

CONTRACTOR INFORMATION:REFER TO THE CONTRACT ON THE DAS PROCUREMENT WEB PAGE FOR THE MOST CURRENT CONTRACTOR INFORMATION. (<http://www.das.state.ct.us/cr1.aspx?page=8>)Company Name: **AAIS, Inc.**Company Address: **802 Boston Post Rd. West Haven, CT 06516**Tel. No.: **203-932-2992**Fax No.: **203-932-9892**Contract Value: **est. \$500,000.00**Contact Person: **James Reilly**Delivery: **As required by contract**Contact Person Address: **same**Company E-mail Address and/or Company Web Site **jreilly@aaiscorp.com**Remittance Address: **same**Certification Type (SBE, MBE, WBE or None): **SBE**Terms: **Net 45 Days**Agrees to Supply Political Sub-Divisions: **Y****CONTRACTOR INFORMATION:**REFER TO THE CONTRACT ON THE DAS PROCUREMENT WEB PAGE FOR THE MOST CURRENT CONTRACTOR INFORMATION. (<http://www.das.state.ct.us/cr1.aspx?page=8>)Company Name: **Bestech Inc. of CT**Company Address: **25 Pinney St. Ellington, CT 06029**Tel. No.: **860-896-1000**Fax No.: **860-871-5982**Contract Value: **est. \$500,000.00**Contact Person: **Bob Sullivan**Delivery: **As required by contract**Contact Person Address: **same**Company E-mail Address and/or Company Web Site **bsullivan@bestechct.com**Remittance Address: **same**Certification Type (SBE, MBE, WBE or None): **SBE**Terms: **Net 45 Days**Agrees to Supply Political Sub-Divisions: **Y****CONTRACTOR INFORMATION:**REFER TO THE CONTRACT ON THE DAS PROCUREMENT WEB PAGE FOR THE MOST CURRENT CONTRACTOR INFORMATION. (<http://www.das.state.ct.us/cr1.aspx?page=8>)Company Name: **HazPros, Inc.**Company Address: **125-A Brook St. West Hartford, CT 06110**Tel. No.: **860-232-2225**Fax No.: **860-233-9654**Contract Value: **est. \$500,000.00**Contact Person: **Randy Newbury**Delivery: **As required by contract**Contact Person Address: **same**Company E-mail Address and/or Company Web Site **randy@hazpros.com**Remittance Address: **same**Certification Type (SBE, MBE, WBE or None): **SBE**Terms: **Net 45 Days**Agrees to Supply Political Sub-Divisions: **Y****CONTRACTOR INFORMATION:**REFER TO THE CONTRACT ON THE DAS PROCUREMENT WEB PAGE FOR THE MOST CURRENT CONTRACTOR INFORMATION. (<http://www.das.state.ct.us/cr1.aspx?page=8>)Company Name: **Manafort Brothers Inc.**Company Address: **414 New Britain Ave. Plainville, CT 06062**Tel. No.: **860-229-4853**Fax No.: **860-747-5229**Contract Value: **est. \$500,000.00**Contact Person: **Justin Manafort**Delivery: **As required by contract**Contact Person Address: **same**Company E-mail Address and/or Company Web Site **jusmanafort@manafort.com**Remittance Address: **same**Certification Type (SBE, MBE, WBE or None): **None**Terms: **Net 45 Days**Agrees to Supply Political Sub-Divisions: **Y**

CONTRACT

10PSX0238

Between

THE STATE OF CONNECTICUT

Acting by its

DEPARTMENT OF ADMINISTRATIVE SERVICES

AND

AAIS Corp.

FOR

ASBESTOS, LEAD AND MOLD ABATEMENT SERVICES

December 17, 2010

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This Contract (the “Contract”) is made as of the 17th day of December, in the year 2010 , by and between, AAIS Corp. (the “Contractor,”) with a principal place of business at 802 Boston Post Rd. West Haven, CT 06516, acting by Maria Bannon, its Treasurer and the State of Connecticut, Department of Administrative Services (“DAS”), with a principal place of business at 165 Capitol Ave, Hartford, Connecticut 06106-1659, acting by Paul Greco, its Contract Specialist, in accordance with Sections 4a-2 and 4a-51 of the Connecticut General Statutes.

Now therefore, in consideration of these presents, and for other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the Contractor and the State agree as follows:

1. Definitions. Unless otherwise indicated, the following terms shall have the following corresponding definitions:
 - (a) Cancellation: An end to the Contract effected pursuant to a right which the Contract creates due to a breach.
 - (b) Claims: All actions, suits, claims, demands, investigations and proceedings of any kind, open, pending or threatened, whether mature, unmatured, contingent, known or unknown, at law or in equity, in any forum.
 - (c) Client Agency: State of Connecticut, CT Department of Public Works, Using Agency Government Agency, Not for Profit Agency
 - (d) Contract: The agreement, as of its effective date, between the Proposer and the State for any or all Goods or Services at the Proposal price.
 - (e) Contractor: A person or entity who submits a Proposal and who executes a Contract.
 - (f) Contractor Parties: A Contractor’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.
 - (g) Day: All calendar days other than Saturdays, Sundays and days designated as national or State of Connecticut holidays upon which banks in Connecticut are closed.
 - (h) Expiration: An end to the Contract due to the completion in full of the mutual performances of the parties or due to the Contract’s term being completed.
 - (i) Force Majeure: Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has occurred, including, but not limited to, labor troubles unrelated to the Contractor, failure of or inadequate permanent power, unavoidable casualties, fire not caused by the Contractor, extraordinary weather conditions, disasters, riots, acts of God, insurrection or war.
 - (j) Goods: For purposes of the Contract, all things which are movable at the time that the Contract is effective and which include, without limiting this definition, supplies, materials and equipment, as specified in the Request for Proposals and set forth in Exhibit A.
 - (k) Goods or Services: Goods, Services or both, as specified in the Request for Proposals and set forth in Exhibit A.

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- (l) Proposal: A Proposer’s submittal in response to a Request for Proposals.
 - (m) Proposer Parties: A Proposer’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Proposer is in privity of oral or written contract and the Proposer intends for such other person or entity to Perform under the Contract in any capacity.
 - (n) Records: All working papers and such other information and materials as may have been accumulated by the Contractor in performing the Contract, including but not limited to, documents, data, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.
 - (o) Request for Proposals: A State request inviting proposals for Goods or Services. This Contract shall be governed by the statutes, regulations and procedures of the State of Connecticut, Department of Administrative Services.
 - (p) Services: The performance of labor or work, as specified in the Request for Proposals and set forth in Exhibit A.
 - (q) State: The State of Connecticut, including DAS, the Client Agency and any office, department, board, council, commission, institution or other agency of the State.
 - (r) Termination: An end to the Contract effected pursuant to a right which the Contract creates, other than for a breach.
 - (s) Title: all ownership, title, licenses, rights and interest, including, but not limited to, perpetual use, of and to the Goods or Services.
2. Term of Contract; Contract Extension. The Contract will be in effect from February 1, 2011 through January 31, 2016. The parties may extend this Contract, prior to Termination, Expiration or Cancellation, one or more times for a combined total period not to exceed the complete length of the original term, but only in accordance with the section in this Contract concerning Contract Amendments.
 3. Description of Goods or Services. The Contractor shall perform as set forth in Exhibit A. For purposes of this Contract, to perform and the performance in Exhibit A is referred to as “Perform” and the “Performance.”
 4. Price Schedule, Payment Terms and Billing, and Price Adjustments.
 - (a) Price Schedule: Price Schedule under this Contract is set forth in Exhibit B.
 - (b) Payment Terms and Billing: Payment shall be made only after the Client Agency receives and accepts the Goods or Services and after it receives a properly completed invoice. Unless otherwise specified in the Contract, payment for all accepted Goods or Services shall be due within forty-five (45) days after acceptance of the Goods or Services, or thirty (30) days if the Contractor is a certified small contractor or minority business enterprise as defined in Conn. Gen. Stat. § 4a-60g. The Contractor shall submit an invoice to the Client Agency for the Performance. The invoice shall include detailed information for Goods or Services, delivered and performed, as applicable, and accepted. Any late payment charges shall be calculated in accordance with the Connecticut General Statutes.

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- (c) If applicable to and during the term of this Contract, the Price Schedule will be adjusted to reflect any increase in the minimum wage rate that may occur, as mandated by state law. The Price Schedule will not be adjusted until the Contractor provides documentation, in the form of certified payroll or other documentation acceptable to the State, substantiating the increase in minimum wage rate.
- (d) Price Adjustments: Prices for the Goods or Services listed in Exhibit B shall remain unchanged for twelve (12) months following the effective date of the Contract. The Contractor shall have the right to request a price adjustment only during the thirty (30) days immediately preceding the annual anniversary dates of the effective date of the Contract during the term of the Contract. During this thirty (30) day period, the Contractor may submit a request in writing to DAS for a price adjustment that is consistent with and relative to price changes originating with and compelled by manufacturer and/or market trends and which changes are outside of the Contractor's control. The Contractor must fully document its request, attaching to the request, without limitation, such manufacturer and market data, as support the requested adjustment. DAS may, in its sole discretion, approve or disapprove the requested adjustment, in whole or in part. Any approved adjustment shall be final and shall remain unchanged until the next annual anniversary date of the effective date of the Contract.

The Contractor shall submit all requests in accordance with Section #35. Notice. A request made to the Client Agency shall not be valid and the parties shall treat it as if the Contractor had not made the request at all. A request made to the Client Agency shall not be considered timely and shall not toll or extend the running of the thirty (30) days. The right of the Contractor to request a particular price adjustment shall lapse upon the expiration of the applicable thirty (30) days. If the Contractor fails to make a timely request, then the price shall remain unchanged from the previous year and shall continue through the next succeeding twelve (12) months and until the second annual anniversary of the effective date of the Contract, If approved, price adjustments shall become effective ten (10) days after the date of the approval. The Contractor shall honor any purchase orders issued prior to the effective date of the approval at the price in effect at the time of the issuance of the purchase order.

5. Rejected Items; Abandonment.

- (a) The Contractor may deliver, cause to be delivered, or, in any other way, bring or cause to be brought, to any State premises or other destination, Goods, as samples or otherwise, and other supplies, materials, equipment or other tangible personal property. The State may, by written notice and in accordance with the terms and conditions of the Contract, direct the Contractor to remove any or all such Goods (“the “Rejected Goods”) and any or all other supplies, materials, equipment or other tangible personal property (collectively, the “Contractor Property”) from and out of State premises and any other location which the State manages, leases or controls. The Contractor shall remove the Rejected Goods and the Contractor Property in accordance with the terms and conditions of the written notice. Failure to remove the Rejected Goods or the Contractor Property in accordance with the terms and conditions of the written notice shall mean, for itself and all Contractor Parties and Proposer Parties, that:
 - (1) they have voluntarily, intentionally, unconditionally, unequivocally and absolutely abandoned and left unclaimed the Rejected Goods and Contractor Property and relinquished all ownership, title, licenses, rights, possession and interest of, in and to (collectively, “Title”) the Rejected Goods and Contractor Property with the specific and express intent of (A) terminating all of their Title to the Rejected Goods and Contractor Property, (B) vesting Title to the Rejected Goods and Contractor Property in the State of Connecticut and (C) not ever reclaiming Title or any future rights of any type in and to the Rejected Goods and Contractor Property;

- (2) there is no ignorance, inadvertence or unawareness to mitigate against the intent to abandon the Rejected Goods or Contractor Property;
 - (3) they vest authority, without any further act required on their part or the State's part, in the Client Agency and the State to use or dispose of the Rejected Goods and Contractor Property, in the State's sole discretion, as if the Rejected Goods and Contractor Property were the State's own property and in accordance with law, without incurring any liability or obligation to the Contractor or any other party;
 - (4) if the State incurs any costs or expenses in connection with disposing of the Rejected Goods and Contractor Property, including, but not limited to, advertising, moving or storing the Rejected Goods and Contractor Property, auction and other activities, the State shall invoice the Contractor for all such cost and expenses and the Contractor shall reimburse the State no later than thirty (30) days after the date of invoice; and
 - (5) they do remise, release and forever discharge the State and its employees, departments, commissions, boards, bureaus, agencies, instrumentalities or political subdivisions and their respective successors, heirs, executors and assigns (collectively, the "State and Its Agents") of and from all Claims which they and their respective successors or assigns, jointly or severally, ever had, now have or will have against the State and Its Agents arising from the use or disposition of the Rejected Goods and Contractor Property.
- (b) The Contractor shall secure from each Contractor Party or Proposer Party, as appropriate, such document or instrument as necessary or appropriate as will vest in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to give full effect to all of the terms and conditions of this section. The Contractor shall provide, no later than fifteen (15) days after receiving a request from the State, such information as the State may require to evidence, in the State's sole determination, compliance with this section.
6. Order and Delivery. The Contract shall bind the Contractor to furnish and deliver the Goods or Services in accordance with Exhibit A and at the prices set forth in Exhibit B. Subject to the sections in this Contract concerning Force Majeure, Termination, Cancellation Expiration and Open Market Purchases, the Contract shall bind the Client Agency to order the Goods or Services from the Contractor, and to pay for the accepted Goods or Services in accordance with Exhibit B.
 7. Contract Amendments. No amendment to or modification or other alteration of the Contract, including extensions, shall be valid or binding upon the parties unless made in writing, signed by the parties and, if applicable, approved by the Connecticut Attorney General.
 8. Assignment. The Contractor shall not assign any of its rights or obligations under the Contract, voluntarily or otherwise, in any manner without the prior written consent of DAS. DAS may void any purported assignment in violation of this section and declare the Contractor in breach of Contract. Any Cancellation by DAS for a breach is without prejudice to DAS's or the State's rights or possible Claims.
 9. Termination, Cancellation and Expiration.
 - (a) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may Terminate the Contract whenever DAS makes a written determination that such Termination is in the best interests of the State. DAS shall notify the Contractor in writing of Termination pursuant to this section, which notice shall specify the effective date of Termination and the extent to which the Contractor must complete Performance under the

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Contract prior to such date. The Contractor is not entitled to receive and the State is not obligated to tender to the Contractor any payments or reimbursements for anticipated or lost profits.

- (b) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may, after making a written determination that the Contractor has breached the Contract, Cancel the Contract in accordance with the provisions in the Breach section of this Contract.
- (c) DAS shall send the notice of Termination or Cancellation via certified mail, return receipt requested, to the Contractor at the most current address which the Contractor has furnished to DAS for purposes of correspondence, or by hand delivery. Upon receiving such notice from DAS, the Contractor shall immediately discontinue all services affected in accordance with the notice, undertake all commercially reasonable efforts to mitigate any losses or damages, and deliver to the Client Agency all Records. The Records are deemed to be the property of the Client Agency and the Contractor shall deliver them to the Client Agency no later than thirty (30) days after the Termination, Cancellation or Expiration of the Contract or fifteen (15) days after the Contractor receives a written request from DAS for the Records. The Contractor shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, ASCII or .TXT.
- (d) Upon receipt of a written notice of Termination or Cancellation from DAS, the Contractor shall cease operations as directed by DAS in the notice, and take all actions that are necessary or appropriate, or that DAS may reasonably direct, for the protection and preservation of the Goods and any other property. Except for any work which DAS directs the Contractor to Perform in the notice prior to the effective date of Termination or Cancellation, and except as otherwise provided in the notice, the Contractor shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments.
- (e) To the extent that the Client Agency has issued a purchase order prior to the notice of Termination and the Contractor has begun Performance against that purchase order in good faith, the Client Agency shall, within forty-five (45) days of having received an invoice from the Contractor for such Performance, pay or reimburse the Contractor for its Performance rendered and accepted by the Client Agency in accordance with Exhibit A. In addition, the Client Agency shall also pay or reimburse the Contractor for all actual and reasonable costs incurred after Termination in completing those portions of the Performance which the notice required the Contractor to complete. Upon and as requested by the Client Agency or DAS and after consent of the Contractor's subcontractors, if any, and if their consent is required, the Contractor shall (1) assign to the Client Agency, or any replacement contractor which the Client Agency or DAS designates, all subcontracts, purchase orders and other commitments, (2) deliver to the Client Agency all Records and other information pertaining to its Performance, and (3) remove from State premises, whether leased or owned, all such equipment, waste material and rubbish related to its Performance, all as the Client Agency or DAS may request.
- (f) For breach or violation of any of the provisions in the section concerning Representations and Warranties, DAS may Cancel the Contract in accordance with its terms and revoke any consents to assignments given as if the assignments had never been requested or consented to, without liability to the Contractor or Contractor Parties or any third party.
- (g) Upon Termination, Cancellation or Expiration of the Contract, all rights and obligations shall be null and void, so that no party shall have any further rights or obligations to any other party, except with respect to the sections which survive Termination, Cancellation or Expiration of the Contract. All representations, warranties, agreements and rights of the parties under the Contract shall survive such Termination, Cancellation or Expiration to the

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extent not otherwise limited in the Contract and without each one of them having to be specifically mentioned in the Contract.

(h) Termination or Cancellation of the Contract pursuant to this section shall not be deemed to be a breach of contract by DAS.

10. Cost Modifications. The parties may agree to a reduction in the cost of the Contract at any time during which the Contract is in effect. Without intending to impose a limitation on the nature of the reduction, the reduction may be to hourly, staffing or unit costs, the total cost of the Contract or the reduction may take such other form as the State deems to be necessary or appropriate.

11. Breach. If either party breaches the Contract in any respect, the non-breaching party shall provide written notice of such breach to the breaching party and afford the breaching party an opportunity to cure the breach within ten (10) days from the date that the breaching party receives such notice. Any other time provided for in the notice shall trump such ten (10) days. Such right to cure period shall be extended if the non-breaching party is satisfied that the breaching party is making a good faith effort to cure but the nature of the breach is such that it cannot be cured within the right to cure period. The notice may include an effective Contract Cancellation date if the breach is not cured by the stated date and, unless otherwise modified by the non-breaching party in writing prior to the Cancellation date, no further action shall be required of any party to effect the Cancellation as of the stated date. If the notice does not set forth an effective Contract Cancellation date, then the non-breaching party may Cancel the Contract by giving the breaching party no less than twenty four (24) hours' prior written notice. If DAS believes that the Contractor has not performed according to the Contract, the Client Agency may withhold payment in whole or in part pending resolution of the Performance issue, provided that DAS notifies the Contractor in writing prior to the date that the payment would have been due in accordance with Exhibit B.

12. Waiver.

(a) No waiver of any breach of the Contract shall be interpreted or deemed to be a waiver of any other or subsequent breach. All remedies afforded in the Contract shall be taken and construed as cumulative, that is, in addition to every other remedy provided in the Contract or at law or in equity.

(b) A party's failure to insist on strict performance of any provision of the Contract shall only be deemed to be a waiver of rights and remedies concerning that specific instance of Performance and shall not be deemed to be a waiver of any subsequent rights, remedies or breach.

13. Open Market Purchases. Except to the extent that the Contractor is performing within a right to cure period, failure of the Contractor to Perform within the time specified in the Contract, or failure to replace rejected or substandard Goods or fulfill unperformed Services when so requested and as the Contract provides or allows, constitutes a breach of the Contract and as a remedy for such breach, such failure shall constitute authority for DAS, if it deems it to be necessary or appropriate in its sole discretion, to Cancel the Contract and/or to purchase on the open market, Goods or Services to replace those which have been rejected, not delivered, or not performed. The Client Agency shall invoice the Contractor for all such purchases to the extent that they exceed the costs and expenses in Exhibit B and the Contractor shall pay the Client Agency's invoice immediately after receiving the invoice. If DAS does not Cancel the Contract, the Client Agency will deduct such open market purchases from the Contract quantities. However, if the Client Agency deems it to be in the best interest of the State, the Client Agency may accept and use the Goods or Services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Client Agency.

14. Purchase Orders.

- (a) The Contract itself is not an authorization for the Contractor to ship Goods or begin Performance in any way. The Contractor may begin Performance only after it has received a duly issued purchase order against the Contract for Performance.
- (b) The Client Agency shall issue a purchase order against the Contract directly to the Contractor and to no other party.
- (c) All purchase orders shall be in written or electronic form, bear the Contract number (if any) and comply with all other State and Client Agency requirements, particularly the Client Agency's requirements concerning procurement. Purchase orders issued in compliance with such requirements shall be deemed to be duly issued.
- (d) A Contractor making delivery without a duly issued purchase order in accordance with this section does so at the Contractor's own risk.
- (e) The Client Agency may, in its sole discretion, deliver to the Contractor any or all duly issued purchase orders via electronic means only, such that the Client Agency shall not have any additional obligation to deliver to the Contractor a "hard copy" of the purchase order or a copy bearing any hand-written signature or other "original" marking.

15. Indemnification.

- (a) The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or Contractor Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Proposal or any Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance of the Contract.
- (b) The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any Contractor Parties. The State shall give the Contractor reasonable notice of any such Claims.
- (c) The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the Claims.
- (d) The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall name the State as an additional insured on the policy and shall provide a Certificate of Insurance to DAS, except that the Contractor shall not provide a copy to DAS if the Client Agency is the State Department of Transportation, prior to the effective date of the Contract. The

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Contractor shall not begin Performance until the delivery of the Certificate of Insurance to DAS. Upon request of the Client Agency, the Contractor shall provide a Certificate of Insurance to the Client Agency.

- (e) The rights provided in this section for the benefit of the State shall encompass the recovery of attorneys' and other professionals' fees expended in pursuing a Claim against a third party.
- (f) This section shall survive the Termination, Cancellation or Expiration of the Contract, and shall not be limited by reason of any insurance coverage.

16. Forum and Choice of Law. The Contract shall be deemed to have been made in the City of Hartford, State of Connecticut. Both Parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

17. Contractor Guaranties. Contractor shall:

- (a) Perform fully under the Contract;
- (b) Guarantee the Goods or Services against defective material or workmanship and to repair any damage or marring occasioned in transit or, at the Client Agency's option, replace them;
- (c) Furnish adequate protection from damage for all work and to repair damage of any kind, for which its workers are responsible, to the premises, Goods, the Contractor's work or that of Contractor Parties;
- (d) With respect to the provision of Services, pay for all permits, licenses and fees and give all required or appropriate notices;
- (e) Adhere to all Contractual provisions ensuring the confidentiality of Records that the Contractor has access to and are exempt from disclosure under the State's Freedom of Information Act or other applicable law; and
- (f) Neither disclaim, exclude nor modify the implied warranties of fitness for a particular purpose or of merchantability.

18. Implied Warranties. DAS does not disclaim, exclude or modify the implied warranty of fitness for a particular purpose or the warranty of merchantability.

19. Goods, Standards and Appurtenances. Any Goods delivered must be standard new Goods, latest model, except as otherwise specifically stated in the Contract. Remanufactured, refurbished or reconditioned equipment may be accepted but only to the extent allowed under the Contract. Where the Contract does not specifically list or describe any part or nominal appurtenances of equipment for the Goods, it shall be understood that the Contractor shall deliver such parts and appurtenances as are usually provided with the manufacturer's stock model.

20. Delivery.

- (a) Delivery shall be made as ordered and in accordance with the Contract. Unless otherwise specified in the Contract, delivery shall be to a loading dock or receiving platform. The Contractor or Contractor's shipping designee shall be responsible for removal of Goods from the carrier and placement on the Client Agency loading dock or receiving platform. The receiving personnel of the Client Agency are not required to assist in this process. The decision of DAS as to reasonable compliance with delivery terms shall be final and binding. The burden of proof of proper receipt of the order shall rest with the Contractor.
- (b) In order for the time of delivery to be extended, the Client Agency must first approve a request for extension from the time specified in the Contract, such extension applying only to the particular item or shipment.
- (c) Goods shall be securely and properly packed for shipment, according to accepted standard commercial practice, without extra charge for packing cases, baling or sacks. The containers shall remain the property of the Client Agency unless otherwise stated in the Proposal.
- (d) All risk of loss and damage to the Goods transfers to the Client Agency upon Title vesting in the Client Agency.

21. Goods Inspection. The Client Agency shall determine the manner and prescribe the inspection of all Goods and the tests of all samples submitted to determine whether they comply with all of the specifications in the Contract. If any Goods fail in any way to meet the specifications in the Contract, the Client Agency may, in its sole discretion, either reject it and owe nothing or accept it and pay for it on an adjusted price basis, depending on the degree to which the Goods meet the specifications. Any decision pertaining to any such failure or rejection shall be final and binding.

22. Setoff. In addition to all other remedies that DAS may have, the State, in its sole discretion, may setoff (1) any costs or expenses that the State incurs resulting from the Contractor's unexcused nonperformance under the Contract and under any other agreement or arrangement that the Contractor has with the State and (2) any other amounts that are due or may become due from the State to the Contractor, against amounts otherwise due or that may become due to the Contractor under the Contract, or under any other agreement or arrangement that the Contractor has with the State. The State's right of setoff shall not be deemed to be the State's exclusive remedy for the Contractor's or Contractor Parties' breach of the Contract, all of which shall survive any setoffs by the State.

23. Force Majeure. The State and the Contractor shall not be excused from their obligation to Perform in accordance with the Contract except in the case of Force Majeure events and as otherwise provided for in the Contract. In the case of any such exception, the nonperforming party shall give immediate written notice to the other, explaining the cause and probable duration of any such nonperformance.

24. Advertising. The Contractor shall not refer to sales to the State for advertising or promotional purposes, including, but not limited to, posting any material or data on the Internet, without DAS's prior written approval.

25. Americans With Disabilities Act. The Contractor shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Contract. DAS may Cancel the Contract if the Contractor fails to comply with the Act.

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26. Representations and Warranties. The Contractor, and the Proposer, as appropriate, represent and warrant to DAS for itself, Contractor Parties and Proposer Parties, as appropriate, that:

- (a) if they are entities, they are duly and validly existing under the laws of their respective states of organization and authorized to conduct business in the State of Connecticut in the manner contemplated by the Contract. Further, as appropriate, they have taken all necessary action to authorize the execution, delivery and Performance of the Proposal and the Contract and have the power and authority to execute, deliver and Perform their obligations under the Contract;
- (b) they will comply with all applicable State and Federal laws and municipal ordinances in satisfying their obligations to the State under and pursuant to the Contract, including, but not limited to (1) Connecticut General Statutes Title 1, Chapter 10, concerning the State's Codes of Ethics and (2) Title 4a concerning State purchasing, including, but not limited to 22a-194a concerning the use of polystyrene foam;
- (c) the execution, delivery and Performance of the Contract will not violate, be in conflict with, result in a breach of or constitute (with or without due notice and/or lapse of time) a default under any of the following, as applicable: (1) any provision of law; (2) any order of any court or the State; or (3) any indenture, agreement, document or other instrument to which it is a party or by which it may be bound;
- (d) they are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any governmental entity;
- (e) as applicable, they have not, within the three years preceding the Contract, in any of their current or former jobs, been convicted of, or had a civil judgment rendered against them or against any person who would Perform under the Contract, for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a transaction or contract with any governmental entity. This includes, but is not limited to, violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (f) they are not presently indicted for or otherwise criminally or civilly charged by any governmental entity with commission of any of the offenses listed above;
- (g) they have not within the three years preceding the Contract had one or more contracts with any governmental entity Cancelled;
- (h) they have not employed or retained any entity or person, other than a bona fide employee working solely for them, to solicit or secure the Contract and that they have not paid or agreed to pay any entity or person, other than a bona fide employee working solely for them, any fee, commission, percentage, brokerage fee, gifts, or any other consideration contingent upon or resulting from the award or making of the Contract or any assignments made in accordance with the terms of the Contract;
- (i) to the best of their knowledge, there are no Claims involving the Proposer, Proposer Parties, Contractor or Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract;
- (j) they shall disclose, to the best of their knowledge, to DAS in writing any Claims involving them that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully

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under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. For purposes of the Contractor's obligation to disclose any Claims to DAS, the ten (10) Days in the section of this Contract concerning Disclosure of Contractor Parties Litigation shall run consecutively with the ten (10) Days provided for in this representation and warranty;

- (k) their participation in the Request for Proposals process is not a conflict of interest or a breach of ethics under the provisions of Title 1, Chapter 10 of the Connecticut General Statutes concerning the State's Code of Ethics;
- (l) the Proposal was not made in connection or concert with any other person, entity or Proposer, including any affiliate (as defined in the Tangible Personal Property section of this Contract) of the Proposer, submitting a Proposal for the same Goods or Services, and is in all respects fair and without collusion or fraud;
- (m) they are able to Perform under the Contract using their own resources or the resources of a party who is not a Proposer;
- (n) the Contractor shall obtain in a written contract all of the representations and warranties in this section from any Contractor Parties and to require that provision to be included in any contracts and purchase orders with Contractor Parties;
- (o) they have paid all applicable workers' compensation second injury fund assessments concerning all previous work done in Connecticut;
- (p) they have a record of compliance with Occupational Health and Safety Administration regulations without any unabated, willful or serious violations;
- (q) they owe no unemployment compensation contributions;
- (r) they are not delinquent in the payment of any taxes owed, or, that they have filed a sales tax security bond, and they have, if and as applicable, filed for motor carrier road tax stickers and have paid all outstanding road taxes;
- (s) all of their vehicles have current registrations and, unless such vehicles are no longer in service, they shall not allow any such registrations to lapse;
- (t) each Contractor Party has vested in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to ensure full compliance with and Performance in accordance with all of the terms and conditions of the Contract and that all appropriate parties shall also provide to DAS, no later than fifteen (15) days after receiving a request from DAS, such information as DAS may require to evidence, in DAS's sole determination, compliance with this section;
- (u) except to the extent modified or abrogated in the Contract, all Title shall pass to the Client Agency upon complete installation, testing and acceptance of the Goods or Services and payment by the Client Agency;
- (v) if either party Terminates or Cancels the Contract, for any reason, they shall relinquish to the Client Agency all Title to the Goods delivered, accepted and paid for (except to the extent any invoiced amount is disputed) by the Client Agency;
- (w) with regard to third party products provided with the Goods, they shall transfer all licenses which they are permitted to transfer in accordance with the applicable third party license;

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- (x) they shall not copyright, register, distribute or claim any rights in or to the Goods after the effective date of the Contract without DAS's prior written consent;
- (y) they either own or have the authority to use all Title of and to the Goods, and that such Title is not the subject of any encumbrances, liens or claims of ownership by any third party;
- (z) the Goods do not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (aa) the Client Agency's use of any Goods shall not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (bb) if they procure any Goods, they shall sub-license such Goods and that the Client Agency shall be afforded the full benefits of any manufacturer or subcontractor licenses for the use of the Goods; and
- (cc) they shall assign or otherwise transfer to the Client Agency, or afford the Client Agency the full benefits of any manufacturer's warranty for the Goods, to the extent that such warranties are assignable or otherwise transferable to the Client Agency.

27. Representations and Warranties Concerning Motor Vehicles. If in the course of Performance or in any other way related to the Contract the Contractor at any time uses or operates "motor vehicles," as that term is defined by Conn. Gen. Stat. §14-1(53) (including, but not limited to such services as snow plowing, sanding, hauling or delivery of materials, freight or merchandise, or the transportation of passengers), the Contractor, and the Proposer, as appropriate, represent and warrant for itself, the Contractor Parties and Proposer Parties, as appropriate, that:

- (a) It is the owner of record or lessee of record of each such motor vehicle used in the Performance of the Contract, and each such motor vehicle is duly registered with the Connecticut Department of Motor Vehicles ("ConnDMV") in accordance with the provisions of Chapter 246 of the Connecticut General Statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV, for any reason or cause. If such motor vehicle is not registered with ConnDMV, then it shall be duly registered with another state or commonwealth in accordance with such other state's or commonwealth's applicable statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by such other state or commonwealth for any reason or cause.
- (b) Each such motor vehicle shall be fully insured in accordance with the provisions of Sections 14-12b, 14-112 and 38a-371 of the Connecticut General Statutes, as amended, in the amounts required by the said sections or in such higher amounts as have been specified by ConnDMV as a condition for the award of the Contract, or in accordance with all substantially similar provisions imposed by the law of the jurisdiction where the motor vehicle is registered.
- (c) Each Contractor Party who uses or operates a motor vehicle at any time in the Performance of the Contract shall have and maintain a motor vehicle operator's license or commercial driver's license of the appropriate class for the motor vehicle being used or operated. Each such license shall bear the endorsement or endorsements required by the provisions of Section 14-36a of the Connecticut General Statutes, as amended, to operate such motor vehicle, or required by substantially similar provisions imposed by the law of another jurisdiction in which the operator is licensed to operate such motor vehicle. The license shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV or such other jurisdiction for any reason or cause.

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- (d) Each motor vehicle shall be in full compliance with all of the terms and conditions of all provisions of the Connecticut General Statutes and regulations, or those of the jurisdiction where the motor vehicle is registered, pertaining to the mechanical condition, equipment, marking and operation of motor vehicles of such type, class and weight, including, but not limited to, requirements for motor vehicles having a gross vehicle weight rating of 18,000 pounds or more or motor vehicles otherwise described by the provisions of Conn. Gen. Stat. § 14-163c(a) and all applicable provisions of the Federal Motor Carrier Safety Regulations, as set forth in Title 49, Parts 382 to 399, inclusive, of the Code of Federal Regulations.
28. Disclosure of Contractor Parties Litigation. The Contractor shall require that all Contractor Parties, as appropriate, disclose to the Contractor, to the best of their knowledge, any Claims involving the Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. Disclosure shall be in writing.
29. Entirety of Contract. The Contract is the entire agreement between the parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the parties, whether written or oral. The Contract has been entered into after full investigation, neither party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Contract.
30. Exhibits. All exhibits referred to in and attached to this Contract are incorporated in this Contract by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.
31. Executive Orders. The Contract is subject to the provisions of Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms, Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17th, 2006, concerning procurement of cleaning products and services, Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.
32. Non-discrimination. References in this section to "contract" shall mean this Contract and references to "contractor" shall mean the Contractor.
- (a) The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes:
- (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut. The contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it

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- is shown by such contractor that such disability prevents performance of the work involved;
- (2) the contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;
 - (3) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
 - (4) the contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f;
 - (5) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56.
- (b) If the contract is a public works contract, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.
- (c) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons:
- (1) Who are active in the daily affairs of the enterprise,
 - (2) who have the power to direct the management and policies of the enterprise and
 - (3) who are members of a minority, as such term is defined in subsection (a) of section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.
- (d) Determination of the contractor's good faith efforts shall include but shall not be limited to the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (e) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.
- (f) The contractor shall include the provisions of sections (a) and (b) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted

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by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(g) The following subsections are set forth here as required by section 4a-60a of the Connecticut General Statutes:

- (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation;
- (2) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
- (3) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56;
- (4) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor which relate to the provisions of this section and section 46a-56.

(h) The contractor shall include the provisions of section (g) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(i) For the purposes of this entire Non-Discrimination section, "contract" includes any extension or modification of the contract, "contractor" includes any successors or assigns of the contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders. For the purposes of this section, "contract" does not include a contract where each contractor is

1. a political subdivision of the state, including, but not limited to, a municipality,

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2. a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120,
 3. any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267,
 4. the federal government,
 5. a foreign government, or
 6. an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).
33. Tangible Personal Property. The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:
- (a) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
 - (b) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
 - (c) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
 - (d) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
 - (e) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of the Act.

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34. **Whistleblowing.** This Agreement is subject to the provisions of §4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Agreement. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.
35. **Notice.** All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Contract (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is placed in the U.S. mail, first class and postage pre-paid, return receipt requested or placed with a recognized, overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

If to DAS:

State of Connecticut, Department of Administrative Services
165 Capitol Ave, 5th Floor South
Hartford, CT 06106-1659
Attention: Paul Greco

If to the Contractor:

AAIS Corp.
802 Boston Post Rd.
West Haven, CT 06516
Attn. James Reilly

36. **Insurance.** Before commencing Performance, the Contractor shall obtain and maintain at its own cost and expense for the duration of the Contract, the following insurance as described in (a) through (h) below. Contractor shall assume any and all deductibles in the described insurance policies. The Contractor's insurers shall have no right of recovery or subrogation against the State and the described Contractor's insurance shall be primary coverage. Any failure to comply with the claim reporting provisions of the policy shall not affect coverage provided to the State.

(a) Reserved

- (b) Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. Coverage shall include, Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the

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general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit.

- (c) **Automobile Liability:** \$1,000,000 combined single limit per accident for bodily injury. Coverage extends to owned, hired and non-owned automobiles. If the vendor/contractor does not own an automobile, but one is used in the execution of the contract, then only hired and non-owned coverage is required. If a vehicle is not used in the execution of the contract then automobile coverage is not required.
- (d) **Workers' Compensation and Employers Liability:** Statutory coverage in compliance with the Compensation laws of the State of Connecticut. Coverage shall include Employer's Liability with minimum limits of \$100,000 each accident, \$500,000 Disease – Policy limit, \$100,000 each employee.
- (e) Reserved
- (f) **Umbrella Liability:** Excess/umbrella liability insurance may be included to meet minimum requirements. Umbrella coverage must indicate the existing underlying insurance coverage.
- (g) **Claims Made:** Not acceptable with the exception of Professional Liability when specified.
- (h) Reserved
- 37. **Headings.** The headings given to the sections in the Contract are inserted only for convenience and are in no way to be construed as part of the Contract or as a limitation of the scope of the particular section to which the heading refers.
- 38. **Number and Gender.** Whenever the context so requires, the plural or singular shall include each other and the use of any gender shall include all genders.
- 39. **Parties.** To the extent that any Contractor Party or Proposer Party is to participate or Perform in any way, directly or indirectly in connection with the Proposal or the Contract, any reference in the Request for Proposals and the Contract to "Contractor" or "Proposer" shall also be deemed to include "Contractor Parties" or "Proposer Parties," respectively, as if such reference had originally specifically included "Contractor Parties" or "Proposer Parties," since it is the parties' intent for the terms "Contractor Parties" and "Proposer Parties" to be vested with the same respective rights and obligations as the terms "Contractor" and "Proposer."
- 40. **Contractor Changes.** The Contractor shall notify DAS in writing no later than ten (10) Days from the effective date of any change in:
 - a) its certificate of incorporation or other organizational document;
 - b) more than a controlling interest in the ownership of the Contractor; or
 - c) the individual(s) in charge of the Performance.

This change shall not relieve the Contractor of any responsibility for the accuracy and completeness of the Performance. DAS, after receiving written notice by the Contractor of any such change, may require such agreements, releases and other instruments evidencing, to DAS's satisfaction, that any individuals retiring or otherwise separating from the Contractor have been compensated in full or that provision has been made for compensation in full, for all work performed under terms of the Contract. The Contractor shall deliver such documents to DAS in accordance with the terms of DAS's written request. DAS may also require, and the Contractor shall deliver, a financial statement showing that solvency of the

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Contractor is maintained. The death of any Contractor Party, as applicable, shall not release the Contractor from the obligation to Perform under the Contract; the surviving Contractor Parties, as appropriate, must continue to Perform under the Contract until Performance is fully completed.

41. Further Assurances. The parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other party which are not inconsistent with the provisions of this Contract and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Contract, in order to give full effect to the Contract and to carry out the intent of the Contract.
42. Audit and Inspection of Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents. Requests for any audit or inspection shall be in writing, at least ten (10) Days prior to the requested date. All audits and inspections shall be at the State's expense. The State may request an audit or inspection at any time during the Contract term and for three (3) years from Termination, Cancellation or Expiration of the Contract. The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.
43. Background Checks. The State may require that the Contractor and Contractor Parties undergo criminal background checks as provided for in the State of Connecticut Department of Public Safety Administration and Operations Manual or such other State document as governs procedures for background checks. The Contractor and Contractor Parties shall cooperate fully as necessary or reasonably requested with the State and its agents in connection with such background checks.
44. Continued Performance. The Contractor and Contractor Parties shall continue to Perform their obligations under the Contract while any dispute concerning the Contract is being resolved.
45. Working and Labor Synergies. The Contractor shall be responsible for maintaining a tranquil working relationship between the Contractor work force, the Contractor Parties and their work force, State employees, and any other contractors present at the work site. The Contractor shall quickly resolve all labor disputes which result from the Contractor's or Contractor Parties' presence at the work site, or other action under their control. Labor disputes shall not be deemed to be sufficient cause to allow the Contractor to make any claim for additional compensation for cost, expenses or any other loss or damage, nor shall those disputes be deemed to be sufficient reason to relieve the Contractor from any of its obligations under the Contract.
46. Contractor Responsibility.
 - (a) The Contractor shall be responsible for the entire Performance under the Contract regardless of whether the Contractor itself performs. The Contractor shall be the sole point of contact concerning the management of the Contract, including Performance and payment issues. The Contractor is solely and completely responsible for adherence by the Contractor Parties to all applicable provisions of the Contract.
 - (b) The Contractor shall exercise all reasonable care to avoid damage to the State's property or to property being made ready for the State's use, and to all property adjacent to any work site. The Contractor shall promptly report any damage, regardless of cause, to the State.

47. Severability. If any term or provision of the Contract or its application to any person, entity or circumstance shall, to any extent, be held to be invalid or unenforceable, the remainder of the Contract or the application of such term or provision shall not be affected as to persons, entities or circumstances other than those as to whom or to which it is held to be invalid or unenforceable. Each remaining term and provision of the Contract shall be valid and enforced to the fullest extent possible by law.
48. Confidential Information. The State will afford due regard to the Proposer's and Contractor's request for the protection of proprietary or confidential information which the State receives. However, all materials associated with the Proposal and the Contract are subject to the terms of the Connecticut Freedom of Information Act ("FOIA") and all corresponding rules, regulations and interpretations. In making such a request, the Proposer or Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the vendor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Proposer or Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract, especially including the Proposal, the Records and the specifications, conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Proposer or Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking said documentation as CONFIDENTIAL, DAS will endeavor to keep said information confidential to the extent permitted by law. DAS, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. The Contractor shall have the burden of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall DAS or the State have any liability for the disclosure of any documents or information in its possession which the State or DAS believes are required to be disclosed pursuant to the FOIA or other requirements of law.
49. Interpretation. The Contract contains numerous references to statutes and regulations. For purposes of interpretation, conflict resolution and otherwise, the content of those statutes and regulations shall govern over the content of the reference in the Contract to those statutes and regulations.
50. Cross-Default.
- (a) If the Contractor or Contractor Parties breach, default or in any way fail to Perform satisfactorily under the Contract, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat any such event as a breach, default or failure to perform under any or all other agreements or arrangements ("Other Agreements") that the Contractor or Contractor Parties have with DAS. Accordingly, DAS may then exercise at its sole option any and all of its rights or remedies provided for in the Contract or Other Agreements, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS, as if the Contractor or Contractor Parties had suffered a breach, default or failure to perform under the Other Agreements.
- (b) If the Contractor or Contractor Parties breach, default or in any way fail to perform satisfactorily under any or all Other Agreements with DAS or the State, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat

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any such event as a breach, default or failure to Perform under the Contract. Accordingly, the State may then exercise at its sole option any and all of its rights or remedies provided for in the Other Agreements or the Contract, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS or the State, as if the Contractor or Contractor Parties had suffered a breach, default or failure to Perform under the Contract.

51. Disclosure of Records. The Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this section, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.
52. Summary of State Ethics Laws. Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.
53. Sovereign Immunity. The parties acknowledge and agree that nothing in the Request for Proposals or the Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.
54. Time of the Essence. Time is of the essence with respect to all provisions of this Agreement that specify a time for performance; provided, however, that this provision shall not be construed to limit or deprive a party of the benefits of any grace or use period allowed in this Agreement.
55. Reserved
56. Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Ban. With regard to a State contract as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this submission in response to the State's solicitation expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising prospective state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See Exhibit C, SEEC Form 11.
57. Health Care Portability and Accountability Act of 1996 ("HIPAA").
 - (a) If the Contractor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business

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Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

- (b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and
- (c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter “Department”) is a “covered entity” as that term is defined in 45 C.F.R. § 160.103; and
- (d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of “individually identifiable health information,” as that term is defined in 45 C.F.R. § 160.103; and
- (e) The Contractor is a “business associate” of the Department, as that term is defined in 45 C.F.R. § 160.103; and
- (f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.
- (g) Definitions.
 - (1) “Breach” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1)).’
 - (2) “Business Associate” shall mean the Contractor.
 - (3) “Covered Entity” shall mean the Department of the State of Connecticut named on page 1 of this Contract.
 - (4) “Designated Record Set” shall have the same meaning as the term “designated record set” in 45 C.F.R. § 164.501.
 - (5) “Electronic Health Record” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5)).
 - (6) “Individual” shall have the same meaning as the term “individual” in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).
 - (7) “Privacy Rule” shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and part 164, subparts A and E.
 - (8) “Protected Health Information” or “PHI” shall have the same meaning as the term “protected health information” in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.
 - (9) “Required by Law” shall have the same meaning as the term “required by law” in 45 C.F.R. § 164.103.

- (10) “Secretary” shall mean the Secretary of the Department of Health and Human Services or his designee.
- (11) “More stringent” shall have the same meaning as the term “more stringent” in 45 C.F.R. § 160.202.
- (12) “This Section of the Contract” refers to the HIPAA Provisions stated herein, in their entirety.
- (13) “Security Incident” shall have the same meaning as the term “security incident” in 45 C.F.R. § 164.304.
- (14) “Security Rule” shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and part 164, subpart A and C.
- (15) “Unsecured protected health information” shall have the same meaning as the term as defined in § 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

- (1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.
- (2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.
- (3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.
- (4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.
- (5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.
- (6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.
- (7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.
- (8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

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- (9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.
- (10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees that at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.
- (13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.
- (14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.
- (15) Business Associate agrees that it shall not directly or indirectly receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations
- (16) Obligations in the Event of a Breach
 - (A) The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. § 17932(b) and the provisions of this section of the contract.
 - (B) Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of

HITECH (42 U.S.C. § 17932(g)). A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.

(C) The Business Associate agrees to include in the notification to the Covered Entity at least the following information:

1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.
2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).
3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.
4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.
5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and contact information for said official.

(D) Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

(E) Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

- (1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions.

- (A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.
- (B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.
- (C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

- (1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.
- (2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.
- (3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

- (1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.
- (2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

- (A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or
 - (B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or
 - (C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.
- (3) Effect of Termination.
- (A) Except as provided in (1)(2) above, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.
 - (B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

- (1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.
- (2) Amendment. The Parties agree to take such action as is necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.
- (3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.
- (4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.
- (5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.
- (6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's

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own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

- (7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

58. Encryption of Data.

- (a) Contractor and Contractor Parties, at its own expense, shall keep and maintain in an encrypted state any and all electronically stored data now or hereafter in its possession or control located on non-state owned or managed devices that the State, in accordance with its existing state policies classifies as confidential or restricted. The method of encryption shall be compliant with the State of Connecticut Enterprise Wide Technical Architecture (EWTA). This shall be a continuing obligation for compliance with the EWTA standard as it may be amended or supplemented from time to time.
- (b) In the event of a breach of security or loss of State data, the Contractor and Contractor Parties shall notify the Client Agency which owns the data, DAS, the Connecticut Department of Information Technology and the Connecticut Office of the Attorney General as soon as practical but no later than 24 hours after the discovery or reason to believe such breach or loss that such data has been compromised through breach or loss.

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IN WITNESS WHEREOF, the parties have executed this Contract by their duly authorized representatives with full knowledge of and agreement with its terms and conditions.

AAIS, Corp.

STATE OF CONNECTICUT
Department of Administrative Services

By: _____

By: _____

Maria Bannon
Print or Type Name

Carol Wilson
Print or Type Name

Title: Treasurer

Title: DAS Procurement Director

Date: _____

Date:

Contract 10PSX0238 Exhibit A

Asbestos, Lead, Mold, and Other Hazardous
Materials Abatement and Removal Services for
Department of Public Works, All Using State
Agencies and Political Sub Divisions, Schools and
Not for Profits

CT Department of Administrative Services



Scope of Services

This Contract is for Asbestos, Lead, Mold, and Other Hazardous Materials Abatement and Removal work detailed in Exhibit(s) A for a contract term of five (5) years.

It is understood that this contract is subject to statutory authorization and available funding. The State will only enter into contract with Contractor(s) who will be required to assume full responsibility for services provided by the contract. This contract is for the abatement of asbestos-containing materials, lead, mold, and other hazardous materials by persons who are knowledgeable, qualified and trained in the removal, treatment, handling and disposal of asbestos-containing material, lead, mold, and other hazardous materials and the subsequent cleaning of the affected environment. Certain services provided under these contracts may require firms and individuals to be certified or licensed by governmental or industry trade organizations.

- There may be situations in which services and equipment go beyond the actual requirements listed. In such situations the State may approve work, and accept and pay for the added services and equipment. Unit rates must be approved by the using agency prior to any additional work.
- Certain projects, depending on size, scope, and complexity, may be bid separately at the discretion of the using agency.

All work to be performed by the contractor shall comply with, as a minimum, the Connecticut State Building Code as adopted pursuant to CGS 29-252, as amended; and the Connecticut Fire Safety Code as adopted pursuant to CGS 29-292, as amended.

The year of the code governing the Contractors work shall be the current code which has been adopted as per the above Connecticut General Statutes on the start date of the project.

Product and/or Service Specifications

Service Specifications

Required Service Specifications can be found in Exhibits A-1, A-2, A-3, A-4, A-5 and A-6.

Pricing

Awarded pricing is found in Exhibit B-1, B-2, B-3 and Exhibit B-4

This is a firm fixed price contract. No additional markup will be allowed to perform any work listed in the Exhibit B proposal sheets with rental equipment, subcontracted labor, or materials under this contract. Markup for materials and outside services not listed will not exceed 10%.

The contractor shall not charge for equipment items not listed in the Proposal Schedule without prior written approval from the Using Agency and the CT DAS Procurement Services Representative.

Requests for approval of supplemental unit prices shall be made in writing to the Using Agency and the CT DAS Procurement Services Representative and shall be accompanied by such additional information as the Using Agency may require to enable evaluation of the contractor's request.

If applicable, the contractor(s) shall be required to pay for all permits, licenses, and fees, and to give all notices and comply with all laws, ordinances, rules and regulations of the State, city or town in which any required services are to be performed. The using Agency will reimburse the contractor for obtained permits or license costs provided that the contractor provide a receipt, proof and copy of the required permit or license to the DPW office designation referenced below or appropriate Using agency designation. No mark-up to these fees will be allowed.

Environmental Analyst, CT DPW Technical Services, 165 Capitol Ave., Hartford, CT 06106, Rm. # 275.

Price Schedule Exhibits B1, B2 and B3

Awarded Prices represent unit cost for commodities and/or services per unit of measure performed per project type. The rental rates for all equipment are to be computed at the job site only. Pricing will not include trip, travel time, delivery time charges, or any other miscellaneous charges pertaining to the rental of equipment.

The using agency's representatives will monitor the use of all labor and equipment. If the using agency's representatives determine that equipment is not being utilized, such equipment will not be paid for while remaining idle.

The using agency **will not pay** for tools of the trade which includes but are not limited to the following:

- reusable hand and small tools (e.g., screwdrivers, hammers, garden hoses)
- reusable protective clothing
- computer equipment and software including all costs relating to use of such equipment

- communication equipment, including but not limited to regular and cellular telephones, including all costs relating to the use of such equipment
- consumable supplies/equipment
- cost of routine cleaning of equipment
- monitoring equipment, e.g., PIDs and LEL/O2 Meters

Exhibit B-4

Utilized for item offering(s) other than scheduled items found on schedules B1, B2 & B3

Mandatory Extension to State, Government, Municipal or Not for Profit Entities

Awarded Contractors are required to offer and extend this contract (including same pricing, terms and conditions) to Political Sub-Divisions of the State (Towns and Municipalities), Schools, and Not-For-Profit Organizations.

When a Political Sub-Division, School, and/or Not-For-Profit Organization utilizes this contract all references to the “State” are hereby replaced with the Name of the Using Sub-Division, School, or the name of the Not-For-Profit Organization.

Motor Carrier Safety Review

If the performance of the Contract requires the use and operation of any commercial motor vehicle, as defined in section 14-1 of the Connecticut General Statutes, or other motor vehicle with a gross vehicle weight rating (GVWR) of 18,000 pounds or more, each proposer will be the subject of an evaluation, conducted by the Connecticut Department of Motor Vehicles (CTDMV) of its motor carrier safety fitness. The primary factor in the evaluation is the current SAFESTAT score, calculated by the U.S. Federal Motor Carrier Safety Administration (FMCSA) in accordance with the provisions of Title 49, Section 385.1, et seq., of the Code of Federal Regulations.

To be deemed qualified, the proposer must have an overall SAFESTAT category rating of “D” or better, on the date of evaluation. In addition, the proposer’s driver and vehicle out-of-service rates will be consulted. The rates are determined by the number of out-of-service violations cited to the motor carrier in the course of all official, reported vehicle and/or driver inspections conducted during the preceding thirty (30) months. To be deemed qualified, the proposer must not have either a vehicle or driver out-of-service rate, by percentage of out-of-service violations per the total number of inspections reported, that is more than twice the national average. In addition, the proposer must have a current federal safety management practices rating of “Satisfactory,” as defined in 49 CFR section 385.3, as amended.

Further information concerning the motor carrier safety evaluation, to which a proposer is subject, may be obtained from CTDMV at:

<http://www.ct.gov/dmv/cwp/view.asp?a=798&q=413206&dmvPNavCtr=#49068>.

All official inspection and rating data that is used in the performance of each evaluation is available to any motor carrier through the federal SAFESTAT website, at <http://www.ai.volpe.dot.gov/>.

Quantities and/or Usages

Quantities and/or usages only and in no way represent a commitment and/or intent to purchase. Actual quantities may vary and will be identified on individual purchase orders issued by the requesting Agency.

Subcontractors

Proposer(s) must provide the majority of the services described in the specifications.

The Using Agency must approve any and all subcontractors utilized by the successful proposer prior to any such subcontractor commencing any work. Proposers acknowledge by the act of submitting a proposal that any work provided under the contract is work conducted on behalf of the State and that the Commissioner of the Using Agency or his/her designee may communicate directly with any subcontractor as the State deems to be necessary or appropriate. It is also understood that the successful proposer shall be responsible for all payment of fees charged by the subcontractor(s). A performance evaluation of any subcontractor shall be provided promptly by the successful proposer to the Using Agency upon request.

Unless otherwise directed by the Using Agency, the contractor shall furnish a minimum of three quotes for goods or subcontracted services having a value in excess of ten thousand dollars (\$10,000). Subcontractor markup shall not exceed 10%.

The Contractor(s) shall be responsible for all work performed on any project, all work performed by his subcontractors, and the performance of all equipment installed. In addition, any work done or materials used without inspection by an agency representative may be ordered exposed for examination and testing, and restored at the Contractor's expense. If found unacceptable, the work shall be removed and replaced at the Contractor's expense. The Contractor(s) is responsible for all work, equipment, and materials for any of their subcontractors.

Whenever the contractor(s) intends to purchase goods or services from a subcontractor or supplier (at any tier) in which the contractor(s) has a financial interest, the contractor(s) shall inform the Using Agency of the nature and extent of his interest in advance in writing. The Using Agency shall have the right to accept or reject such subcontractor or supplier as it deems appropriate.

Contract Period

The contract shall be in effect for a period of five (5) years.

The State reserves the right to extend a subsequent contract for a period or periods of up to the full original contract term or parts thereof.

Extensions will be considered based upon the performance of the Contractor and the amount of work in progress at the end of the initial contract term. In the event the contract period expires prior to completion of any on-going projects, the State will require the Contractor to complete these projects as dictated by the purchase order issued by the using agency.

Change of address

In the event the contractor moves or updates contact information, it is the responsibility of the contractor to advise Procurement Services of such changes in writing. The State will not be held responsible for payments or purchase orders delayed due to the lack of routing caused by the lack of notification on the contractor's part. Change of address or telephone updates must be forwarded to: Department of Administrative Services, Procurement Services, 165 Capitol Avenue, Hartford, CT 06106.

Contract Use

No work shall be performed by an awarded contractor prior to the issuance of a duly authorized purchase order by the Using Agency.

Agency Implementation

The scope of this contract includes services on a standard or specialized basis. The contract user will select a contractor according to the procedures set forth below.

Standard Contract Use

The contract user will request a work plan and cost estimate based on awarded rates for required services from all awarded contractors. Contractors will then be required to submit a work plan and cost estimate that will accomplish the work task requested by the contract user. The contract user will evaluate each of the proposals and authorize the selected contractor to proceed. The contract user may provide comments or other conditions to revise the selected contractor's work plan.

Specialized Contract Use

The contract user will request a detailed work plan and cost estimate from a specific contractor deemed to be most qualified and consistent to the initial selection of the award. Following evaluation of submitted plan(s) the State may select a contractor determined by factors that include special expertise, past performance, project knowledge, time sensitivity, or other factors determined by the State.

In both the Standard and Specialized use of the contract the Using Agency will select the contractor with the most advantageous, responsive, and lowest project cost based on review of all work plans and cost estimates.

Purchase Orders

Purchase orders will be issued by the contract user for the services related to this Contract. Contractors are cautioned not to perform services without receiving a purchase order number. The contractor is not guaranteed any work by the issuance of the contract or purchase order. The State shall pay only for services requested and performed to the satisfaction of the State invoiced correctly under a valid purchase order.

Prevailing Wage Regulations:

Contractors must include a Contractors' Wage Certification Form when returning their bid submission. This form certifies that they are willing to pay wages in accordance with the current wages and policies established by the Connecticut Labor Department, OR Federal Labor Department. Prevailing wage shall be paid as follows:

Federally Funded Work: Any purchase order issued and funded by federal funds shall be paid in accordance with Federal Prevailing Wage Scales. This will be designated on the purchase order and will be detailed at the pre-construction meeting.

State Funded Work: State funded purchase orders exceeding \$100,000.00 (initial purchase order amount) shall be paid in accordance with State Prevailing Wage Scales. State funded purchase orders below \$100,000.00 (initial purchase order amount) shall be paid in accordance with Non-Prevailing Wage Scales.

In the case where both sets of wage rates are applicable, the higher rate shall prevail.

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the abatement of asbestos-containing materials by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site at all times and an Asbestos Abatement Site Supervisor during asbestos abatement work. This person must comply with applicable Federal, State and Local regulations that mandate work practices, and be capable of performing the work of this contract.
- B. The Asbestos Contractor shall be licensed by the State of Connecticut in accordance with State of Connecticut Regulations, Sections 20-440-1 through 9 and 20-441. Should any portion of the work be subcontracted, the subcontractor must also be licensed in accordance with these regulations. Site supervisors and workers shall be certified in accordance with Sections 20-437 and 20-438 of the Connecticut General Statutes and Section 20-440-5 of the Regulations of Connecticut State Agencies. The licensing and certification requirements are available from the Environmental Health Services Division, Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- C. The Owner will retain the services of a Project Monitor for protection of its interests and those using the building. Abatement monitoring will be conducted as deemed necessary.
- D. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- E. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- F. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. Accessible - A space easily accessed, and which can be entered or seen without demolition.
- B. Agency - The authoritative force, usually at the state level, or their representative.
- C. AHERA – Asbestos Hazard Emergency Response Act - U. S. EPA regulation 40 CFR Part 763 under Section 203 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2643. This rule mandates inspections, accreditation of persons involved with asbestos, and final air clearances following abatement in public and private schools, and public and commercial buildings.
- D. Alternative Work Practice (AWP) - State of Connecticut Department of Public Health (DPH) approved deviation from Asbestos Standards (Sections 19a-332a-1 to 19a-332a-16 inclusive). Alternative Work Practice methods may be used if pre-approved by DPH or with the approval of DPH, the Design Consultant and State's Project Monitor when not pre-approved. Pre-approved Alternative Work Practice methods are included in Appendix A of this specification. Approval of alternative work practice procedures shall not relieve the Contractor from any codes, regulations or standards required by this specification.
- E. Asbestos Abatement Site Supervisor – Any individual who is employed or engaged by an asbestos contractor to supervise an asbestos abatement project.
- F. Asbestos-Containing Waste Materials - Mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.
- G. Asbestos Control Area - An area where asbestos abatement operations are performed which is isolated by physical boundaries, which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris. Two examples of an Asbestos Control Area are a "full containment" and a "glove-bag."
- H. Authorized Asbestos Disposal Facility - A location approved by the Connecticut Department of Environmental Protection for handling and disposing of asbestos waste or by an equivalent regulatory agency if the material is disposed of outside the State of Connecticut.
- I. Category I Non-Friable Asbestos-Containing Material (ACM) - Asbestos-containing packing, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent

asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

- J. Category II Non-Friable ACM - Any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- K. Class I Asbestos Work - Activities involving the removal of TSI and surfacing ACM and PACM.
- L. Class II Asbestos Work - Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.
- M. Class III Asbestos Work - Repair and maintenance operations, where ACM, including thermal system and surfacing material, is likely to be disturbed.
- N. Class IV Asbestos Work - Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.
- O. Competent Person - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the work place and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition for Class I and Class II work who is specially trained in a training course which meet the criteria of 40 CFR 763 (Appendix C to Subpart E - Asbestos Model Accreditation Plan).
- P. Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.
- Q. Critical Barrier - A layer of six (6) mil polyethylene sheeting taped securely over windows, doorways, diffusers, grilles and any other openings between the Work Area and uncontaminated areas outside of the Work Area, including the outside of the building.
- R. Demolition - The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.
- S. DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.
- T. DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- U. Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

- V. Encapsulation - The treatment of asbestos-containing materials to prevent the release of fibers as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).
- W. Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.
- X. Equipment Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled transfer of materials and equipment into or out of the Work Area, typically consisting of a Washroom and a Holding Area.
- Y. Exposed - Open to view.
- Z. Fiber - A particulate form of asbestos five microns or longer, with a length-to-diameter ratio of at least 3 to 1.
- AA. Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.
- BB. Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.
- CC. Fixed Object - A piece of equipment or furniture in the Work Area, which cannot be removed from the Work Area, as, determined by the State.
- DD. Friable Asbestos-Containing Material (ACM) - Material containing more than one percent asbestos which has been applied on ceilings, walls, structural members, piping, duct work, or any other part of a building, which when dry may be crumbled, pulverized or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized or reduced to powder by hand pressure.
- EE. Friable Asbestos-Containing Building Material (ACBM) - Any friable ACM that is in or on interior structural members or other parts of a school or public or commercial building.
- FF. Glove-Bag Technique - A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contaminated work area. Information on glove-bag installation, equipment and supplies, and work practices is contained in 29 CFR 1926.1101. The glove-bag assembly is a manufactured or fabricated device consisting of a glove-bag (typically constructed of six (6) mil polyethylene or polyvinyl chloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. This technique requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- GG. HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of trapping and retaining asbestos

fibers. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

- HH. Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.
- II. Inspection - An activity undertaken in a school building, or a public or commercial building, to determine the presence or location, or to assess the condition of, friable or non-friable ACBM or suspected ACBM, whether by visual or physical examination, or by collecting samples of such materials.
- JJ. Lock-down - The procedure of spraying polyethylene sheeting and building materials with an encapsulant type sealant to seal in non-visible asbestos-containing residue.
- KK. Major Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of more than 3 square or 3 linear feet of friable ACBM.
- LL. Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area. This procedure requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- MM. Minor Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of 3 square or linear feet or less of friable ACBM.
- NN. Movable Object - A piece of equipment or furniture in the Work Area, which can be removed from the Work Area, as, determined by the State.
- OO. Negative Initial Exposure Assessment - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101(f)(2)(iii) that employee exposure during an operation is expected to be consistently below the PEL.
- PP. Non-Friable Asbestos-Containing Material - Material containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy, that when dry cannot be crumbled, pulverized or reduced to powder by hand pressure.
- QQ. Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.
- RR. Permissible Exposure Limits (PELS) - (1) Time-weighted Average Limit (TWA). The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (f/cc) of air as an eight (8) hour time-weighted average (TWA). (2) Excursion Limit. The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

- SS. Pre-Clean - The process of cleaning an area before asbestos abatement activities begin to ensure all dust and debris in the area considered asbestos containing are properly contained and disposed of. This increases the likelihood the area will pass aggressive air sampling clearance requirements after asbestos-containing materials have been removed.
- TT. Presumed Asbestos-Containing Material - Thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 paragraph (k)(5).
- UU. Project Monitor - The certified and licensed individual contracted or employed by the building owner or contractor to supervise and/or conduct air monitoring and analysis schemes. This individual is responsible for recognition of technical deficiencies in procedures during both planning and on-site phases of an abatement project. Requirements for Project Monitor are defined in the Connecticut Department of Public Health Regulations (Sections 20-440-1 to 20-440-9 and 20-441). In addition to these requirements, this person shall be listed in the American Industrial Hygiene Association's Asbestos Analysts Registry.
- VV. Regulated Area - Area established by the employer to demarcate areas where Class I, II and III work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the PEL.
- WW. Regulated Asbestos-Containing Material (RACM) - (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
- XX. Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting members are wrecked or taken out are demolition.
- YY. Repair - Overhauling, rebuilding, reconstructing or reconditioning of structures or substrates where asbestos, tremolite, anthophyllite or actinolite is present.
- ZZ. Response Action - A method including removal, encapsulation, enclosure, repair and operation and maintenance that protect human health and the environment from friable ACBM.
- AAA. Small-Scale, Short Duration (SSSD) - Tasks such as but not limited to:
1. Removal of asbestos containing insulation on pipes.
 2. Removal of small quantities of asbestos-containing insulation on beams or above ceilings.
 3. Replacement of an asbestos-containing gasket on a valve.
 4. Installation or removal of a small section of drywall.
 5. Installation of electrical conduits through or proximate to asbestos-containing materials.
 6. Removal of small quantities of ACM only if required in the performance of another maintenance activity not intended as asbestos abatement.

7. Removal of asbestos containing thermal system insulation not to exceed amounts greater than those which can be contained in a single glove-bag.
 8. Minor repairs to damaged thermal system insulation, which do not require removal.
 9. Repairs to a piece of asbestos-containing wallboard.
 10. Repairs involving encapsulation, enclosure, or removal, to small amounts of friable ACM only if required in the performance of emergency or routine maintenance activity and not intended solely as asbestos abatement. Such work may not exceed amounts greater than those may, which can be contained in a single prefabricated mini-enclosure. Such an enclosure shall conform spatially and geometrically to the localized work area, in order to perform its intended containment function.
- BBB. Spot Repair – Any asbestos abatement performed within a facility involving not more than three (3) linear feet or three (3) square feet of asbestos-containing material.
- CCC. Unfinished Space - Space used for storage, utilities or work area where appearance is not a factor. Examples of an unfinished space include crawlspace; pipe tunnel and similar spaces.
- DDD. Visible Emissions - Any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.
- EEE. Visible Residue - Any debris or dust on surfaces in areas within the Work Area where asbestos abatement has taken place and which is visible to the unaided eye. All visible residue is assumed to contain asbestos.
- FFF. Waste Generator - Any owner or operator of a source whose act or process produces asbestos-containing waste material.
- GGG. Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
- HHH. Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools, which have been dampened with water, and afterwards thoroughly decontaminated or disposed of, as asbestos-contaminated waste.
- III. Work Area - Specific area or location where the actual work is being performed or such other area of a facility, which the Commissioner determines, may be hazardous to public health because of such asbestos abatement.
- JJJ. Worker Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled passage of workers and authorized visitors, typically consisting of a Clean Room, a Shower Room and an Equipment Room.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. Occupational Safety and Health Administration (OSHA)
 - 29 CFR 1910.1001 - Asbestos, Tremolite, Anthophyllite, and Actinolite.
 - 29 CFR 1926.21 - Safety Training and Education.
 - 29 CFR 1926.32 - Definitions.
 - 29 CFR 1926.51 - Sanitation.
 - 29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.
 - 29 CFR 1926.59 - Hazard Communication.
 - 29 CFR 1926.62 – Lead Exposure in Construction.
 - 29 CFR 1926.200 - Accident Prevention Signs and Tags.
 - 29 CFR 1926.417 - Lockout and Tagging of Circuits.
 - 29 CFR 1926.1101 - Asbestos.
 2. Environmental Protection Agency (EPA)
 - 40 CFR 61, Subpart M - National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule.
 - 40 CFR 763, Subpart E - Asbestos School Hazard Emergency Response Act (ASHERA).
 - 40 CFR 763, Subpart G - Worker Protection Rule.
 - 40 CFR 763, Appendix C to Subpart E - Asbestos Model Accreditation Plan (MAP).
 3. State of Connecticut, Department of Public Health Regulations (DPH)
 - Section 19a-332a-1 through 19a-332a-16 - Standards for Asbestos Abatement.
 - Section 19a-333-1 through 19a-333-13 - Asbestos-Containing Materials in Schools Regulations.
 - Section 19a-332e-1 through 19a-332a-8 – Civil Penalties for Violation of Asbestos Abatement Laws.
 - Section 20-440-1 through 20-440-9 - Licensure and Training Requirements for Persons Engaged in Asbestos Abatement and Asbestos Consultation Services.

Section 20-441 – Refresher Training.

4. American National Standards Institute (ANSI)

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

ANSI Z88.2 - Respiratory Protection.

5. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.

ASTM E 96 - Water Vapor Transmission of Materials.

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

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

ASTM E 1368 - Visual Inspection of Asbestos Abatement Projects.

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

6. Underwriters Laboratories, Inc. (UL)

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

1.5 DOCUMENTATION

A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

1. Local Exhaust Equipment
2. Vacuum Equipment
3. Respirators
4. Pressure Differential Automatic Recording Instrument
5. Surfactant
6. Chemical Encapsulant
7. Polyethylene Sheeting
8. Airless Sprayers
9. Portable Shower Units
10. Adhesive Removal Chemicals
11. MSDS for All Materials Delivered to the Site
12. Letters of Compatibility for Encapsulants and Over coating Materials

C. Statements:

1. State Notification
2. Worker Medical Certification
3. Worker Training Certification
4. Worker Respirator Fit Testing
5. OSHA Laboratory Certification
6. Contractor's Project Monitor Certification
7. Landfill Approval
8. Safety Plan
9. Respirator Protection Plan
 - a. Initial Exposure Assessment
 - b. Copies of all required notifications, approvals and permits for the removal, disposal and transport asbestos-containing or contaminated materials.
 - c. Documentation from a physician certifying that all employees who may be exposed to airborne asbestos in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.1101. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants which to which he/she may be exposed
 - d. Documentation certifying that all employees have received training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.
 - e. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.1101.
 - f. Qualifications of the person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
 - g. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. Include any site-specific information to address health and safety procedures unique to this project.
 - h. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of

the continued effectiveness of the program; and other elements included in the standard.

- i. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross-referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and, contain information on how other contract employees will be informed about hazards their employees may encounter while working in the facility.
- j. Demonstrate that employee's exposure will be below the PEL's. For Class I asbestos work until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PEL's, or otherwise makes a negative exposure assessment, the employer shall presume that employees are exposed in excess of the TWA and excursion limit.

D. Records:

1. Sign-in/out Logs
2. Personal Air Sampling Results
3. Waste Shipment Records
4. Pressure Differential Recording Data
5. NPE Inspection and Smoke Test Logs
6. Rental Equipment Statements
 - a. When rental equipment is to be used in removal areas or to transport waste materials, submit a copy of written notification provided to the rental company informing them of the nature of use of the rented equipment

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.1101. Provide appropriate respiratory protection for each worker and ensure usage during potential asbestos exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements for respirators in use.
- B. Minimum respiratory protection shall be as follows:

Airborne concentration of asbestos,
or conditions of use.

Required Respirator

Not in excess of 10 f/cc
(100 x PEL)

Any powered air purifying
respirator equipped with
high efficiency filters
or any supplied-air respirator

	operated in continuous flow mode.
Not in excess of 100 f/cc (1000 x PEL)	Full face piece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (>1000 x PEL) or unknown concentration	Full face piece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

- a. Respirators assigned for higher airborne fiber concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.
 - b. A high-efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 microns in diameter or larger.
- C. Provide and require all workers to wear protective clothing in Work Areas where asbestos fiber concentrations exceed permissible limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing remains in the Equipment Room for reuse or disposal of as contaminated waste.
- D. Ensure that all workers and authorized persons enter and leave the Asbestos Control Area through the Worker Decontamination Enclosure System.

1.7 EQUIPMENT REMOVAL PROCEDURE

- A. Clean surfaces of contaminated containers and equipment thoroughly by vacuuming with HEPA filtered equipment and wet wiping before moving such items into the Equipment Decontamination Enclosure System for final cleaning and removal to uncontaminated areas. Ensure that personnel do not leave the Asbestos Control Area through the Equipment Decontamination Enclosure System.

1.8 SEQUENCE OF WORK

- A. Proceed in accordance with the sequence of work as mutually agreed upon with the Owner. Work shall be divided into convenient Work Areas, each of which is to be completed as a separate unit. The following sequence of work shall be used for the asbestos abatement work:
 - 1. A visual inspection of the Work Area to determine pre-existing damage to facility components.
 - 2. Release of floor area (Phase) to the Contractor.
 - 3. All temporary utilities required for the project shall be on site and operational prior to the initiation of asbestos work.

4. Removal of all movable objects from the Work Area undergoing abatement by the Contractor.
5. Abatement of all asbestos-containing materials by the Contractor.
6. Air sampling by the Owner's Project Monitor for reoccupancy.
7. Rework activities as specified in other sections of this specification.
8. Cleanup by the Contractor. Work Areas must be returned to their original condition or better.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

1.10 SCHOOL IN SESSION (SIS) REQUIREMENTS – GRADES K-12

- A. No asbestos removal activities are permitted during regular school hours.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2006-33.
- C. The abatement contractor shall provide the documentation included in paragraph 1.5.C to the Asbestos Project Designer 30 days prior to start of asbestos removal activities in each work area for submission in DPH SIS requests. No asbestos removal is permitted in an occupied school facility until approved by DPH.
- D. The Owners project monitor will conduct daily air sampling at prescribed locations throughout the project. Samples will be collected and read via phase contrast microscopy (PCM) twice per shift. All air samples in occupied areas shall be analyzed at the site prior to the end of the shift, by an analyst currently listed on the AIHA Asbestos Analysts registry and the Connecticut DPH Laboratory Certification Program. The results of the analysis of all samples shall be made available prior to return of students on the next day following the date of collection of the samples.
- E. If during asbestos abatement activities, any air sample analyzed by PCM is either overloaded with particulate or exceeds 0.010 f/cc or the background level, whichever is higher, the sample shall be analyzed by the NIOSH 7402 Transmission Electron Microscopy (TEM) method. Results of the analysis of the TEM samples shall be submitted to the DPH, the appropriate local Department of Health Agency and the Connecticut Technical High School System.
- F. If any air sample analyzed by NIOSH 7402 TEM method is either overloaded with particulate and cannot be analyzed or, if upon analysis the sample fiber concentration exceeds 0.005 f/cc, the area outside the established asbestos work area will be considered contaminated with asbestos. The Project Designer shall conduct an assessment of the contamination and the asbestos contractor shall re-establish engineering controls, isolation barriers, abatement work practices, etc. and clean the affected area. An area of the school evacuated due to air sampling data as described above shall not be occupied until: i) the area is cleaned via wet wipe techniques using amended water and HEPA vacuum procedures by the asbestos contractor; and ii) air sampling and analysis of the area satisfies the DPH criteria for re-occupancy.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating four (4) or six (6) mil.
- B. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Disposable bags shall be [transparent] [opaque].
- C. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- D. Surfactant (wetting agent) shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water or as directed by the manufacturer.
- E. Containers must be impermeable and shall be both air and watertight. Containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101 and EPA 40 CFR Part 61.152 as appropriate.
- F. Labels and signs shall conform to OSHA Standard 29 CFR 1926.1101.
- G. Encapsulant shall be bridging or penetrating type which has been approved by the Design Consultant. Usage shall be in accordance with manufacturer's printed technical data. Encapsulant must be compatible with new materials being installed. Encapsulant may be clear or white.
- H. Glove-bag assembly shall be manufactured of six (6) mil transparent polyethylene or PVC with two (2) inward projecting long sleeve gloves, an internal pouch for tools, and an attached labeled receptacle for waste.
- I. Mastic removal chemicals shall be low odor, non-citrus based. Flash point shall be in excess of 140 deg. F.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for asbestos removal.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each eight workers.

- E. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Asbestos Control Area.
- F. Pressure differential automatic recording instrument shall be provided to ensure exhaust air filtration devices provide the minimum pressure differential required between the Work Area and occupied areas of the facility.
- G. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Asbestos Control Area.
- H. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
- I. Mechanical mastic removal equipment shall be suitable for the application.
- J. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule.
- K. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR ASBESTOS ABATEMENT

- A. A Competent Person and Asbestos Abatement Site Supervisor shall be on the job at all times to ensure the establishment and maintenance of the NPE and proper work practices are followed through completion of the project.
- B. Containerize asbestos-containing waste material removed daily. Do not allow ACM to remain on the floor overnight, allowing it to dry out. Fill disposal containers (six (6) mil polyethylene bags or fiber drums) as removal proceeds, seal filled containers, and apply caution labels and clean containers before removal to wash area. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Bags may be placed in drums for staging and transportation to the disposal site. Bags shall be decontaminated by wet cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops. Vinyl asbestos tile removed shall be bagged and placed in clean drums and sealed with locking ring tops. Wet clean each container thoroughly before moving to a holding area or to the waste storage container.
- C. If at any time during asbestos removal, should the Project Monitor suspect contamination of areas outside the Work Area, the Contractor shall stop all abatement work and take steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and visual inspections determine decontamination.

3.2 PREPARATION OF WORK AREA ENCLOSURE SYSTEM

- A. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
- B. Post warning signs meeting the specifications of OSHA 29 CFR 1910.1001 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area. Additional signs may require posting following construction of work place enclosure barriers.
- C. Utilize engineering controls and personnel protective equipment while installing enclosures and supports when asbestos-containing materials may be disturbed.
- D. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.

- E. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- F. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the building. Seal all vents.
- G. Pre-clean movable objects within the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate and remove such objects from Work Areas to a temporary location.
- H. Pre-clean fixed objects within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with six (6) mil polyethylene sheeting sealed with tape. Objects which must remain in the Work Area and which require special ventilation or enclosure include electrical equipment, pumps, compressors, control panels, meter equipment.
- I. Clean the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
- J. Seal off all windows, doorways, skylights, ducts, grilles, diffusers, and any other openings between the Work Area and the uncontaminated areas outside of the Work Area with critical barriers. Doorways and corridors, which will not be used for passage during work, must be sealed with fixed critical barriers.
- K. Conspicuously label and maintain emergency and fire exits from the Asbestos Control Area satisfactory to the Owner.

3.3 WORKER DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, a Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series. Access to the Work Area shall only be through this enclosure.
- B. Access between rooms in the Worker Decontamination Enclosure System shall be through double flap-curtained openings (air locks). Other effective designs are permissible. The Clean Room, Shower Room and Equipment Room located within the Worker Decontamination Enclosure, shall be completely sealed ensuring sole source of airflow into the Asbestos Control Area originates from the outside-uncontaminated areas.
- C. The Clean Room shall be adequately sized to accommodate workers and shall be equipped with a suitable number of hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Changing areas of the Clean Room shall be suitably screened from areas occupied by the public.
- D. The Shower Room shall be of sufficient capacity to accommodate the number of workers. Supply warm water to showers. Provide one shower for each eight workers. No worker or other person shall leave an Asbestos Control Area without showering.

3.4 EQUIPMENT DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, an Equipment Decontamination Enclosure System consisting of two (2) totally enclosed chambers divided by a double flap curtained opening. Other effective designs are permissible. This enclosure must be constructed to ensure that no personnel enter or exit through this unit.

3.5 SEPARATION OF WORK AREAS FROM OCCUPIED AREAS

- A. Occupied areas and/or building space not within the Asbestos Control Area shall be separated from asbestos abatement Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- B. Do not impair required building exits from any occupied building area. Where normal exits have been blocked by the asbestos work, provide temporary exit signs directing building occupants to the nearest available exit location.
- C. Create a pressure differential in the range of 0.02 to 0.04 inches of water column between the Work Area and occupied areas by the use of acceptable pressure differential equipment. Provide a sufficient quantity of units to exhaust the volume of air within the Asbestos Control Area a minimum of four times per hour. Continuously monitor the pressure differential between the Work Area and occupied areas utilizing recording type equipment to ensure exhaust air filtration equipment maintains a minimum pressure differential of 0.02 inches of water column.

3.6 REMOVAL OF FRIABLE ASBESTOS MATERIAL

- A. Remove friable materials identified in accordance with the specific description of work to be accomplished.
- B. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first, with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints.
- C. Removal of existing suspended ceilings, fluorescent light fixtures, and other ceiling mounted items that interfere with asbestos abatement shall be accomplished after engineering controls have been established. Fluorescent fixture components require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all

applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.

- D. Where non-ACM thermal systems insulation exists within the Work Area, decontaminate and protect non-ACM insulation material with two (2) layers of six (6)-mil polyethylene sheeting, or remove as asbestos contaminated.
- E. Spray friable materials with amended water, using airless spray equipment capable of providing a "mist" application to reduce the release of fibers during the removal operation. In order to maintain indoor asbestos concentrations at a minimum, remove the wet asbestos in manageable sections. Materials shall not be allowed to dry out. Material drop shall not exceed 8 feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop. For heights, exceeding 15 feet provide enclosed dust-proof chutes.
- F. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.7 REMOVAL OF NON-FRIABLE RESILIENT FLOORING AND ASSOCIATED MASTIC

- A. Resilient flooring shall be removed by approved methods, which minimize the release of asbestos fibers. Mastic may be removed by hand methods utilizing solvents or by mechanical means. Precaution shall be taken to prevent the leakage of contaminated liquids containing solvents to other areas of the building. Take immediate steps to clean up leaks and prevent future occurrences of the leak. Solvents shall be used in strict accordance with the manufacturer's written recommendations. Mechanical equipment may be used to remove flooring mastic. Ensure surfaces have been adequately wetted to prevent dust emissions prior to operation of mechanical mastic removal equipment.

3.8 REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Non-friable miscellaneous materials shall be removed by approved methods, which minimize the release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap ACM in 6-mil polyethylene sheeting and remove for disposal.

3.9 INTACT REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Intact removal of non-friable asbestos-containing materials shall be accomplished by approved methods without release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap removed ACM in 6-mil polyethylene sheeting and remove for disposal.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter DEH #2003-10.

3.10 REMOVAL OF CONTAMINATED EARTH

- A. Remove all ACM gross debris and visible contamination from the top of soil. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints. Perform removal of ACM from all surfaces containing asbestos in the crawl space. After successful completion of a visual inspection, remove the polyethylene sheeting and place in disposal containers. Any debris which may have leaked behind the inner layer shall be removed by HEPA vacuuming. Remove soil to a depth of 2-inches, or to a depth as required by the Project Manager to remove ACM contamination. Apply a lock-down encapsulant to all surfaces within the Work Area from which asbestos has been removed.

3.11 REMOVAL OF EXTERIOR UNDERGROUND PIPE AND CONDUIT SYSTEM INTACT

- A. After excavating, to expose the top of the underground pipe system, remove by hand, earth from the sides of the pipe without disturbing the exterior. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. At locations where the pipe systems are to be cut into sections, and where the sections are to be lifted, remove earth from the entire perimeter of the pipe conduit. Construct the NPE and establish a negative pressure differential between the Work Area and the exterior. Construct the containment of adequate size to remove a minimum of two linear feet of outer casing and underlying insulation prior to disturbing ACM. Utilize locations where field joints have been made during pipe system installation to the extent feasible. Remove the ACM casing and pipe insulation materials from around steam piping. Once the area has passed clearance testing and all controls established by this section have been removed cut the piping and remove the section from the trench using slings which will not damage the casing. Double wrap sections of pipe in 6-mil polyethylene sheeting and place in the waste storage container or transport vehicle.

3.12 REMOVAL OF EXTERIOR UNDERGROUND PIPE INSULATION

- A. After excavating to expose the top of the underground pipe system, remove by hand earth from the sides of the pipe without disturbing the insulation. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. After excavating to expose the top of the pipe system, remove by hand earth from the sides of the pipe. Construct the NPE along the entire section of piping between manholes, and establish a negative pressure differential between the

Work Area and the exterior. Remove the pipe insulation and all asbestos-containing material, including contaminated earth from around piping as ACM.

3.13 REMOVAL OF WINDOWS FROM BUILDING EXTERIOR

- A. Cover floor surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 5-feet from walls. Cover ground surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 10-feet from building exterior. Install polyethylene sheet over the inside of the window opening and seal with tape.
- B. The windows are to be removed from the opening by hand methods to minimize damage, wrapped in two (2) layers of 6-mil polyethylene sheeting and taken off-site by the contractor for final cleaning prior to disposal and recycling. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible residue (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.14 ALTERNATIVE WORK PRACTICE (AWP) PROCEDURES

- A. The procedures described in this specification are to be utilized at all times. Alternative work practice methods may be used if pre-approved by DPH. Should the Contractor desire to use alternative work practice procedures, which have not been pre-approved by DPH, submit in writing a description of the proposed methods to DPH, Design Consultant, and Owner's Project Monitor for approval.
- B. Alternative work practice (AWP) procedures shall provide equivalent or greater protection than the procedures that they replace. A DPH licensed asbestos project designer must submit in writing a description of the proposed methods to the Design Consultant for review. If the procedure is acceptable to the Design Consultant, an AWP application may then be forwarded to DPH for approval. Failure to secure AWP acceptance or approval shall not be a basis of a claim for additional compensation.
- C. The Contractor shall be responsible for all fees associated with filing Alternative Work Practice (AWP) applications, which have not been pre-approved. AWP applications must be submitted by Connecticut DPH licensed Project Designers.

3.15 CLEAN-UP PROCEDURE

- A. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris which may have splattered or collected on the polyethylene wall covering. Carefully remove the cleaned outer layer of polyethylene from the walls, fold inward as material is being removed, and place in disposal containers. Any debris, which may have leaked behind the outer layer, shall be removed by HEPA vacuuming and/or wet cleaning.
- B. Remove contamination from the exteriors of the negative air machines, scaffolding, ladders, extension cords, hoses and other equipment inside the Work Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or wet cleaning.
- C. The Owner's Project Monitor shall conduct a thorough visual inspection utilizing a high-intensity flashlight, with the containment barriers in place, to detect visible accumulations of

dust or bulk asbestos-containing materials remaining in the Work Area. Should dust, debris or residue be detected, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean up of the work site.

- D. Once the area has been re-cleaned, any equipment, tools or materials not required for completion of the work, shall be removed from the Work Area. Negative air filtration devices shall remain in place and operating for the remainder of the clean-up operation.
- E. Wet wipe the walls beginning at the point farthest away from the negative air filtration units using cotton rags or lint free paper towels. Rags and towels shall be disposed of after each use. Workers should avoid the use of dirty rags to insure proper cleaning of surfaces. Mop the entire floor with a clean mop head and amended water. Water shall be changed frequently. Waste water shall be filtered using best available technology and dumped down an approved drain.
- F. A visual inspection of the Work Area by the licensed Project Monitor shall be conducted. Evidence of asbestos contamination identified during the inspection will necessitate further cleaning as heretofore specified. The area shall be re-cleaned at the Contractors expense until the Standard of Cleanliness is achieved.
- G. Upon successful completion of the visual inspection, the Contractor shall encapsulate all abated surfaces.
- H. Once the lock-down encapsulant has sufficiently dried, air sampling for reoccupancy clearance shall be undertaken using aggressive sampling techniques. Analysis of clearance samples shall follow State of Connecticut Regulations, Section 19a-332a-12. Areas, which do not comply, shall continue to be cleaned by and at the Contractors expense, until the specified Standard of Cleaning is achieved as evidenced by results of air testing. When the Work Area passes the reoccupancy clearance, controls established by this specification may be removed.
- I. During breakdown of containment carefully remove the polyethylene barriers. Fold inward as the material is being removed, and place in leak-tight containers. Any debris which may have fallen behind the polyethylene sheeting shall be removed by HEPA vacuuming and/or wet cleaning. Remove all remaining polyethylene, including critical barriers, and Decontamination Enclosure Systems leaving negative air filtration devices in operation. HEPA vacuum and/or wet wipe any visible residue, which is uncovered during this process.

3.16 REOCCUPANCY CLEARANCE AIR SAMPLING

- A. Reoccupancy clearance air sampling will be conducted by the Project Monitor in accordance with the reoccupancy clearance criteria as set forth in the Regulations of Connecticut State Agencies, Section 19a-332a-12 or Section 19a-333-7 as applicable.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2010-48.
- C. Post-abatement clearance air monitoring requirements are as follows:
 - 1. Air sampling will not begin until at least 12 hours after wet cleaning has been completed and no visible water or condensation remain.

2. Sampling equipment will be placed at random around the Work Area. If the Work Area contains the number of rooms equivalent to the number of required samples based on floor area, a sampler shall be placed in each room. When the number of rooms is greater than the number of samples, a representative number of rooms will be selected.
3. The representative samplers placed outside the Work Area but within the building will be located to avoid any air that might escape through the isolation barriers and will be approximately 50 feet from the entrance to the Work Area, and 25 feet from the isolation barriers.
4. The following aggressive air sampling procedures will be used within the Work Area during all air clearance monitoring:
 - a. Before starting the sampling pumps, direct the exhaust from forced air equipment (such as a 1 horsepower leaf blower) against all walls, ceilings, floors, ledges and other surfaces in the Work Area. This should take at least 5 minutes per 1000 SF of floor area.
 - b. Place a 20-inch fan in the center of the room. (Use one fan per 10,000 cubic feet of room space.) Place the fan on slow speed and point it toward the ceiling.
 - c. Start the sampling pumps and sample for the required time.
 - d. Turn off the pump and then the fan(s) when sampling is complete.
5. Air volumes taken for clearance sampling shall be sufficient to accurately determine (to a 95 percent probability) fiber concentrations to 0.010 f/cc of air.
6. Each homogeneous Work Area, which does not meet the clearance criteria, shall be thoroughly recleaned using HEPA vacuuming and/or wet cleaning, with the negative pressure ventilation system in operation. New samples shall be collected in the Work Area as described above. The process shall be repeated until the Work Area passes the test, with the cost of repeat sampling being borne entirely by the Contractor.
7. For an asbestos abatement project with more than one homogeneous Work Area, the release criterion shall be applied independently to each Work Area.

- D. Continuous air sampling during construction will be conducted by the State's Project Monitor. Reoccupancy clearance testing will be in accordance with State of Connecticut DPH requirements. For window removal, a final visual inspection is to be performed to determine successful completion of all work associated with removal of windows

3.17 CONTRACTOR RESPONSIBILITY

- A. Conduct air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. Perform monitoring to determine accurately the airborne concentrations of asbestos to which employees may be exposed. Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours of receipt of results, and shall be available for review until the job is complete.

3.18 DISPOSAL OF ASBESTOS

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.

- B. Disposal approval shall be obtained prior to commencement of asbestos removal.
- C. Warning signs must be attached to vehicles used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- D. Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and tape into place.
- E. A copy of the completed Waste Shipment Record shall be provided to the Owner.

3.19 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, resecure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, fire alarm systems and sound systems.

3.20 ACTION CRITERIA

- A. If air samples collected outside of the Work Area during abatement activities indicate airborne fiber concentrations greater than original background levels or greater than 0.010 f/cc, as determined by Phase Contrast Microscopy, whichever is larger, an examination of the Work Area perimeter shall be conducted and the integrity of barriers shall be restored. Cleanup of surfaces outside the Work Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming abatement activities.

END OF SECTION 02 82 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work under this Section shall include furnishing all labor, materials and equipment necessary to install flexible connections at equipment connections to fixed ductwork following removal of existing flexible connections and successful air clearance test results.
- B. Contractor shall verify all locations where flexible connections are to be removed and replaced.

1.2 SUBMITTALS

- A. Contractor shall submit manufacturer's complete product data and installation instructions with list of materials, locations, and thickness for each use.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Closely woven, 30 oz. UL approved glass fabric, double coated with neoprene.
- B. Fire retardant, waterproof, air tight, resistant to acids and grease, capable of withstanding temperatures up to 250 degrees F.
- C. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install new flexible duct connections following manufacturer's instructions and in accordance with Fig. 3-5 of the SMACNA Low Pressure Duct Standards.
- B. Seal all ductwork where dismantled using duct sealing tape and mastic. The Contractor shall repair all ductwork that is buckled, misaligned, or damaged as a result of this work at no additional cost to the Owner.

END OF SECTION 23 33 00

PART 1 - GENERAL**1.1 DESCRIPTION OF WORK**

- A. The work included under this section shall include furnishing all labor, materials and equipment necessary to insulate or re insulate all (including presently un-insulated but previously insulated) mechanical systems indicated.
- B. Insulation requirements shall be in accordance with the current edition of ASHRAE 90.1. Insulation shall consist of replacement with a non-asbestos-containing material of the thickness and type as specified herein.
- C. Installation of insulation materials shall include but is not limited to the following:
 - 1. Low Pressure Steam Piping.
 - 2. Steam Condensate Piping.
 - 3. Roof Drains.
 - 4. Domestic Cold Water Piping.
 - 5. Domestic Hot Water Piping.
 - 6. Chilled Water Piping.
 - 7. Hot Water Heating Supply and Return Piping.
 - 8. Mechanical Equipment.
 - 9. HVAC Equipment.
 - 10. HVAC Ductwork.
 - 11. Boiler Breeching

1.2 REFERENCES

- A. ASHRAE 90.1 – Energy Standards for Buildings Except Low-rise Residential Buildings.
- B. ASTM C547 - Mineral Fiber Preformed Pipe Insulation.
- C. ASTM C612 – Mineral Fiber Block and Board Thermal Insulation.
- D. ASTM E84 - Surface Burning Characteristics of Building Materials.
- E. ASTM E96 - Water Vapor Transmission of Materials.
- F. NFPA 255 - Surface Burning Characteristics of Building Materials.
- G. UL 723 - Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Submit manufacturer's technical product data and installation instructions for each insulation material and device proposed for use with a list of materials, locations and thickness for each use.
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1.4 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E84, NFPA 255, and UL 723.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- B. Store insulation in original wrapping and protect from weather and construction traffic.
- C. Protect insulation against dirt, water, chemical, and mechanical damage.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastic, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 - PRODUCTS**2.1 GENERAL**

- A. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

2.2 GLASS FIBER PIPING INSULATION

- A. Fiberglass piping insulation shall conform to ASTM C547 and shall be pre-molded sectional rigid molded with a "k" of 0.24 at 75 degrees F mean temperature, thickness as specified in the Piping Insulation Thickness table. Insulation shall be jacketed with an double pressure-sensitive adhesive ASJ vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.3 GLASS FIBER FITTING INSULATION

- A. Insulation for fittings, flanges, and valves shall be remolded PVC fitting covers with fiberglass insulation inserts of the same thickness and conductivity as used on adjacent piping. Maximum service temperature 450 degrees F. (insert, 150 degrees F PVC). PVC fitting covers shall be 30 mil.

2.4 DUCT INSULATION

- A. Flexible fiberglass duct insulation shall conform to ASTM C553 with 1 pcf density, with a "k" of 0.28 at 75 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 250 degrees
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- B. Rigid fiberglass duct insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.5 EQUIPMENT INSULATION

- A. Rigid fiberglass equipment insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 2" thick. Insulation shall be jacketed with an ASJ vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.6 BOILER BREECHING INSULATION

- A. Mineral rock wool conforming to ASTM C612 class 3, density 3.0 pounds pcf. Maximum service temperature 1200 degrees F.

2.7 ADHESIVES, SEALANTS, AND COATING COMPOUNDS

- A. Vapor barrier coating shall conform to MIL-A-3316, Class 1.

2.8 ANCHOR PINS

- A. Anchor pins and speed washers as recommended by the insulation manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials. Notify Agency if any leaks have been identified during construction activities prior to re-insulation.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

- A. Insulation thickness shall be in accordance with the current edition of ASHRAE 90.1. The insulation thickness identified in the insulation schedule is meant only as a guide and it is the responsibility of the contractor to comply with applicable codes at the time of the work.
 - B. Fiberglass Insulation:
 1. Install materials in accordance with manufacturer's instructions. Secure seams with pressure sensitive tape closure and butt joints with minimum 3-inch (76 mm) wide tape of same material as vapor barrier jacket.
 2. On exposed piping, locate insulation and cover seams in least visible locations.
 3. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations.
 4. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections and expansion joints.
 5. Apply vapor barrier coating to all exposed ends of insulation.
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- C. Insulation thicknesses for hot water systems are for systems operating to 200 F. LP steam is for temps from 200 to 250 F (15 psig). MP steam is for temps from 251 to 350 F (15 to 125 psig). HP steam is for temps from 351 and above (125 psig and above) Condensate is assuming maximum temp of 200 F.

3.3 INSULATION SCHEDULE

Per 2006 International Energy Conservation Code:

PIPING SYSTEM	PIPE SIZE (Inch)	THICKNESS (Inch)
Domestic Cold Water	All	1"
Domestic Hot Water	Up to 2"	1"
Domestic Hot Water	2 1/2" to 8"	2"
Domestic Hot Water Recirculating	All	1"
Horizontal Roof Drains	Up to 6"	1"
Horizontal Roof Drains	8" and over	1 1/2"
Hot Water Supply and Return	Up to 1 1/2"	1"
Hot Water Supply and Return	1 1/2" and over	2"
Low Pressure Steam(up to 15 psig)	Up to 2"	1 1/2"
Low Pressure Steam(up to 15 psig)	2 1/2" to 6"	3"
Low Pressure Steam(up to 15 psig)	8" and over	3 1/2"
Medium Pressure Steam(15 to 120 psig)	Up to 1"	2"
Medium Pressure Steam(15 to 120 psig)	1 1/4" to 4"	2 1/2"
Medium Pressure Steam(15 to 120 psig)	5" to 8"	3 1/2"
High Pressure Steam(125 psig and above)	Up to 2"	2 1/2"
High Pressure Steam(125 psig and above)	2 1/2" to 4"	3"
High Pressure Steam(125 psig and above)	5" to 8"	3 1/2"
Steam Condensate (Gravity and Pumped)	All	1 1/2"
Condensate Drain (copper pipe only)	All	1/2"
Flash Tank	All	3"
Chilled Water (40 F to 55 F)	Up to 1 1/2"	1"
Chilled Water (40 F to 55 F)	1 1/2" and over	1 1/2"
Hot Water Storage Tank	All	2"
Other Heating Equipment	All	2"
Boiler Breeching	All	3"

END OF SECTION 23 07 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall be the removal of asbestos-containing roofing materials by persons who are knowledgeable, qualified, licensed, and trained in the removal, treatment, handling and disposal of asbestos-containing roofing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site with authority to take prompt corrective measures at all times during roofing removal work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract.
- B. The Owner may retain the services of a Project Monitor for protection of its interests and those using the building. Area air sampling and visual inspection to ensure proper clean up of the work area will be conducted as deemed necessary.
- C. Deviations from the Specification require the written approval of the State of Connecticut.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. AGENCY - The authoritative force, usually at the state level, or their representative.
- B. ASBESTOS-CONTAINING MATERIAL (ACM) – Any material containing more than one percent asbestos.
- C. COMPETENT PERSON – In addition to the definition in 29 CFR 1926.32(f), one who is in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation plan (40 CFR Part 763) for Supervisor, or its equivalent.
- D. HIGH-EFFICIENCY PARTICULATE AIR (HEPA) - A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles 0.3 microns in diameter.
- E. LEAK-TIGHT - Solids or liquids cannot escape or spill out. It also means dust-tight.

- F. REGULATED AREA - Area established by the Competent Person to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the Permissible Exposure Limit (PEL).
- G. NON-FRIABLE REGULATED ASBESTOS-CONTAINING MATERIAL - Means any material containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section I, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- H. REGULATED ASBESTOS-CONTAINING MATERIAL (RACM) – means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
 - 1. Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101-Asbestos
 - 2. Environmental Protection Agency (EPA) 40 CFR 61, Subpart M-National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule. 40 CFR 763, Appendix C to Subpart E – Asbestos Model Accreditation Plan (MAP)
 - 3. State of Connecticut, Department of Public Health Regulations (DPH) Sections 19a-332a-1 Through 19a-332a-16 – Standards for Asbestos Abatement

1.5 SUBMITTALS AND NOTICES

- A. Prior to commencement of asbestos abatement work, submit to the A/E and Construction Coordinator and receive approval and/or acknowledgement of following:
 - 1. State notifications (when applicable)
 - 2. Asbestos worker medical clearance to wear a respirator documentation
 - 3. Asbestos worker & Competent Person training documentation
 - 4. Asbestos worker respiratory fit testing documentation
- B. Within 35 days following the date the asbestos waste trailer leaves the job site, submit to the A/E and DPW Construction Coordinator:
 - 1. Waste shipment record for disposal of asbestos roofing material

1.6 PERSONNEL PROTECTION

- A. Provide and require all workers to wear protective clothing and half face respirators when present in the Regulated Area established by the Competent Person.

1.7 WORKER TRAINING REQUIREMENTS

- A. Training for the Competent Person, Supervisor, and Workers shall meet the requirements of Federal and State regulations.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Polyethylene sheeting and disposal bags shall be six (6) mil.
- B. Labels and signs shall conform to applicable regulations.

2.2 TOOLS AND EQUIPMENT

- A. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance per OSHA requirements.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Waste Containers shall be lined with 2 layers of 6 mil polyethylene sheeting and 1 layer of polypropylene burlap.

PART 3 - EXECUTION

3.1 PREPARATION OF WORK AREA

- A. Post warning signs meeting the specifications of OSHA 29 CFR 1910 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area.
- B. Prior to start of work, and as needed during the job, the Competent Person shall inspect the work site and determine whether the roofing material is non-friable asbestos containing material and will likely remain non-friable asbestos containing material during removal activities.
- C. Shut down and seal (with duct tape and 6-mil. poly sheeting) windows & roof level heating and ventilation air intakes that are in position to entrain dust or vapors from the roofing activities. Coordinate shut down of mechanical systems with Owner personnel. Where intake shutdown is

not feasible (as determined by Owner), supply and install horizontal or vertical extensions to relocate the opening of the air intake outside or above the regulated area so as not to entrain dust and vapor emissions from the roofing and re-roofing activity.

3.2 ASBESTOS-CONTAINING ROOFING MATERIAL REMOVAL

- A. All work shall be performed in accordance with OSHA Construction Industry Standard (29 CFR 1926.1101) and EPA NESPAP Standard (40 CFR 61) and applicable State of Connecticut Regulations.
- B. A Competent Person shall be on the job at all times to ensure proper work practices throughout the project.
- C. The Contractor shall utilize methods which do not sand, grind, cut or abrade the asbestos-containing roofing material. Should roofing materials be identified as regulated asbestos-containing material additional federal and state regulations shall apply.
- D. Pick up or HEPA vacuum asbestos-containing roofing debris from non-intact roofs prior to removal of the roofing. Bag debris for disposal.
- E. Utilize wet methods to remove asbestos-containing roofing materials unless such wet methods are not feasible or will create safety hazards, as determined and documented in writing by the competent person.
- F. HEPA vacuum asbestos-containing dust and debris left after the removal of asbestos-containing roofing. Where asbestos-containing built-up roofing is removed, HEPA vacuum the roof decking following roofing removal. Bag dust and debris for disposal.
- G. Remove asbestos-containing flashings and associated cements or mastics using manual methods (such as axe, knife, or shovel). Do not saw, sand, abrade or grind these materials.
- H. Asbestos-containing roofing material shall be carried or passed to the ground by hand or lowered to the ground by crane or hoist. Do not drop or throw asbestos-containing roofing material to the ground or into the dumpster. Transfer lowered asbestos-containing roofing material to the leak tight disposal dumpster carefully so as not to disperse dust.

3.3 DISPOSAL OF ASBESTOS-CONTAINING ROOFING MATERIAL

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.
- B. Asbestos warning signs must be attached to containers used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- C. Label containers of asbestos-containing waste material or wrapped asbestos-containing waste material using warning labels specified by OSHA 29 CFR 1926.1101. Label Asbestos-

containing waste material destined for off-site transport with the name of the waste generator and the location where the waste was generated.

3.4 CONTRACTOR PERSONAL AIR MONITORING RESPONSIBILITY

- A. Conduct air sampling to assure that workers are using appropriate respiratory protection in accordance with OSHA Construction Industry Standard 1926.1101. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.
- B. Produce a written initial asbestos exposure assessment prior to starting asbestos roofing removal work in compliance with OSHA Standard 1926.1101. Keep the exposure assessment on site for review by all concerned parties.

END OF SECTION 07 08 00

PART 1 - GENERAL

1.1 SCOPE

- A. Contractor shall meet the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3, and shall have a Competent Person in control on the job site at all times during work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract. The work specified herein shall be the performance of activities to control and eliminate lead-based paint hazards. These activities include; interim controls, abatement, and encapsulation of various materials containing or covered by lead-based paint
- B. The Owner will retain the services of a certified Inspector or Inspector Risk Assessor to monitor the work.
- C. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor at no additional expense to the State. The Contractor is responsible for protecting all objects remaining in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all notifications, approvals and permits required.
 - 2. Provide, erect, and maintain all staging, planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all removed materials and debris shall become the property of the Contractor and shall be removed from the premises. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the State at no cost to the State.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on lead), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.
 - B. The lead abatement work shall include the removal of lead-based paint, encapsulation of lead-based painted surfaces or stripping of building components containing lead-based paint as specified.
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- C. A project work order description shall be attached to each individual order identifying the scope of work and specific methods and procedures to be followed.
- D. For work that will disturb more than 6 square feet of interior lead based paint or more than 25 square feet of exterior lead based paint in a “child-occupied” structure, the following shall apply: The Contractor shall be certified under the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008. The Contractor shall follow specific work practice requirements of the RRP rule to prevent lead contamination during renovation, repair, and painting projects that disturb LBP in homes, child care facilities, and schools built before 1978. The Contractor shall have at least one “Certified Renovator” assigned to jobs where LBP is disturbed. **Note:** A child-occupied structure is one where a child under the age of 6 resides, including private residences, day care centers, and schools.

1.3 DEFINITIONS

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 soil with a durable covering such as asphalt.

Action Level - Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) calculated as an eight hour time weighted average.

Abrasive Removal - A method of abatement that entails the removal of lead-based paint using mechanical removal equipment fitted with a high efficiency particulate air (HEPA) dust collection system.

Atomic Absorption Spectrophotometer (AA) - An instrument which measures the lead content in parts per million (ppm) using a lead source lamp and a flame capable of measuring the absorbed energy and converting it to concentration.

Biological Monitoring - The analysis of a person's blood to determine the level of lead contamination in the body.

Certified Renovator – An individual who is approved to carry out remodeling work practices described in the terms of the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008.

Chemical Removal - A method of abatement which entails the removal of lead-based paint using caustic or solvent based chemical paint strippers.

Competent Person - An individual who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Complete Abatement - Abatement of all lead-based paint inside or outside a dwelling or building and reduction of any lead-contaminated dust or soil hazards. All of these strategies require

preparation; cleanup; post abatement clearance testing; record keeping; and, if applicable, reevaluation and on-going monitoring.

Deteriorated Paint - Paint that is peeling, flaking, chalking, scaling, or chipping ; paint that is over a defective or deteriorated substrate; or paint that is damaged in any manner such that a child can get paint from the damaged area. Deteriorated paint shall be classified as either in fair condition or poor condition.

Elevated blood lead level - A blood lead concentration as defined in Regulations of the State of Connecticut. A blood lead concentration equal to or greater than forty (40) micrograms per deciliter ($\mu\text{g}/\text{dl}$) as defined in OSHA Standard 1926.62.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking of substances containing lead-based paint.

Enclosure - The use of rigid, durable construction materials that are mechanically fastened to the substrate to act as a barrier between the lead-based paint and the environment.

Engineering Controls - Measures implemented at the work site to contain, control, and/or otherwise reduce worker exposure to, and environmental releases of lead dust and debris.

Evaluation - Risk assessment, paint inspection, reevaluation, investigation, clearance examination, or risk assessment screen.

Fixed Object - A unit of equipment or furniture in the work area which cannot, as determined by the State, be removed from the work area.

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

1. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
2. Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
3. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
4. Is not excluded from regulation as a hazardous waste.

Inspection - A surface-by surface investigation to determine the presence of lead-based paint (in some cases including dust and soil sampling) and a report of the results.

Inspector - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to (1) perform inspections to determine and report the presence of lead-based paint on a surface-by-surface basis through on-site testing, (2) report the findings of such an inspection, (3) collect environmental

samples for laboratory analysis, (4) perform clearance testing, and (5) document successful compliance with lead-based paint hazard control requirements or standards.

Intact Surface - A defect-free surface with no loose, peeling, chipping, or flaking paint. Painted surfaces must be free from crumbling, cracking or falling plaster and must not have holes in them. Intact surfaces must not be damaged in any way.

Interim Controls - A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include specialized cleaning, repairs, maintenance painting, temporary containment, and management and resident education programs. Interim controls also 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.

Lead Abatement Plan - A written plan that identifies the location of intact and defective lead-based paint and describes how defective lead-based surfaces will be abated and how the environment, health, and safety will be protected.

Lead-Based Paint - Paint or other surface coatings that contain lead equal to or greater than 1.0 milligrams of lead per square centimeter or greater than 0.5% by weight.

Lead-Based Paint Hazard - Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health. Lead-based paint hazards include for example, deteriorated lead-based paint, leaded dust levels above applicable standards, and bare leaded soil above applicable standards.

Lead-Based Paint Hazard Control - Activities to control and eliminate lead-based paint hazards, including interim controls, abatement, and complete abatement.

Lead-Based Paint Abatement Planner/ Designer - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 for planning and designing lead-based paint abatement projects.

Lead Consultant - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to perform as an inspector, risk assessor or planner/designer

Lead Control Area - An area where lead abatement operations are performed where airborne concentrations of lead dust exceed or can reasonably be expected to exceed the permissible exposure limit. The lead control area is isolated by physical boundaries from occupied areas to prevent the spread of lead dust, paint chips, debris, and unauthorized entry of personnel.

Lead-Free Dwelling - A lead-free dwelling contains no lead-based painted surfaces and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Lead Hazard Screen - A means of determining whether residences in good condition should have a full risk assessment. Also called a risk assessment screen.

Lead-Safe Dwelling - A lead-safe dwelling contains intact, or encapsulated lead-based paint and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Manifest - The shipping document (EPA Form 8700-22 or a comparable form required by the State or locality) used for identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transport from the point of generation to the point of treatment, storage, or disposal.

Paint Film Stabilization - The process of wet scraping, priming, and repainting surfaces coated with deteriorated lead-based paint; paint film stabilization includes cleanup and clearance.

Paint Removal - An abatement strategy that entails the removal of lead-based paint from surfaces. For lead hazard control work, this can mean using chemicals, heat guns below 700 degrees Fahrenheit, and certain contained abrasive methods. Open flame burning, open abrasive blasting, sand blasting, water blasting and extensive dry scraping are prohibited paint removal methods.

Permissible Exposure Limit (PEL) - Fifty (50) micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air averaged over an 8 hour period as determined by 29 CFR 1926.62.

Personal Monitoring - Sampling of lead concentrations within the breathing zone of a worker to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employee's work tasks.

Reevaluation - In lead hazard control work the combination of a visual assessment, and collection of environmental samples performed by a certified risk assessor to determine if a previously implemented lead-based paint hazard control measure is still effective and if the dwelling remains lead-safe.

Replacement - A strategy of abatement that entails removing components such as windows, doors, and trim that have lead painted surfaces and installing new or de-lead components free of lead-based paint.

Risk Assessment - A on-site investigation of a residential dwelling to discover any lead-based paint hazards. Risk assessments include an investigation of the age, history, management, and maintenance of the dwelling, and the number of children under age 6 and women of childbearing age who are residents; a visual assessment; limited environmental sampling (i.e., collection of dust wipe samples, soil samples, and deteriorated paint samples); and preparation of a report identifying acceptable abatement and interim control strategies based on specific conditions.

Risk Assessment Screen - A type of risk assessment performed only in buildings in good condition using fewer samples but more stringent evaluation criteria (standards) to determine lead hazards.

Inspector Risk Assessor - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health Sections 20-478-1 through 20-478-3 to (1) perform risk assessments, (2) identify acceptable abatement and interim control strategies for reducing identified lead-based paint hazards, (3) perform clearance testing and reevaluations, and (4) document the successful completion of lead-based paint hazard control activities.

Toxicity Characteristic Leaching Procedure (TCLP) - Toxicity characteristic leaching procedure utilizing EPA Test method SW-846, Method 1311 to determine whether waste can be classified as hazardous or construction waste for disposal purposes.

Visible Residue - Any paint debris, dust, or chips on surfaces within the work area where lead abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating lead dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous lead waste.

Wipe Test - A test used to determine the concentration of lead particles; used to determine whether clearance levels for lead abatement have been achieved. A wipe test assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of lead contained in that area.

X-ray Fluorescence (XRF) Analyzer - An analytical instrument which measures lead concentration of dried paint on surfaces or in a laboratory sample in milligrams per square centimeter (mg/cm²) using a radioactive source within the instrument. There are two types of XRF-analyzers commonly available which require distinct and different testing protocols - "direct read" and "spectrum analyzer".

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. State of Connecticut, Department of Public Health Regulations (DPH)

Section 19a-111-1 through 19a-111-11 - Lead Poisoning Prevention And Control Regulations.

Section 20-478-1 through 20-478-3 - Lead Licensure and Certification Regulations.
 2. State of Connecticut, Department of Environmental Protection (DEP)

Section 22a-209-1 through 22a-209-16 - Solid Waste Management Regulations.

Section 22a-449(c)-100 through 22a-449(c)110 and 22a-449(c)-11 - Hazardous Waste Management Regulations.
 3. Occupational Safety and Health Administration (OSHA)

24 CFR 35 - Lead Based Paint Poisoning Prevention.

29 CFR 1910.134 - Respiratory Protection.

29 CFR 1910.146 - Permit-Required Confined Spaces.

29 CFR 1926.21 - Safety Training.

29 CFR 1926.28 - Personal Protective Equipment.
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29 CFR 1926.55 - Gases, Vapors, Fumes, Dusts, and Mists.

29 CFR 1926.57 - Ventilation.

29 CFR 1926.59 - Hazard Communication.

29 CFR 1926.62 - Lead.

29 CFR 1926.103 - Respiratory Protection.

4. Environmental Protection Agency (EPA)

40 CFR 260 - Hazardous Waste Management Systems: General.

40 CFR 261 - Identification and Listing of Hazardous Waste.

40 CFR 262 - Generators of Hazardous Waste.

40 CFR 263 - Transporters of Hazardous Waste

40 CFR 264 - Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 268 - Land Disposal Restrictions

40 CFR 745 - Subpart F - Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards Upon Sale or Lease of Residential Property.

40 CFR 745 - Subpart L - Lead-Based Paint Activities.

40 CFR 745 - Subpart Q - State and Indian Tribal Programs.

5. Department of Transportation (DOT)

49 CFR 172 - Hazardous Materials Tables and Hazardous Materials Communications Regulations

49 CFR 178 - Shipping Container Specification

6. Department of Housing and Urban Development (HUD)

Lead-Based Paint: Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.

1.5 DOCUMENTATION

A. Submit the following documentation to ensure compliance with applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

- HEPA Vacuum Equipment
- Respirators
- Lead Specific Detergent
- Lead Encapsulating Materials
- Portable Shower Units and Hand Washing Facilities
- Chemical Removal Agents
- Neutralizers for Chemical Removal Agents
- MSDS for All Materials

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Blood Lead Level
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Lead Abatement Plan

1. Copies of all required approvals and permits for disposal and transport of hazardous lead-bearing waste including the HW identification number of the waste hauler.
 2. Documentation from a physician certifying that all employees who may be exposed to airborne lead dust in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.62. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants to which he/she may be exposed. Training certificates, licenses, respirator fit test certificate and medical records (including pre-abatement blood lead levels and medical clearance to wear a respirator) for each lead abatement worker shall be available.
 3. Documentation certifying that all employees have received training in the proper handling of materials that contain lead dust; understand the health implications and risks involved, including the illnesses possible from exposure to airborne lead dust fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of lead dust as related to health and respiratory equipment as indicated in 29 CFR 1926.62 on an initial and annual basis.
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4. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.62.
5. Qualifications of the laboratory and person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with 29 CFR 1926.62. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
6. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness and injury. Include any site specific information to address health and safety procedures unique to this project.
7. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of the continued effectiveness of the program; and other elements included in the standard.
8. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks, such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and contain information on how other contract employers will be informed about hazards their employees may encounter while working in the facility.
9. Written description of lead abatement activities planned detailing methods, equipment, engineering controls, crew size, employee job responsibilities, operating and maintenance procedures.

D. Records:

Worker Medical Records (including post-abatement blood-lead levels).
Worker Personal Air Sampling Results.
Certified Lead Waste Manifests.
TCLP Laboratory Results.

1.6 PERSONAL PROTECTION

- A. Prior to commencing work, instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment, including procedures unique to this project. A formal respiratory protection program must be implemented in accordance with 29 CFR 1926.62.
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- B. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.62. Provide appropriate respiratory protection equipment for each worker and ensure usage during potential lead dust exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements on the job whenever required for respirators in use.
- C. During the period of initial personal monitoring, personal exposure levels shall be presumed to be as specified in Table 1 with respiratory protection selected in compliance with Table 2. Following the initial personal monitoring period, select respirators using Table 2 and the personal monitoring data. Conducting a lead abatement activity without the use of a respirator is not permitted unless the personal monitoring data for that activity are all below the action level of 30 µg/cubic meter.

TABLE 1

<u>Activity</u>	<u>Presumed Exposure</u>
Removal of painted component	<50 µg/cubic meter
Manual demolition Manual scraping Manual sanding Chemical removal Manual wire brushing Encapsulation Cleanup of chips, dust, or contaminated soil Shrouded power sanding, grinding, wire brushing, or needle gun removal	<500 µg/cubic meter
Abrasive Blasting Welding Cutting, and Torch Burning	<2500 µg/cubic meter

TABLE 2

<u>Airborne Lead Dust Level</u>	<u>Required Respirator</u>
Not in excess of 500 µg/cubic meter(10xPEL)	Half-mask air-purifying respirator equipped with HEPA filters.
Not in excess of 2,500 µg/cubic meter(50xPEL)	Full face piece powered air- purifying respirator equipped with HEPA filters.

- D. Workers shall wear protective clothing in work areas where lead dust concentrations exceed permissible exposure limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing is disposed of as lead-contaminated waste. Launderable clothing must be handled and washed in accordance with 29 CFR 1926.62.
- E. Workers wearing half-mask respirators shall also wear safety glasses with side shields.
- F. Provide protective clothing impervious to caustic materials during chemical removal activity. Provide gloves of neoprene composition during chemical removal activity. Provide face shields when conducting chemical removal above eye level. Provide organic vapor cartridges in addition to HEPA cartridges when conducting chemical removal activity.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with lead shall be decontaminated or disposed of as lead waste.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints, shall be delivered to the job site with factory label indicating 6 mil.
 - B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
 - C. Protective clothing used during chemical removal operations shall be impervious to caustic materials. Gloves used during chemical removal shall be of neoprene composition with glove extenders.
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- D. Polyethylene disposable bags shall be six (6) mil and transparent in color.
- E. Detergent shall be a high phosphate content lead specific cleaning agent.
- F. Chemical paint removal agents shall not contain methylene chloride. Chemical removers used on masonry surfaces shall contain anti-stain formulation that inhibits discoloration of stone, granite, or brick. Chemical removers used on wood surfaces shall not raise or discolor the surface being abated.
- G. Chemical removal agent neutralizer shall be compatible with the substrate which they are applied to and the chemical stripper they are used in conjunction with.
- H. Encapsulants must appear on the State of Connecticut, Department of Public Health, Childhood Lead Poisoning Prevention Program Registry of Authorized Encapsulant Products. Only listed products are authorized for use in Connecticut by the Department of Public Health. Encapsulants are classified as cementitious or liquid. The project work order shall indicate the encapsulant type and location of application.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for lead removal:
- B. Air monitoring equipment shall be of the type and quantity required to monitor operations and conduct personnel exposure surveillance in accordance with OSHA requirements.
- C. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. One shower stall shall be provided for each eight workers.
- E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger.
- F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
- G. For manual scraping activities, Contractor shall supply each worker with multiple newly sharpened scrapers on a daily basis.
- H. Sanders, grinders, wire brushes and needle gun removal equipment shall be equipped with a HEPA filtered vacuum dust pick-up system.
- I. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the work area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR LEAD ABATEMENT

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the work area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1926.62 at each work area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the work area a worker decontamination enclosure consisting of equipment room, shower room, and clean room in series. Access between rooms in the worker decontamination enclosure shall be through double flap curtained openings. The shower room shall be of sufficient capacity to accommodate the lead abatement workers employed at the project. Supply warm water to showers. Provide one shower for each eight workers. The change room and wash facilities shall be equipped with suitable hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Shower and wash water shall be collected, filtered, and disposed of as specified in paragraph 3.16.
- C. Establish remote to the work area hand washing facilities. All workers shall wash prior to eating.
- D. No personnel shall be permitted to leave the work site or eat lunch unless first decontaminated by wet washing and HEPA vacuuming to remove all lead debris.
- E. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all lead debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
 - B. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of work area and occupied areas. Equip doors leading into the lead control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
 - C. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
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- D. Provide drop cloths to catch falling paint chips and chemical removal agents at interior work areas.
- E. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of work area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- F. Remove the building component or the LBP by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- G. Building components which have been removed shall be recycled where feasible.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. For dry waste place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. For liquid waste extend the end of the plastic a sufficient distance to contain the runoff and raise the edge of the sheets to trap liquid waste.
- D. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- E. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- F. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF LEAD WORK AREA FROM OCCUPIED AREAS

- A. Work area separation shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
- C. Do not impair all building exits simultaneously from any occupied building area.
- D. Shut all windows on the face of the building where lead paint removal is occurring. Seal all air conditioner intake grates and vents on the face of the building where lead paint removal is occurring.

3.6 CHEMICAL PAINT REMOVAL

- A. Apply chemical stripper in quantities and for duration's specified by manufacturer.
- B. Remove lead-based paint from surface down to bare substrate with no trace of residual pigment. Use sanding, hand scraping, and dental picks to supplement chemical methods as required to remove residual pigment.
- C. Apply neutralizer compatible with substrate and chemical agent to substrate following removal in accordance with manufacturer's instructions.
- D. Protect adjacent surfaces from damage by chemical removal methods.
- E. Maintain a portable eyewash station in the work area.

3.7 MECHANICAL PAINT REMOVAL

- A. Sanders, grinders, rotary wire brushes, or needle gun removers shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
 - B. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
 - C. Remove all lead based paint from surface down to bare substrate with no trace of residual pigment. Use chemical methods, hand scraping, and dental picks to supplement abrasive removal methods as required to remove residual pigment.
 - D. Protect adjacent surfaces from damage from abrasive removal techniques.
 - E. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to paint film stabilization or encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
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3.8 PROHIBITED PAINT REMOVAL METHODS

- A. The use of heat guns, or any blasting media, or power tool assisted grinding, sanding, cutting, or wire brushing without the use of HEPA vacuum dust collection systems to remove lead-based paint is prohibited.
- B. Welding or torch cutting of materials painted with lead-based paint is prohibited. Where cutting, welding, rivet busting, or torch cutting of materials is required, prior removal of the lead-based paint shall be performed in the affected area.
- C. Dry scraping.

3.9 SOIL REMOVAL

- A. Remove soil to a depth of 6 inches by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of paint chips are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all lead-based paint containing surfaces.
 - D. Enclosure materials shall be mechanically fastened to existing framing members. Caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.
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3.12 ENCAPSULATION

- A. Procedures for the application of encapsulation products shall be in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals.
- B. Application of encapsulants to friction or impact surfaces is prohibited.
- C. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
- D. Prior to application of encapsulants, perform the tape, X-cut tape and patch tests in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals to determine if the surface is suitable for encapsulation.
- E. Follow the encapsulant manufacturers printed application instructions.
- F. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62. This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove lead chips or dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Operational shower facilities, remote to the Lead Control Area, shall be provided by the contractor and maintained in working order such that any worker has the option of decontamination by showering. If air monitoring data by the contractor or Owner's inspector or risk assessor shows that employee exposure to airborne lead exceeds 50 µg/m³, the following mandatory showering conditions apply:
 - 1. Street clothes cannot be worn into the Lead Control Area and shall be stored in the change room. Workers shall wear disposable suits over clothing that stays on site in the change room, or disposable suits over nylon or Tyvek undergarments, or coveralls that are laundered on site.
 - 2. Street shoes cannot be worn into the Lead Control Area and shall be stored in the change room. Dedicated shoes that do not leave the Lead Control Area may be utilized. Work shoes covered by disposable booties may be utilized if the shoes are cleaned after each use and kept in the change room.
 - 3. Showers must be utilized.
- C. Ensure proper entry and exit procedures for all persons who enter and leave the Lead Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of paint chips and associated dust and debris. During clean-up, utilize rags and sponges wetted with lead-specific detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous lead-bearing waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 CLEARANCE

- A. A certified Inspector or Inspector Risk Assessor shall conduct all clearance testing inspections. Clearance dust sampling should be performed no sooner than 1 hour after completion of the final cleanup to permit the dust to settle.
- B. Visual Inspection Protocol: Visual inspection will verify the work has been completed and the area in which the work was performed does not contain visible dust.
- C. Dust Sampling Protocol: For interior abatement in facilities scheduled for reoccupancy where documentation that the work area has been adequately cleaned to meet CT DPH regulations Section 19a-111-4(e) is desired use the following testing protocol:
 - 1. Following the final visual inspection, a certified Inspector or Inspector Risk Assessor shall take lead wipe samples from the area that has undergone interior lead abatement activity.
 - 2. Following wipe analysis, if lead dust levels are in excess of the limits as set forth in the Regulations of Connecticut State Agencies, Section 19a-111-4.

The Contractor shall repeat HEPA vacuuming and wet-wiping the entire room. Repeat the testing and cleaning sequence until the standard for clearance has been achieved.

- D. For soil abatement or exterior abatement situations where documentation of soil decontamination is desired use the following testing protocol:
 - 1. For contaminated soil abatement areas a certified inspector or risk assessor shall take post-abatement soil samples (one (1) composite sample for every 500 square feet of abated soil area at randomly selected locations) and have the samples analyzed by atomic absorption for lead content. Samples shall be taken using a steel trowel to extract soil to a depth of four (4) inches. Three (3) randomly selected samples shall be taken from each 500 square foot area and the three (3) samples shall be mixed into one container for analysis.
 - 2. If any of the post-abatement soil samples exceed 2000 milligrams of lead per kilogram of soil analyze baseline soil samples to determine if the soil had a high lead level prior to the work.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous lead bearing material must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to leach lead at hazardous levels in excess of 5 mg/liter. The Contractor shall containerize and dispose of the following materials as hazardous lead waste at an EPA approved treatment, storage, and disposal facility:
1. Paint chips
 2. Paint dust
 3. Sludge from chemical stripping
 4. Dust from HEPA filters and from damp sweeping
 5. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 6. Disposable work clothes and respirator filters
 7. Contents of HEPA vacuums used on this project
 8. Polyethylene sheeting used during the course of chemical removal or heat gun removal
 9. All used duct tape
- C. Contractor shall transport the following materials generated during renovation activity to a scrap metal yard for recycling:
1. Any metal components painted with lead based paint
 2. Metallic lead components
- D. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
1. Polyethylene sheeting used in abatement activities other than chemical or heat gun removal
- E. Contractor shall collect the wash water generated by the worker shower, wash facilities, or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
1. 5 micron porosity in-line cartridge particulate filter followed by:
 2. Activated carbon filter in-line cartridge
- Hold the filtered water for testing by the State's Inspector or risk assessor prior to discharge to the sanitary sewer. The State's Inspector or risk assessor shall test the water and verify lead levels below 0.1 parts per million (ppm) and Ph between 6 and 8 prior to discharge. Water that fails the testing criteria shall be treated with sodium hydroxide, Ph adjusted, and retested. If the second test fails the 0.1 parts per million (ppm) of water test, Contractor shall filter waste water by reverse osmosis prior to testing and discharge to the sanitary sewer.
- F. All hazardous lead waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 29 CFR 1926.62 and 49 CFR 172 to identify the type of waste and the date the container was filled.
- G. The Contractor may not store containerized hazardous lead waste on the job site for in excess of 180 calendar days from the accumulation start date.
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- H. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- I. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

END OF SECTION 02 83 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the remediation of building components contaminated with mold and the abatement of hazardous materials. Remediation and abatement activities shall be performed by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of mold and hazardous materials, and the subsequent cleaning of the affected environment. Specific requirements for mold and hazardous materials remediation will be established by the Owner's Environmental Consultant. These requirements are to include, but are not limited to: containment and negative air requirements; specific work practices or methods of accomplishing remediation and establishment of the clearance standard for reoccupancy.
- B. The Owner will retain the services of an Environmental Hygienist for protection of its interests and those using the building. Monitoring will be conducted as deemed necessary.
- C. Restore all work areas and auxiliary areas utilized during remediation to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the Owner as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on mold and hazardous materials), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
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- B. A description of the scope of work will be attached to each individual project work order.
- C. The Contractor shall provide these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. In addition, the Contractor shall acquire professional training in mold abatement, and become familiar with technical and reference materials referenced in the State of Connecticut, Department of Public Health (DPH) “*CT Guidelines for Mold Abatement Contractors*”. This document refers readers to the most current version available of the *Institute for Inspection, Cleaning and Restoration Certification (IICRC), Standard and Reference Guide for Professional Mold Remediation, S520*, which provides a detailed discussion about the technical aspects of mold abatement.
- D. The Contractor shall provide these services in accordance with the guidelines established in the documents listed below, and any subsequent updated re-issues of the documents:
- Connecticut Guidelines for Mold Abatement Contractors, 2006, Connecticut Department of Public Health (DPH);
 - Standard and Reference Guide for Professional Mold Remediation, S520, December 2003, Institute for Inspection, Cleaning and Restoration Certification (IICRC) ;
 - Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health, 2006;
 - Mold Remediation in Schools and Commercial Buildings, March 2001, United States Environmental Protection Agency (US EPA);
 - Fungal Contamination in Buildings: A Guide to Recognition and Management, Health Canada, 1995;
 - The Industrial Hygienist's Guide to Indoor Air Quality Investigations, 1993 (AIHA);
 - Building Air Quality, A Guide for Building Owners and Facility Managers, 1991 (US EPA);
 - Bioaerosols: Assessment and Controls, 1999, American Conference of Governmental Industrial Hygienists (ACGIH);
 - Field Guide for the Determination of Biological Contaminants in Environmental Samples, 1996, American Industrial Hygiene Association (AIHA);
 - Complete School Guidance Document, DPH;
 - Ventilation for Acceptable Indoor Air Quality, ANSI/ASHRAE Standard 62-2001;
 - Indoor Air Quality – A Systems Approach, Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA);
 - IAQ Guidelines for Occupied Buildings Under Construction, SMACNA.
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1.3 DEFINITIONS

Accessible - A space easily accessed, and which can be entered or seen without demolition.

Competent Person - An individual who is capable of identifying existing and predictable mold and/or other hazardous materials in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.

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

DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.

DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.

Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking.

Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.

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

Exposed - Open to view.

Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.

Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.

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

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

- Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
- Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
- Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
- Is not excluded from regulation as a hazardous waste.

HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.

Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area.

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

Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.

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

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

Visible Residue - Any debris, dust, or chips on surfaces within the work area where abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous waste.

Wipe Test - A test used to determine the concentration of dust particles; used to determine whether clearance levels for mold and/or hazardous materials abatement have been achieved. A wipe test

assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of mold and/or hazardous materials contained in that area.

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

1.4 REFERENCES

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

1. Occupational Safety and Health Administration (OSHA)

29 CFR 1926.21 - Safety Training and Education.

29 CFR 1926.32 - Definitions.

29 CFR 1926.51 - Sanitation.

29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.

29 CFR 1926.59 - Hazard Communication.

29 CFR 1926.200 - Accident Prevention Signs and Tags.

29 CFR 1926.417 - Lockout and Tagging of Circuits.

2. American National Standards Institute (ANSI)

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

ANSI Z88.2 - Respiratory Protection.

3. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.

ASTM E 96 - Water Vapor Transmission of Materials.

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

4. Underwriters Laboratories, Inc. (UL)

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

1.5 DOCUMENTATION

A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

- Local Exhaust Equipment
- Respirators
- Pressure Differential Automatic Recording Instrument
- Polyethylene Sheeting
- Airless Sprayers
- MSDS for All Materials Delivered to the Site
- Biocides
- Cleaning Chemicals
- Encapsulating Materials
- HEPA Vacuum Equipment

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Mold and/or Other Hazardous Materials Abatement Plan

D. Records:

- Sign-in/out Logs
- Personal Air Sampling Results
- Waste Shipment Records
- Pressure Differential Recording Data
- NPE Inspection and Smoke Test Logs

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134. Provide appropriate respiratory protection for each worker and ensure usage during potential mold and/or other hazardous materials exposure whenever engineering and work practice controls are not adequate to prevent atmospheric contamination at the job site. Select respirators from among those approved as being acceptable for protection by the National Institute for Occupational Safety and Health (NIOSH). Provide an adequate supply of filter elements on the job whenever required for respirators in use.
 - B. Provide dermal and respiratory protection for all workers to wear in the Work Areas. The selection of personal protective equipment depends on the anticipated exposure, types of microbial and/or hazardous materials contamination, activities to be completed and potential hazards of chemicals that may be used in the remediation process. Personal protective equipment can consist of: respirator, eye protection, disposable impervious coveralls (including hood and booties) with elastic wrists and ankles, foot protection, hand protection, head protection, and hearing protection. In accordance with 29 CFR 1910.32, each worker shall be provided with the necessary personal protective equipment to reduce the risk of exposure to chemical, physical, or biological hazards.
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1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with mold and/or hazardous waste shall be decontaminated or disposed of appropriately.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating six (6) mil.
- B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- C. Scrub brushes, disposable sponges and towels as appropriate for the work.
- D. Biocides shall be specific for the intended purpose of cleaning mold contamination from building components or materials.
- E. Containers must be impermeable and shall be both air and watertight.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for the work.
 - B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
 - C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
 - D. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Work Area.
 - E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
 - F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
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- G. Removal equipment (including, but not limited to sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust pick-up system.
- H. Other materials such as lumber, nails and hardware necessary to construct and dismantle the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR REMEDIATION

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the Work Area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1910.37 (egress means and exits) and OSHA 29 CFR 1910.145 (biological hazards, caution, and dangers) at each Work Area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.
- D. Containerize waste material removed daily. Do not allow debris to remain on the floor. Fill disposal containers as removal proceeds, seal filled containers.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the Work Area hand washing facilities. All workers shall wash prior to eating.
- C. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all mold and/or other hazardous material debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
 - B. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
 - C. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.
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- D. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- E. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the Work Areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of Work Area and occupied areas. Equip doors leading into the control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
- F. As indicated in the individual work order, occupied areas and/or building space not within control areas may be separated from abatement Work Areas by means of airtight barriers.
- G. Cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- H. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- I. Remove the building component by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- J. Building components which have been removed shall be recycled where feasible.
- K. Conspicuously label and maintain emergency and fire exits satisfactory to the Owner.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
- B. Place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- D. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- E. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF WORK AREA FROM OCCUPIED AREAS

- A. Work Area separation shall be as indicated in the individual work order.
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- B. As indicated in the individual work order, occupied areas and/or building space shall be separated from Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- C. Do not impair all building exits simultaneously from any occupied building area. Where normal exits have been blocked by the abatement work, provide temporary exit signs directing building occupants to the nearest available exit location.
- D. Shut all windows on the face of the building where abatement is occurring. Seal all air conditioner intake grates and vents on the face of the building where abatement is occurring.
- E. As indicated in the individual work order, create a pressure differential between the Work Area and occupied areas by the use of acceptable pressure differential equipment.

3.6 MECHANICAL MOLD AND/OR HAZARDOUS MATERIAL REMOVAL

- A. Remove building components or materials in accordance with the specific description of work to be accomplished. Methods for component removal shall be appropriate for the work and are to be performed in a manner to minimize the risk of contamination in other areas of the building.
- B. Removal equipment (including, but not limited to, sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
- C. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
- D. As indicated in the individual work order, remove all mold and/or hazardous materials from surface down to bare substrate with no trace of residual material. Use wet wiping, wet sponging, wet scraping, and wet brushing (with a nylon brush) to supplement abrasive removal methods as required to remove residual material (wire brushes are not permitted).
- E. Protect adjacent surfaces from damage from abrasive removal techniques.
- F. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
- G. During removal, spray the work area with water using airless spray equipment capable of providing a "mist" application to reduce airborne dust. Hose length shall be sufficient to reach all of the work area. Do not "flood" the area with hose type water supply equipment with the potential to create water releases from the work area.

3.7 PROHIBITED MOLD AND/OR HAZARDOUS MATERIAL REMOVAL METHODS

- A. Dry scraping.
- B. Wire brushes.

3.8 CLEANING OF CONTAMINATED BUILDING COMPONENTS OR MATERIALS

- A. Clean building components or materials in accordance with the specific description of work provided by the Owner Environmental Hygienist. Methods for cleaning shall be appropriate for the work to be performed.
- B. All surfaces from which mold and/or other hazardous materials have been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). Cleaning shall also include the use of HEPA filtered vacuum equipment
- C. Cleaning shall proceed in a manner such that dislodged materials will be collected on rags or by the HEPA vacuum equipment. Methods that agitate contamination are not permitted.
- D. Biological agents shall be used in strict accordance with the manufacturer's printed instructions. Biological agents may only be applied to clean or cleaned surfaces.

3.9 SOIL REMOVAL

- A. As indicated in the individual work order, remove soil to the indicated depth by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of hazardous materials are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose hazardous materials and appropriately wash down the surface. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all mold and/or hazardous-material containing surfaces.
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- D. Enclosure materials shall be mechanically fastened to existing framing members. As indicated in the individual work order, caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.

3.12 ENCAPSULATION

- A. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose mold and/or hazardous materials. Repair all substrate damage with an appropriate patching material.
- B. Follow the encapsulant manufacturers printed application instructions.
- C. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f). This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Ensure proper entry and exit procedures for all persons who enter and leave the Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of mold and/or hazardous material dust and debris. During clean-up, utilize rags and sponges wetted with detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 POST-REMEDIATION ASSESSMENT

- A. Specific requirements prior to reoccupancy of the remediated area will be established by the Owner Environmental Consultant.
 - B. The post-remediation assessment will include a visual inspection, bioaerosol sampling and ~~dust~~ wipe sampling. The extent of sampling and specific cleanliness requirements for each project will be established prior to remediation. Sampling requirements will be consistent with the level of contamination remediated.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management or other designated agency having jurisdiction over solid waste disposal and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to contain hazardous materials. The Contractor shall containerize and dispose of the following materials as hazardous waste at an EPA approved treatment, storage, and disposal facility:
 - 1. Dust from HEPA filters and from damp sweeping
 - 2. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 - 3. Disposable work clothes and respirator filters
 - 4. Contents of HEPA vacuums used on this project
 - 5. All used duct tape
- C. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
 - 1. Polyethylene sheeting used in abatement activities
- D. Contractor shall collect the wash water generated by the wash facilities or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
 - 1. 5 micron porosity in-line cartridge particulate filter followed by:
 - 2. Activated carbon filter in-line cartridge
- E. All hazardous waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 49 CFR 172 to identify the type of waste and the date the container was filled.
- F. The Contractor may not store containerized hazardous waste on the job site for in excess of 180 calendar days from the accumulation start date.
- G. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- H. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

3.18 REMOVAL OF HAZARDOUS MATERIALS

- A. Removal of fluorescent fixture components may require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.
- B. Removal of other materials identified during mold remediation work shall be accomplished in accordance with all applicable Federal and State regulations.

END OF SECTION 02 85 00

EXHIBIT B-1 ASBESTOS

AAIS								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
ASBESTOS REMOVAL								
AR-001	CLEAN-UP OF ACM DEBRIS BY HEPA VACUUMING		SF	\$0.24				
AR-002	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS (FULL CONTAINMENT - < 6" DIA)		LF	\$1.45				
AR-003	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - 6" - 12" DIA)		LF	\$2.17				
AR-004	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - >12" DIA)		LF	\$2.89				
AR-005	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - FIRST 25)		EA	\$20.23				
AR-006	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY BETWEEN 25-50)		EA	\$17.34				
AR-007	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY IN EXCESS OF 50)		EA	\$14.45				
AR-008	REMOVAL OF EQUIPMENT INSULATION		SF	\$2.89				
AR-009	REMOVAL OF HVAC DUCT INSULATION		SF	\$2.89				
AR-010	REMOVAL OF HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$2.17				
AR-011	REMOVAL OF RESILIENT FLOORING INCLUDING MASTIC		SF	\$0.87				
AR-012	REMOVAL OF RESILIENT FLOORING (NO MASTIC)		SF	\$0.43				
AR-013	REMOVAL OF SPRAYED ON FIREPROOFING		SF	\$1.73				
AR-014	REMOVAL OF PLASTER CEILING SYSTEM (INCLUDING BLACK IRON AND METAL LATH)		SF	\$2.17				
AR-015	REMOVAL OF ACOUSTIC OR METAL PAN CEILING SYSTEM (INCLUDING GRID)		SF	\$1.45				
AR-016	REMOVAL OF ACOUSTIC CEILING PANELS (CLEAN GRID FOR REUSE)		SF	\$1.16				
AR-017	REMOVAL OF ACOUSTIC PLASTER FINISH MATERIAL (SCRAPE)		SF	\$1.88				
AR-018	PATCH AND/OR SEAL DAMAGED INSULATION		SF	\$0.87				
AR-019	REMOVAL OF CONTAMINATED SOIL (2" DEPTH)		SF	\$1.16				
AR-020	REMOVAL OF TRANSITE MATERIAL		SF	\$0.72				
AR-021	REMOVAL OF ROOFING OR ROOF FLASHING MATERIAL		SF	\$1.01				
AR-022	REMOVAL OF UNDERGROUND PIPE OR PIPE INSULATION (INCLUDING HAND EXCAVATION)		LF	\$8.67				
AR-023	REMOVAL OF CARPET OVER RESILIENT FLOORING		SF	\$0.72				
AR-024	REMOVAL OF WALL BASE AND MASTIC		LF	\$0.72				
AR-025	REMOVAL OF DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$0.58				
AR-026	REMOVAL OF CMU WALL		SF	\$1.45				
AR-027	PREP WORK AREA		SF	\$0.97				
AR-028	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$0.72				
AR-029	SELECTIVE DEMOLITION TO ACCESS CONCEALED ACM		SF	\$0.87				
AR-030	REMOVAL OF FLOOR LEVELING MATERIAL		SF	\$0.58				

EXHIBIT B-1 ASBESTOS

AAIS								
MISCELLANEOUS ITEMS								
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$250.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$250.00				
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA	\$250.00				
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY	\$20.00				
MI-007	DISPOSAL OF ACM WASTE (INCLUDES TRANSPORTATION)	COST+10%	CY	\$55.00				
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY	\$250.00				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY	\$25.00				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	\$26.00				
MI-013	FIXED SCAFFOLDING	COST+10%	SF	\$10.00				
MI-014	EXCAVATION TO EXPOSE UNDERGROUND PIPE	COST+10%	CY	\$15.00				
MI-015	PROJECT NOTIFICATION AND FEES	COST+10%	EA					
MI-016	PROJECT BOND (3% OF CONTRACT)	COST+10%	EA					
REWORK ITEMS								
RW-001	REINSULATE PIPE 1" THICK FIBERGLAS ASJ		SF	\$2.71				
RW-002	REINSULATE PIPE 1 1/2" THICK FIBERGLAS ASJ		SF	\$3.61				
RW-003	REINSULATE PIPE 2" THICK FIBERGLAS ASJ		SF	\$3.61				
RW-004	REINSULATE PIPE FITTING 1" THICK FIBERGLAS ASJ		EA	\$4.34				
RW-005	REINSULATE PIPE FITTING 1 1/2" THICK FIBERGLAS ASJ		EA	\$5.43				
RW-006	REINSULATE PIPE FITTING 2" THICK FIBERGLAS ASJ		EA	\$6.50				
RW-007	REINSULATE MECHANICAL EQUIPMENT 3 PCF, 2" THICK		SF	\$3.50				
RW-008	REINSULATE HVAC DUCT SYSTEM (FLEXIBLE DUCT WRAP) 0.75 PCF, 1 1/2" THICK		SF	\$2.50				
RW-009	REINSULATE HVAC DUCT SYSTEM (RIGID BOARD) 3 PCF, 1 1/2" THICK		SF	\$6.00				
RW-010	REPLACE HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$7.23				
ESCALATION FACTORS								
EF-1	WORK SURFACES 10-20' HIGH		1.15					
EF-2	WORK SURFACES OVER 20' HIGH		1.30					
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)		1.30					
EF-4	EMERGENCY RESPONSE (<24 HOUR)		1.30					
EF-5	CONFINED SPACE WORK		1.15					
EF-6	REMOVAL OF MULTIPLE LAYERS OF RESILIENT FLOORING (EACH ADDITIONAL LAYER)		1.50					
EF-7	REMOVAL ON LIVE STEAM SYSTEM		1.25					
EF-8	EXTERIOR WORK		1.30					
			WORK ORDER TOTAL					

EXHIBIT B-2 LEAD

AAIS							
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	Unit Cost \$0.00			
	<u>PAINT REMOVAL</u>						
SP-001	REMOVE LOOSE PAINT FROM WALLS OR CEILINGS (WET SCRAPING OR BRUSHING)		SF	\$0.73			
SP-002	STRIP PAINT FROM FLAT SURFACES		SF	\$2.31			
SP-003	STRIP PAINT FROM COLUMNS AND STRUCTURAL FRAMING MEMBERS		SF	\$2.89			
SP-004	STRIP PAINT FROM STAIR TREADS, RISERS AND STRINGERS		SF	\$4.34			
SP-005	STRIP PAINT FROM TRIM		LF	\$2.17			
SP-006	STRIP PAINT FROM DOORS (DOOR OPENING SIZE)		SF	\$3.61			
SP-007	STRIP PAINT FROM WINDOW (WINDOW SIZE)		SF	\$5.78			
SP-008	STRIP PAINT FROM RADIATOR		SF	\$7.23			
SP-009	STRIP PAINT FROM HANDRAIL		LF	\$5.78			
SP-010	STRIP PAINT FROM PIPING		SF	\$5.06			
SP-011	CLEAN-UP OF MATERIALS CONTAINING LEAD (DIRT, BUILDING DEBRIS, ETC.)		CF	\$2.71			
SP-012	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$0.54			
SP-013	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$0.97			
SP-014	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$2.89			
	<u>COMPONENT REPLACEMENT</u>						
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.29			
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.14			
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.43			
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.29			
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$0.72			
CR-006	REMOVE RADIATOR		SF	\$0.58			
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$5.78			
	<u>MISCELLANEOUS ITEMS</u>						
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$250.00			
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$175.00			
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF	\$0.97			
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF	\$2.17			
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY	\$450.00			
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY	\$25.00			
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	\$26.00			

EXHIBIT B-2 LEAD

AAIS								
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF	\$0.50				
MI-012	ENCAPSULATION UTILIZING HEAVY BODIED REINFORCED COATING SYSTEM		SF	\$1.00				
MI-013	FIXED SCAFFOLDING	COST+10%	SF	10				
<u>REWORK ITEMS</u>								
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF	\$0.95				
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA	\$175.00				
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA	\$125.00				
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA	\$250.00				
RW-015	PAINT FLAT SURFACES (PRIMER + FINISH COAT)		SF	\$0.14				
RW-016	PAINT COLUMNS AND STRUCTURAL FRAMING MEMBERS (PRIMER + FINISH COAT)		SF	\$2.31				
RW-017	PAINT STAIR TREADS, RISERS AND STRINGERS (PRIMER + FINISH COAT)		SF	\$2.31				
RW-018	PAINT HANDRAIL (PRIMER + FINISH COAT)		LF	\$0.14				
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF	\$0.95				
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF	\$1.49				
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF	\$1.45				
RW-022	PAINT RADIATOR (PRIMER + FINISH COAT)		SF	\$2.31				
RW-023	PAINT PIPING (PRIMER + FINISH COAT)		LF	\$0.14				
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF	\$2.31				
RW-025	ASPHALT PAVING		SF	\$2.31				
<u>ESCALATION FACTORS</u>								
EF-1	WORK SURFACES 10-20' HIGH			1.15				
EF-2	WORK SURFACES OVER 20' HIGH			1.30				
EF-3	NON-REGULAR WORK HOURS (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30				
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30				
EF-5	CONFINED SPACE WORK			1.15				
EF-8	EXTERIOR WORK			1.30				
				WORK ORDER TOTAL				

EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS

AAIS								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
MOLD REMEDIATION								
IAQ-001	CLEANING AND HEPA VACUUMING OF CONTAMINATED COMPONENTS OR MATERIALS		SF	\$0.50				
IAQ-002	REMOVAL OF CONTAMINATED PIPE INSULATION		LF	\$0.43				
IAQ-003	REMOVAL OF CONTAMINATED BUILDING INSULATION		SF	\$0.43				
IAQ-004	REMOVAL OF CONTAMINATED HVAC DUCT OR EQUIPMENT INSULATION		SF	\$0.43				
IAQ-005	REMOVAL OF CONTAMINATED CARPET		SF	\$0.72				
IAQ-006	REMOVAL OF CONTAMINATED DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$1.10				
IAQ-007	REMOVAL OF CONTAMINATED PLASTER		SF	\$1.45				
IAQ-008	REMOVAL OF CONTAMINATED SUSPENDED CEILING PANELS		SF	\$0.43				
IAQ-009	PREP WORK AREA		SF	\$0.97				
IAQ-010	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$2.17				
IAQ-011	SELECTIVE DEMOLITION TO ACCESS CONTAMINATED COMPONENTS OR MATERIALS		SF	\$1.05				
OTHER HAZARDOUS MATERIALS ABATEMENT								
HM-001	REMOVE LOOSE PCB CONTAMINATED CAULK (WET SCRAPING OR BRUSHING)		LF	\$2.60				
HM-002	REMOVE PCB CONTAMINATED CAULK AND 6 INCHES OF BUILDING MATERIALS		LF	\$28.00				
HM-003	REMOVE PCB CONTAMINATED CAULK AND 12 INCHES OF BUILDING MATERIALS		LF	\$36.82				
HM-004	REMOVE INTACT PCB CONTAMINATED CAULK WITH NO REMOVAL OF BUILDING MATERIALS		LF	\$4.99				
HM-005	STRIP PAINT FROM FLAT SURFACES		SF	\$2.31				
HM-006	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$0.50				
HM-007	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$0.87				
HM-008	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$2.89				
COMPONENT REPLACEMENT								
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.29				
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.14				
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.43				
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.29				
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$0.72				
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$7.50				

**EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS**

AAIS									
MISCELLANEOUS ITEMS									
MI-001	MOBILIZATION (1 PER WORK AREA)		EA		\$250.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA		\$150.00				
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF		\$0.97				
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF		\$2.17				
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA		250				
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY		20				
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY		\$450.00				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY		\$25.00				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR		\$26.00				
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF		\$0.50				
MI-013	FIXED SCAFFOLDING	COST+10%	SF		10				
REWORK ITEMS									
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF		\$2.00				
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA		175				
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA		125				
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA		250				
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF		\$0.95				
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF		\$1.49				
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF		\$1.45				
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF		\$10.00				
ESCALATION FACTORS									
EF-1	WORK SURFACES 10-20' HIGH			1.15					
EF-2	WORK SURFACES OVER 20' HIGH			1.30					
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30					
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30					
EF-5	CONFINED SPACE WORK			1.15					
EF-8	EXTERIOR WORK			1.30					
					WORK ORDER TOTAL				

<u>ITEM #</u>	AAIS 10PSX0238 EXHIBIT B-4 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICE	<u>UNITS</u>	<u>UNIT COST \$0.00</u>
EQ-1	370 EXCAVATOR	HOUR	\$106.25
EQ-2	270 EXCAVATOR	HOUR	\$93.75
EQ-3	LINKBELT	HOUR	\$81.25
EQ-4	VECLOADER	HOUR	\$93.75
EQ-5	JOHN DEERE 310 SE BACKHOE	HOUR	\$40.25
EQ-6	BROKK 180	HOUR	\$91.36
EQ-7	BROKK 50	HOUR	\$65.00
EQ-8	SCHIBECI POWER PROFILER	HOUR	\$43.95
EQ-9	CAT 303.5 MINI EXCAVATOR	HOUR	\$41.75
EQ-10	CAT 953 D TRACK LOADER	HOUR	\$65.00
EQ-11	287 B SKID STEER	HOUR	\$45.00
EQ-12	BOBCAT S185	HOUR	\$40.00
EQ-13	THOMAS SKID STEER	HOUR	\$38.00
EQ-14	BOBCAT S70	HOUR	\$32.00
EQ-15	BOBCAT M52 WALK BEHIND SKID STEER	HOUR	\$35.00
EQ-16	25 KW GENERATOR	HOUR	\$19.00
EQ-17	65 KW GENERATOR	HOUR	\$28.00
EQ-18	19FT SCISSORS LIFT	HOUR	\$12.50
EQ-19	HYDRAULIC HAMMER ATTACHEMENT	HR	\$75.00
EQ-20	3" TRASH PUMP	HR	\$15.00
EQ-21	185 CFM COMPRESSOR WITH JACKHAMMER AND HOSE	HR	\$29.00
EQ-22	CONCRETE SAW (WALK BEHIND WITH BLADE)	HR	\$29.30
EQ-23	CUT OFF SAW 12"	HR	\$15.00
EQ-24	OXY / ACETYLENE TORCH WITH TANKS	HR	\$13.00
INSUL-1	Manufacture and install 2 inch gate valve removable insulation jacket	EA	\$445.00
INSUL-2	Manufacture and install 3 inch gate valve removable insulation jacket	EA	\$480.00
INSUL-3	Manufacture and install 4 inch gate valve removable insulation jacket	EA	\$525.00
INSUL-4	Manufacture and install 5 inch gate valve removable insulation jacket	EA	\$567.00
INSUL-5	Manufacture and install 6 inch gate valve removable insulation jacket	EA	\$587.00
INSUL-6	Manufacture and install 8 inch gate valve removable insulation jacket	EA	\$658.00
INSUL-7	Manufacture and install 10 inch gate valve removable insulation jacket	EA	\$750.00
INSUL-8	Manufacture and install 12 inch gate valve removable insulation jacket	EA	\$841.00
INSUL-9	Manufacture and install 14 inch gate valve removable insulation jacket	EA	\$904.00
INSUL-10	Manufacture and install 1" steam trap removable insulation jacket	EA	\$250.00
INSUL-11	Manufacture and install 1.25" steam trap removable insulation jacket	EA	\$300.00
INSUL-12	Manufacture and install 1.5' steam trap removable insulation jacket	EA	\$325.00
INSUL-13	Manufacture and install 2" steam trap removable insulation jacket	EA	\$350.00

EXHIBIT C

SEEC FORM 11

NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION AND SOLICITATION BAN

This notice is provided under the authority of Connecticut General Statutes 9-612(g)(2), as amended by P.A. 07-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined below):

Campaign Contribution and Solicitation Ban

No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee;

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

Duty to Inform

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

Penalties for Violations

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—\$2000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of \$2000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or \$5000 in fines, or both.

Contract Consequences

Contributions made or solicited in violation of the above prohibitions may result, in the case of a state contractor, in the contract being voided.

Contributions made or solicited in violation of the above prohibitions, in the case of a prospective state contractor, shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State will not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information and the entire text of P.A 07-1 may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to “State Contractor Contribution Ban.”

Definitions:

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision

Contract # 10PSX0238

RFP Contract – Exhibit C – SEEC Form 11 - NEW 1/09

exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan or a loan to an individual for other than commercial purposes.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

CONTRACT

10PSX0238

Between

THE STATE OF CONNECTICUT

Acting by its

DEPARTMENT OF ADMINISTRATIVE SERVICES

AND

Bestech, Inc. of CT

FOR

ASBESTOS, LEAD AND MOLD ABATEMENT SERVICES

December 17, 2010

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- EXHIBIT B** - Price Schedule
- EXHIBIT C** - SEEC Form 11

Contract # 10PSX0238

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This Contract (the “Contract”) is made as of the 17 day of December, in the year 2010 , by and between, Bestech Inc. (the “Contractor,”) with a principal place of business at 25 Pinney St. Ellington, CT, acting by James Newbury, its President and the State of Connecticut, Department of Administrative Services (“DAS”), with a principal place of business at 165 Capitol Ave, Hartford, Connecticut 06106-1659, acting by Paul Greco, its Contract Specialist, in accordance with Sections 4a-2 and 4a-51 of the Connecticut General Statutes.

Now therefore, in consideration of these presents, and for other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the Contractor and the State agree as follows:

1. Definitions. Unless otherwise indicated, the following terms shall have the following corresponding definitions:
 - (a) Cancellation: An end to the Contract effected pursuant to a right which the Contract creates due to a breach.
 - (b) Claims: All actions, suits, claims, demands, investigations and proceedings of any kind, open, pending or threatened, whether mature, unmatured, contingent, known or unknown, at law or in equity, in any forum.
 - (c) Client Agency: State of Connecticut, CT Department of Public Works, Using Agency Government Agency, Not for Profit Agency
 - (d) Contract: The agreement, as of its effective date, between the Proposer and the State for any or all Goods or Services at the Proposal price.
 - (e) Contractor: A person or entity who submits a Proposal and who executes a Contract.
 - (f) Contractor Parties: A Contractor’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.
 - (g) Day: All calendar days other than Saturdays, Sundays and days designated as national or State of Connecticut holidays upon which banks in Connecticut are closed.
 - (h) Expiration: An end to the Contract due to the completion in full of the mutual performances of the parties or due to the Contract’s term being completed.
 - (i) Force Majeure: Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has occurred, including, but not limited to, labor troubles unrelated to the Contractor, failure of or inadequate permanent power, unavoidable casualties, fire not caused by the Contractor, extraordinary weather conditions, disasters, riots, acts of God, insurrection or war.
 - (j) Goods: For purposes of the Contract, all things which are movable at the time that the Contract is effective and which include, without limiting this definition, supplies, materials and equipment, as specified in the Request for Proposals and set forth in Exhibit A.
 - (k) Goods or Services: Goods, Services or both, as specified in the Request for Proposals and set forth in Exhibit A.

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- (l) Proposal: A Proposer’s submittal in response to a Request for Proposals.
 - (m) Proposer Parties: A Proposer’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Proposer is in privity of oral or written contract and the Proposer intends for such other person or entity to Perform under the Contract in any capacity.
 - (n) Records: All working papers and such other information and materials as may have been accumulated by the Contractor in performing the Contract, including but not limited to, documents, data, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.
 - (o) Request for Proposals: A State request inviting proposals for Goods or Services. This Contract shall be governed by the statutes, regulations and procedures of the State of Connecticut, Department of Administrative Services.
 - (p) Services: The performance of labor or work, as specified in the Request for Proposals and set forth in Exhibit A.
 - (q) State: The State of Connecticut, including DAS, the Client Agency and any office, department, board, council, commission, institution or other agency of the State.
 - (r) Termination: An end to the Contract effected pursuant to a right which the Contract creates, other than for a breach.
 - (s) Title: all ownership, title, licenses, rights and interest, including, but not limited to, perpetual use, of and to the Goods or Services.
2. Term of Contract; Contract Extension. The Contract will be in effect from February 1, 2011 through January 31, 2016. The parties may extend this Contract, prior to Termination, Expiration or Cancellation, one or more times for a combined total period not to exceed the complete length of the original term, but only in accordance with the section in this Contract concerning Contract Amendments.
 3. Description of Goods or Services. The Contractor shall perform as set forth in Exhibit A. For purposes of this Contract, to perform and the performance in Exhibit A is referred to as “Perform” and the “Performance.”
 4. Price Schedule, Payment Terms and Billing, and Price Adjustments.
- (a) Price Schedule: Price Schedule under this Contract is set forth in Exhibit B.
 - (b) Payment Terms and Billing: Payment shall be made only after the Client Agency receives and accepts the Goods or Services and after it receives a properly completed invoice. Unless otherwise specified in the Contract, payment for all accepted Goods or Services shall be due within forty-five (45) days after acceptance of the Goods or Services, or thirty (30) days if the Contractor is a certified small contractor or minority business enterprise as defined in Conn. Gen. Stat. § 4a-60g. The Contractor shall submit an invoice to the Client Agency for the Performance. The invoice shall include detailed information for Goods or Services, delivered and performed, as applicable, and accepted. Any late payment charges shall be calculated in accordance with the Connecticut General Statutes.

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- (c) If applicable to and during the term of this Contract, the Price Schedule will be adjusted to reflect any increase in the minimum wage rate that may occur, as mandated by state law. The Price Schedule will not be adjusted until the Contractor provides documentation, in the form of certified payroll or other documentation acceptable to the State, substantiating the increase in minimum wage rate.
- (d) Price Adjustments: Prices for the Goods or Services listed in Exhibit B shall remain unchanged for twelve (12) months following the effective date of the Contract. The Contractor shall have the right to request a price adjustment only during the thirty (30) days immediately preceding the annual anniversary dates of the effective date of the Contract during the term of the Contract. During this thirty (30) day period, the Contractor may submit a request in writing to DAS for a price adjustment that is consistent with and relative to price changes originating with and compelled by manufacturer and/or market trends and which changes are outside of the Contractor's control. The Contractor must fully document its request, attaching to the request, without limitation, such manufacturer and market data, as support the requested adjustment. DAS may, in its sole discretion, approve or disapprove the requested adjustment, in whole or in part. Any approved adjustment shall be final and shall remain unchanged until the next annual anniversary date of the effective date of the Contract.

The Contractor shall submit all requests in accordance with Section #35. Notice. A request made to the Client Agency shall not be valid and the parties shall treat it as if the Contractor had not made the request at all. A request made to the Client Agency shall not be considered timely and shall not toll or extend the running of the thirty (30) days. The right of the Contractor to request a particular price adjustment shall lapse upon the expiration of the applicable thirty (30) days. If the Contractor fails to make a timely request, then the price shall remain unchanged from the previous year and shall continue through the next succeeding twelve (12) months and until the second annual anniversary of the effective date of the Contract. If approved, price adjustments shall become effective ten (10) days after the date of the approval. The Contractor shall honor any purchase orders issued prior to the effective date of the approval at the price in effect at the time of the issuance of the purchase order.

5. Rejected Items; Abandonment.

- (a) The Contractor may deliver, cause to be delivered, or, in any other way, bring or cause to be brought, to any State premises or other destination, Goods, as samples or otherwise, and other supplies, materials, equipment or other tangible personal property. The State may, by written notice and in accordance with the terms and conditions of the Contract, direct the Contractor to remove any or all such Goods (“the “Rejected Goods”) and any or all other supplies, materials, equipment or other tangible personal property (collectively, the “Contractor Property”) from and out of State premises and any other location which the State manages, leases or controls. The Contractor shall remove the Rejected Goods and the Contractor Property in accordance with the terms and conditions of the written notice. Failure to remove the Rejected Goods or the Contractor Property in accordance with the terms and conditions of the written notice shall mean, for itself and all Contractor Parties and Proposer Parties, that:
 - (1) they have voluntarily, intentionally, unconditionally, unequivocally and absolutely abandoned and left unclaimed the Rejected Goods and Contractor Property and relinquished all ownership, title, licenses, rights, possession and interest of, in and to (collectively, “Title”) the Rejected Goods and Contractor Property with the specific and express intent of (A) terminating all of their Title to the Rejected Goods and Contractor Property, (B) vesting Title to the Rejected Goods and Contractor Property in the State of Connecticut and (C) not ever reclaiming Title or any future rights of any type in and to the Rejected Goods and Contractor Property;

- (2) there is no ignorance, inadvertence or unawareness to mitigate against the intent to abandon the Rejected Goods or Contractor Property;
 - (3) they vest authority, without any further act required on their part or the State's part, in the Client Agency and the State to use or dispose of the Rejected Goods and Contractor Property, in the State's sole discretion, as if the Rejected Goods and Contractor Property were the State's own property and in accordance with law, without incurring any liability or obligation to the Contractor or any other party;
 - (4) if the State incurs any costs or expenses in connection with disposing of the Rejected Goods and Contractor Property, including, but not limited to, advertising, moving or storing the Rejected Goods and Contractor Property, auction and other activities, the State shall invoice the Contractor for all such cost and expenses and the Contractor shall reimburse the State no later than thirty (30) days after the date of invoice; and
 - (5) they do remise, release and forever discharge the State and its employees, departments, commissions, boards, bureaus, agencies, instrumentalities or political subdivisions and their respective successors, heirs, executors and assigns (collectively, the "State and Its Agents") of and from all Claims which they and their respective successors or assigns, jointly or severally, ever had, now have or will have against the State and Its Agents arising from the use or disposition of the Rejected Goods and Contractor Property.
- (b) The Contractor shall secure from each Contractor Party or Proposer Party, as appropriate, such document or instrument as necessary or appropriate as will vest in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to give full effect to all of the terms and conditions of this section. The Contractor shall provide, no later than fifteen (15) days after receiving a request from the State, such information as the State may require to evidence, in the State's sole determination, compliance with this section.
6. Order and Delivery. The Contract shall bind the Contractor to furnish and deliver the Goods or Services in accordance with Exhibit A and at the prices set forth in Exhibit B. Subject to the sections in this Contract concerning Force Majeure, Termination, Cancellation Expiration and Open Market Purchases, the Contract shall bind the Client Agency to order the Goods or Services from the Contractor, and to pay for the accepted Goods or Services in accordance with Exhibit B.
 7. Contract Amendments. No amendment to or modification or other alteration of the Contract, including extensions, shall be valid or binding upon the parties unless made in writing, signed by the parties and, if applicable, approved by the Connecticut Attorney General.
 8. Assignment. The Contractor shall not assign any of its rights or obligations under the Contract, voluntarily or otherwise, in any manner without the prior written consent of DAS. DAS may void any purported assignment in violation of this section and declare the Contractor in breach of Contract. Any Cancellation by DAS for a breach is without prejudice to DAS's or the State's rights or possible Claims.
 9. Termination, Cancellation and Expiration.
 - (a) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may Terminate the Contract whenever DAS makes a written determination that such Termination is in the best interests of the State. DAS shall notify the Contractor in writing of Termination pursuant to this section, which notice shall specify the effective date of Termination and the extent to which the Contractor must complete Performance under the

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Contract prior to such date. The Contractor is not entitled to receive and the State is not obligated to tender to the Contractor any payments or reimbursements for anticipated or lost profits.

- (b) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may, after making a written determination that the Contractor has breached the Contract, Cancel the Contract in accordance with the provisions in the Breach section of this Contract.
- (c) DAS shall send the notice of Termination or Cancellation via certified mail, return receipt requested, to the Contractor at the most current address which the Contractor has furnished to DAS for purposes of correspondence, or by hand delivery. Upon receiving such notice from DAS, the Contractor shall immediately discontinue all services affected in accordance with the notice, undertake all commercially reasonable efforts to mitigate any losses or damages, and deliver to the Client Agency all Records. The Records are deemed to be the property of the Client Agency and the Contractor shall deliver them to the Client Agency no later than thirty (30) days after the Termination, Cancellation or Expiration of the Contract or fifteen (15) days after the Contractor receives a written request from DAS for the Records. The Contractor shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, ASCII or .TXT.
- (d) Upon receipt of a written notice of Termination or Cancellation from DAS, the Contractor shall cease operations as directed by DAS in the notice, and take all actions that are necessary or appropriate, or that DAS may reasonably direct, for the protection and preservation of the Goods and any other property. Except for any work which DAS directs the Contractor to Perform in the notice prior to the effective date of Termination or Cancellation, and except as otherwise provided in the notice, the Contractor shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments.
- (e) To the extent that the Client Agency has issued a purchase order prior to the notice of Termination and the Contractor has begun Performance against that purchase order in good faith, the Client Agency shall, within forty-five (45) days of having received an invoice from the Contractor for such Performance, pay or reimburse the Contractor for its Performance rendered and accepted by the Client Agency in accordance with Exhibit A. In addition, the Client Agency shall also pay or reimburse the Contractor for all actual and reasonable costs incurred after Termination in completing those portions of the Performance which the notice required the Contractor to complete. Upon and as requested by the Client Agency or DAS and after consent of the Contractor's subcontractors, if any, and if their consent is required, the Contractor shall (1) assign to the Client Agency, or any replacement contractor which the Client Agency or DAS designates, all subcontracts, purchase orders and other commitments, (2) deliver to the Client Agency all Records and other information pertaining to its Performance, and (3) remove from State premises, whether leased or owned, all such equipment, waste material and rubbish related to its Performance, all as the Client Agency or DAS may request.
- (f) For breach or violation of any of the provisions in the section concerning Representations and Warranties, DAS may Cancel the Contract in accordance with its terms and revoke any consents to assignments given as if the assignments had never been requested or consented to, without liability to the Contractor or Contractor Parties or any third party.
- (g) Upon Termination, Cancellation or Expiration of the Contract, all rights and obligations shall be null and void, so that no party shall have any further rights or obligations to any other party, except with respect to the sections which survive Termination, Cancellation or Expiration of the Contract. All representations, warranties, agreements and rights of the parties under the Contract shall survive such Termination, Cancellation or Expiration to the

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extent not otherwise limited in the Contract and without each one of them having to be specifically mentioned in the Contract.

(h) Termination or Cancellation of the Contract pursuant to this section shall not be deemed to be a breach of contract by DAS.

10. Cost Modifications. The parties may agree to a reduction in the cost of the Contract at any time during which the Contract is in effect. Without intending to impose a limitation on the nature of the reduction, the reduction may be to hourly, staffing or unit costs, the total cost of the Contract or the reduction may take such other form as the State deems to be necessary or appropriate.

11. Breach. If either party breaches the Contract in any respect, the non-breaching party shall provide written notice of such breach to the breaching party and afford the breaching party an opportunity to cure the breach within ten (10) days from the date that the breaching party receives such notice. Any other time provided for in the notice shall trump such ten (10) days. Such right to cure period shall be extended if the non-breaching party is satisfied that the breaching party is making a good faith effort to cure but the nature of the breach is such that it cannot be cured within the right to cure period. The notice may include an effective Contract Cancellation date if the breach is not cured by the stated date and, unless otherwise modified by the non-breaching party in writing prior to the Cancellation date, no further action shall be required of any party to effect the Cancellation as of the stated date. If the notice does not set forth an effective Contract Cancellation date, then the non-breaching party may Cancel the Contract by giving the breaching party no less than twenty four (24) hours' prior written notice. If DAS believes that the Contractor has not performed according to the Contract, the Client Agency may withhold payment in whole or in part pending resolution of the Performance issue, provided that DAS notifies the Contractor in writing prior to the date that the payment would have been due in accordance with Exhibit B.

12. Waiver.

(a) No waiver of any breach of the Contract shall be interpreted or deemed to be a waiver of any other or subsequent breach. All remedies afforded in the Contract shall be taken and construed as cumulative, that is, in addition to every other remedy provided in the Contract or at law or in equity.

(b) A party's failure to insist on strict performance of any provision of the Contract shall only be deemed to be a waiver of rights and remedies concerning that specific instance of Performance and shall not be deemed to be a waiver of any subsequent rights, remedies or breach.

13. Open Market Purchases. Except to the extent that the Contractor is performing within a right to cure period, failure of the Contractor to Perform within the time specified in the Contract, or failure to replace rejected or substandard Goods or fulfill unperformed Services when so requested and as the Contract provides or allows, constitutes a breach of the Contract and as a remedy for such breach, such failure shall constitute authority for DAS, if it deems it to be necessary or appropriate in its sole discretion, to Cancel the Contract and/or to purchase on the open market, Goods or Services to replace those which have been rejected, not delivered, or not performed. The Client Agency shall invoice the Contractor for all such purchases to the extent that they exceed the costs and expenses in Exhibit B and the Contractor shall pay the Client Agency's invoice immediately after receiving the invoice. If DAS does not Cancel the Contract, the Client Agency will deduct such open market purchases from the Contract quantities. However, if the Client Agency deems it to be in the best interest of the State, the Client Agency may accept and use the Goods or Services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Client Agency.

14. Purchase Orders.

- (a) The Contract itself is not an authorization for the Contractor to ship Goods or begin Performance in any way. The Contractor may begin Performance only after it has received a duly issued purchase order against the Contract for Performance.
- (b) The Client Agency shall issue a purchase order against the Contract directly to the Contractor and to no other party.
- (c) All purchase orders shall be in written or electronic form, bear the Contract number (if any) and comply with all other State and Client Agency requirements, particularly the Client Agency's requirements concerning procurement. Purchase orders issued in compliance with such requirements shall be deemed to be duly issued.
- (d) A Contractor making delivery without a duly issued purchase order in accordance with this section does so at the Contractor's own risk.
- (e) The Client Agency may, in its sole discretion, deliver to the Contractor any or all duly issued purchase orders via electronic means only, such that the Client Agency shall not have any additional obligation to deliver to the Contractor a "hard copy" of the purchase order or a copy bearing any hand-written signature or other "original" marking.

15. Indemnification.

- (a) The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or Contractor Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Proposal or any Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance of the Contract.
- (b) The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any Contractor Parties. The State shall give the Contractor reasonable notice of any such Claims.
- (c) The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the Claims.
- (d) The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall name the State as an additional insured on the policy and shall provide a Certificate of Insurance to DAS, except that the Contractor shall not provide a copy to DAS if the Client Agency is the State Department of Transportation, prior to the effective date of the Contract. The

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Contractor shall not begin Performance until the delivery of the Certificate of Insurance to DAS. Upon request of the Client Agency, the Contractor shall provide a Certificate of Insurance to the Client Agency.

- (e) The rights provided in this section for the benefit of the State shall encompass the recovery of attorneys' and other professionals' fees expended in pursuing a Claim against a third party.
- (f) This section shall survive the Termination, Cancellation or Expiration of the Contract, and shall not be limited by reason of any insurance coverage.

16. Forum and Choice of Law. The Contract shall be deemed to have been made in the City of Hartford, State of Connecticut. Both Parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

17. Contractor Guaranties. Contractor shall:

- (a) Perform fully under the Contract;
- (b) Guarantee the Goods or Services against defective material or workmanship and to repair any damage or marring occasioned in transit or, at the Client Agency's option, replace them;
- (c) Furnish adequate protection from damage for all work and to repair damage of any kind, for which its workers are responsible, to the premises, Goods, the Contractor's work or that of Contractor Parties;
- (d) With respect to the provision of Services, pay for all permits, licenses and fees and give all required or appropriate notices;
- (e) Adhere to all Contractual provisions ensuring the confidentiality of Records that the Contractor has access to and are exempt from disclosure under the State's Freedom of Information Act or other applicable law; and
- (f) Neither disclaim, exclude nor modify the implied warranties of fitness for a particular purpose or of merchantability.

18. Implied Warranties. DAS does not disclaim, exclude or modify the implied warranty of fitness for a particular purpose or the warranty of merchantability.

19. Goods, Standards and Appurtenances. Any Goods delivered must be standard new Goods, latest model, except as otherwise specifically stated in the Contract. Remanufactured, refurbished or reconditioned equipment may be accepted but only to the extent allowed under the Contract. Where the Contract does not specifically list or describe any part or nominal appurtenances of equipment for the Goods, it shall be understood that the Contractor shall deliver such parts and appurtenances as are usually provided with the manufacturer's stock model.

20. Delivery.

- (a) Delivery shall be made as ordered and in accordance with the Contract. Unless otherwise specified in the Contract, delivery shall be to a loading dock or receiving platform. The Contractor or Contractor's shipping designee shall be responsible for removal of Goods from the carrier and placement on the Client Agency loading dock or receiving platform. The receiving personnel of the Client Agency are not required to assist in this process. The decision of DAS as to reasonable compliance with delivery terms shall be final and binding. The burden of proof of proper receipt of the order shall rest with the Contractor.
- (b) In order for the time of delivery to be extended, the Client Agency must first approve a request for extension from the time specified in the Contract, such extension applying only to the particular item or shipment.
- (c) Goods shall be securely and properly packed for shipment, according to accepted standard commercial practice, without extra charge for packing cases, baling or sacks. The containers shall remain the property of the Client Agency unless otherwise stated in the Proposal.
- (d) All risk of loss and damage to the Goods transfers to the Client Agency upon Title vesting in the Client Agency.

21. Goods Inspection. The Client Agency shall determine the manner and prescribe the inspection of all Goods and the tests of all samples submitted to determine whether they comply with all of the specifications in the Contract. If any Goods fail in any way to meet the specifications in the Contract, the Client Agency may, in its sole discretion, either reject it and owe nothing or accept it and pay for it on an adjusted price basis, depending on the degree to which the Goods meet the specifications. Any decision pertaining to any such failure or rejection shall be final and binding.

22. Setoff. In addition to all other remedies that DAS may have, the State, in its sole discretion, may setoff (1) any costs or expenses that the State incurs resulting from the Contractor's unexcused nonperformance under the Contract and under any other agreement or arrangement that the Contractor has with the State and (2) any other amounts that are due or may become due from the State to the Contractor, against amounts otherwise due or that may become due to the Contractor under the Contract, or under any other agreement or arrangement that the Contractor has with the State. The State's right of setoff shall not be deemed to be the State's exclusive remedy for the Contractor's or Contractor Parties' breach of the Contract, all of which shall survive any setoffs by the State.

23. Force Majeure. The State and the Contractor shall not be excused from their obligation to Perform in accordance with the Contract except in the case of Force Majeure events and as otherwise provided for in the Contract. In the case of any such exception, the nonperforming party shall give immediate written notice to the other, explaining the cause and probable duration of any such nonperformance.

24. Advertising. The Contractor shall not refer to sales to the State for advertising or promotional purposes, including, but not limited to, posting any material or data on the Internet, without DAS's prior written approval.

25. Americans With Disabilities Act. The Contractor shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Contract. DAS may Cancel the Contract if the Contractor fails to comply with the Act.

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26. Representations and Warranties. The Contractor, and the Proposer, as appropriate, represent and warrant to DAS for itself, Contractor Parties and Proposer Parties, as appropriate, that:
- (a) if they are entities, they are duly and validly existing under the laws of their respective states of organization and authorized to conduct business in the State of Connecticut in the manner contemplated by the Contract. Further, as appropriate, they have taken all necessary action to authorize the execution, delivery and Performance of the Proposal and the Contract and have the power and authority to execute, deliver and Perform their obligations under the Contract;
 - (b) they will comply with all applicable State and Federal laws and municipal ordinances in satisfying their obligations to the State under and pursuant to the Contract, including, but not limited to (1) Connecticut General Statutes Title 1, Chapter 10, concerning the State's Codes of Ethics and (2) Title 4a concerning State purchasing, including, but not limited to 22a-194a concerning the use of polystyrene foam;
 - (c) the execution, delivery and Performance of the Contract will not violate, be in conflict with, result in a breach of or constitute (with or without due notice and/or lapse of time) a default under any of the following, as applicable: (1) any provision of law; (2) any order of any court or the State; or (3) any indenture, agreement, document or other instrument to which it is a party or by which it may be bound;
 - (d) they are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any governmental entity;
 - (e) as applicable, they have not, within the three years preceding the Contract, in any of their current or former jobs, been convicted of, or had a civil judgment rendered against them or against any person who would Perform under the Contract, for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a transaction or contract with any governmental entity. This includes, but is not limited to, violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (f) they are not presently indicted for or otherwise criminally or civilly charged by any governmental entity with commission of any of the offenses listed above;
 - (g) they have not within the three years preceding the Contract had one or more contracts with any governmental entity Cancelled;
 - (h) they have not employed or retained any entity or person, other than a bona fide employee working solely for them, to solicit or secure the Contract and that they have not paid or agreed to pay any entity or person, other than a bona fide employee working solely for them, any fee, commission, percentage, brokerage fee, gifts, or any other consideration contingent upon or resulting from the award or making of the Contract or any assignments made in accordance with the terms of the Contract;
 - (i) to the best of their knowledge, there are no Claims involving the Proposer, Proposer Parties, Contractor or Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract;
 - (j) they shall disclose, to the best of their knowledge, to DAS in writing any Claims involving them that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully

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under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. For purposes of the Contractor's obligation to disclose any Claims to DAS, the ten (10) Days in the section of this Contract concerning Disclosure of Contractor Parties Litigation shall run consecutively with the ten (10) Days provided for in this representation and warranty;

- (k) their participation in the Request for Proposals process is not a conflict of interest or a breach of ethics under the provisions of Title 1, Chapter 10 of the Connecticut General Statutes concerning the State's Code of Ethics;
- (l) the Proposal was not made in connection or concert with any other person, entity or Proposer, including any affiliate (as defined in the Tangible Personal Property section of this Contract) of the Proposer, submitting a Proposal for the same Goods or Services, and is in all respects fair and without collusion or fraud;
- (m) they are able to Perform under the Contract using their own resources or the resources of a party who is not a Proposer;
- (n) the Contractor shall obtain in a written contract all of the representations and warranties in this section from any Contractor Parties and to require that provision to be included in any contracts and purchase orders with Contractor Parties;
- (o) they have paid all applicable workers' compensation second injury fund assessments concerning all previous work done in Connecticut;
- (p) they have a record of compliance with Occupational Health and Safety Administration regulations without any unabated, willful or serious violations;
- (q) they owe no unemployment compensation contributions;
- (r) they are not delinquent in the payment of any taxes owed, or, that they have filed a sales tax security bond, and they have, if and as applicable, filed for motor carrier road tax stickers and have paid all outstanding road taxes;
- (s) all of their vehicles have current registrations and, unless such vehicles are no longer in service, they shall not allow any such registrations to lapse;
- (t) each Contractor Party has vested in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to ensure full compliance with and Performance in accordance with all of the terms and conditions of the Contract and that all appropriate parties shall also provide to DAS, no later than fifteen (15) days after receiving a request from DAS, such information as DAS may require to evidence, in DAS's sole determination, compliance with this section;
- (u) except to the extent modified or abrogated in the Contract, all Title shall pass to the Client Agency upon complete installation, testing and acceptance of the Goods or Services and payment by the Client Agency;
- (v) if either party Terminates or Cancels the Contract, for any reason, they shall relinquish to the Client Agency all Title to the Goods delivered, accepted and paid for (except to the extent any invoiced amount is disputed) by the Client Agency;
- (w) with regard to third party products provided with the Goods, they shall transfer all licenses which they are permitted to transfer in accordance with the applicable third party license;

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- (x) they shall not copyright, register, distribute or claim any rights in or to the Goods after the effective date of the Contract without DAS's prior written consent;
- (y) they either own or have the authority to use all Title of and to the Goods, and that such Title is not the subject of any encumbrances, liens or claims of ownership by any third party;
- (z) the Goods do not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (aa) the Client Agency's use of any Goods shall not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (bb) if they procure any Goods, they shall sub-license such Goods and that the Client Agency shall be afforded the full benefits of any manufacturer or subcontractor licenses for the use of the Goods; and
- (cc) they shall assign or otherwise transfer to the Client Agency, or afford the Client Agency the full benefits of any manufacturer's warranty for the Goods, to the extent that such warranties are assignable or otherwise transferable to the Client Agency.

27. Representations and Warranties Concerning Motor Vehicles. If in the course of Performance or in any other way related to the Contract the Contractor at any time uses or operates "motor vehicles," as that term is defined by Conn. Gen. Stat. §14-1(53) (including, but not limited to such services as snow plowing, sanding, hauling or delivery of materials, freight or merchandise, or the transportation of passengers), the Contractor, and the Proposer, as appropriate, represent and warrant for itself, the Contractor Parties and Proposer Parties, as appropriate, that:

- (a) It is the owner of record or lessee of record of each such motor vehicle used in the Performance of the Contract, and each such motor vehicle is duly registered with the Connecticut Department of Motor Vehicles ("ConnDMV") in accordance with the provisions of Chapter 246 of the Connecticut General Statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV, for any reason or cause. If such motor vehicle is not registered with ConnDMV, then it shall be duly registered with another state or commonwealth in accordance with such other state's or commonwealth's applicable statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by such other state or commonwealth for any reason or cause.
- (b) Each such motor vehicle shall be fully insured in accordance with the provisions of Sections 14-12b, 14-112 and 38a-371 of the Connecticut General Statutes, as amended, in the amounts required by the said sections or in such higher amounts as have been specified by ConnDMV as a condition for the award of the Contract, or in accordance with all substantially similar provisions imposed by the law of the jurisdiction where the motor vehicle is registered.
- (c) Each Contractor Party who uses or operates a motor vehicle at any time in the Performance of the Contract shall have and maintain a motor vehicle operator's license or commercial driver's license of the appropriate class for the motor vehicle being used or operated. Each such license shall bear the endorsement or endorsements required by the provisions of Section 14-36a of the Connecticut General Statutes, as amended, to operate such motor vehicle, or required by substantially similar provisions imposed by the law of another jurisdiction in which the operator is licensed to operate such motor vehicle. The license shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV or such other jurisdiction for any reason or cause.

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- (d) Each motor vehicle shall be in full compliance with all of the terms and conditions of all provisions of the Connecticut General Statutes and regulations, or those of the jurisdiction where the motor vehicle is registered, pertaining to the mechanical condition, equipment, marking and operation of motor vehicles of such type, class and weight, including, but not limited to, requirements for motor vehicles having a gross vehicle weight rating of 18,000 pounds or more or motor vehicles otherwise described by the provisions of Conn. Gen. Stat. § 14-163c(a) and all applicable provisions of the Federal Motor Carrier Safety Regulations, as set forth in Title 49, Parts 382 to 399, inclusive, of the Code of Federal Regulations.
28. Disclosure of Contractor Parties Litigation. The Contractor shall require that all Contractor Parties, as appropriate, disclose to the Contractor, to the best of their knowledge, any Claims involving the Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. Disclosure shall be in writing.
29. Entirety of Contract. The Contract is the entire agreement between the parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the parties, whether written or oral. The Contract has been entered into after full investigation, neither party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Contract.
30. Exhibits. All exhibits referred to in and attached to this Contract are incorporated in this Contract by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.
31. Executive Orders. The Contract is subject to the provisions of Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms, Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17th, 2006, concerning procurement of cleaning products and services, Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.
32. Non-discrimination. References in this section to "contract" shall mean this Contract and references to "contractor" shall mean the Contractor.
- (a) The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes:
- (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut. The contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it

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- is shown by such contractor that such disability prevents performance of the work involved;
- (2) the contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;
 - (3) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
 - (4) the contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f;
 - (5) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56.
- (b) If the contract is a public works contract, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.
- (c) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons:
- (1) Who are active in the daily affairs of the enterprise,
 - (2) who have the power to direct the management and policies of the enterprise and
 - (3) who are members of a minority, as such term is defined in subsection (a) of section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.
- (d) Determination of the contractor's good faith efforts shall include but shall not be limited to the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (e) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.
- (f) The contractor shall include the provisions of sections (a) and (b) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted

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by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(g) The following subsections are set forth here as required by section 4a-60a of the Connecticut General Statutes:

(1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

(2) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(3) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56;

(4) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor which relate to the provisions of this section and section 46a-56.

(h) The contractor shall include the provisions of section (g) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(i) For the purposes of this entire Non-Discrimination section, "contract" includes any extension or modification of the contract, "contractor" includes any successors or assigns of the contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders. For the purposes of this section, "contract" does not include a contract where each contractor is

1. a political subdivision of the state, including, but not limited to, a municipality,

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2. a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120,
 3. any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267,
 4. the federal government,
 5. a foreign government, or
 6. an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).
33. Tangible Personal Property. The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:
- (a) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
 - (b) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
 - (c) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
 - (d) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
 - (e) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of the Act.

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34. **Whistleblowing.** This Agreement is subject to the provisions of §4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Agreement. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.
35. **Notice.** All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Contract (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is placed in the U.S. mail, first class and postage pre-paid, return receipt requested or placed with a recognized, overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

If to DAS:

State of Connecticut, Department of Administrative Services
165 Capitol Ave, 5th Floor South
Hartford, CT 06106-1659
Attention: Paul Greco

If to the Contractor:

Bestech Inc. of CT
25 Pinney St.
Ellington, CT 06029
Attn. James Newbury

36. **Insurance.** Before commencing Performance, the Contractor shall obtain and maintain at its own cost and expense for the duration of the Contract, the following insurance as described in (a) through (h) below. Contractor shall assume any and all deductibles in the described insurance policies. The Contractor's insurers shall have no right of recovery or subrogation against the State and the described Contractor's insurance shall be primary coverage. Any failure to comply with the claim reporting provisions of the policy shall not affect coverage provided to the State.

(a) Reserved

- (b) Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. Coverage shall include, Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the

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general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit.

- (c) **Automobile Liability:** \$1,000,000 combined single limit per accident for bodily injury. Coverage extends to owned, hired and non-owned automobiles. If the vendor/contractor does not own an automobile, but one is used in the execution of the contract, then only hired and non-owned coverage is required. If a vehicle is not used in the execution of the contract then automobile coverage is not required.
- (d) **Workers' Compensation and Employers Liability:** Statutory coverage in compliance with the Compensation laws of the State of Connecticut. Coverage shall include Employer's Liability with minimum limits of \$100,000 each accident, \$500,000 Disease – Policy limit, \$100,000 each employee.
- (e) Reserved
- (f) **Umbrella Liability:** Excess/umbrella liability insurance may be included to meet minimum requirements. Umbrella coverage must indicate the existing underlying insurance coverage.
- (g) **Claims Made:** Not acceptable with the exception of Professional Liability when specified.
- (h) Reserved
- 37. **Headings.** The headings given to the sections in the Contract are inserted only for convenience and are in no way to be construed as part of the Contract or as a limitation of the scope of the particular section to which the heading refers.
- 38. **Number and Gender.** Whenever the context so requires, the plural or singular shall include each other and the use of any gender shall include all genders.
- 39. **Parties.** To the extent that any Contractor Party or Proposer Party is to participate or Perform in any way, directly or indirectly in connection with the Proposal or the Contract, any reference in the Request for Proposals and the Contract to "Contractor" or "Proposer" shall also be deemed to include "Contractor Parties" or "Proposer Parties," respectively, as if such reference had originally specifically included "Contractor Parties" or "Proposer Parties," since it is the parties' intent for the terms "Contractor Parties" and "Proposer Parties" to be vested with the same respective rights and obligations as the terms "Contractor" and "Proposer."
- 40. **Contractor Changes.** The Contractor shall notify DAS in writing no later than ten (10) Days from the effective date of any change in:
 - a) its certificate of incorporation or other organizational document;
 - b) more than a controlling interest in the ownership of the Contractor; or
 - c) the individual(s) in charge of the Performance.

This change shall not relieve the Contractor of any responsibility for the accuracy and completeness of the Performance. DAS, after receiving written notice by the Contractor of any such change, may require such agreements, releases and other instruments evidencing, to DAS's satisfaction, that any individuals retiring or otherwise separating from the Contractor have been compensated in full or that provision has been made for compensation in full, for all work performed under terms of the Contract. The Contractor shall deliver such documents to DAS in accordance with the terms of DAS's written request. DAS may also require, and the Contractor shall deliver, a financial statement showing that solvency of the

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Contractor is maintained. The death of any Contractor Party, as applicable, shall not release the Contractor from the obligation to Perform under the Contract; the surviving Contractor Parties, as appropriate, must continue to Perform under the Contract until Performance is fully completed.

41. Further Assurances. The parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other party which are not inconsistent with the provisions of this Contract and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Contract, in order to give full effect to the Contract and to carry out the intent of the Contract.
42. Audit and Inspection of Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents. Requests for any audit or inspection shall be in writing, at least ten (10) Days prior to the requested date. All audits and inspections shall be at the State's expense. The State may request an audit or inspection at any time during the Contract term and for three (3) years from Termination, Cancellation or Expiration of the Contract. The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.
43. Background Checks. The State may require that the Contractor and Contractor Parties undergo criminal background checks as provided for in the State of Connecticut Department of Public Safety Administration and Operations Manual or such other State document as governs procedures for background checks. The Contractor and Contractor Parties shall cooperate fully as necessary or reasonably requested with the State and its agents in connection with such background checks.
44. Continued Performance. The Contractor and Contractor Parties shall continue to Perform their obligations under the Contract while any dispute concerning the Contract is being resolved.
45. Working and Labor Synergies. The Contractor shall be responsible for maintaining a tranquil working relationship between the Contractor work force, the Contractor Parties and their work force, State employees, and any other contractors present at the work site. The Contractor shall quickly resolve all labor disputes which result from the Contractor's or Contractor Parties' presence at the work site, or other action under their control. Labor disputes shall not be deemed to be sufficient cause to allow the Contractor to make any claim for additional compensation for cost, expenses or any other loss or damage, nor shall those disputes be deemed to be sufficient reason to relieve the Contractor from any of its obligations under the Contract.
46. Contractor Responsibility.
 - (a) The Contractor shall be responsible for the entire Performance under the Contract regardless of whether the Contractor itself performs. The Contractor shall be the sole point of contact concerning the management of the Contract, including Performance and payment issues. The Contractor is solely and completely responsible for adherence by the Contractor Parties to all applicable provisions of the Contract.
 - (b) The Contractor shall exercise all reasonable care to avoid damage to the State's property or to property being made ready for the State's use, and to all property adjacent to any work site. The Contractor shall promptly report any damage, regardless of cause, to the State.

47. Severability. If any term or provision of the Contract or its application to any person, entity or circumstance shall, to any extent, be held to be invalid or unenforceable, the remainder of the Contract or the application of such term or provision shall not be affected as to persons, entities or circumstances other than those as to whom or to which it is held to be invalid or unenforceable. Each remaining term and provision of the Contract shall be valid and enforced to the fullest extent possible by law.
48. Confidential Information. The State will afford due regard to the Proposer's and Contractor's request for the protection of proprietary or confidential information which the State receives. However, all materials associated with the Proposal and the Contract are subject to the terms of the Connecticut Freedom of Information Act ("FOIA") and all corresponding rules, regulations and interpretations. In making such a request, the Proposer or Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the vendor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Proposer or Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract, especially including the Proposal, the Records and the specifications, conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Proposer or Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking said documentation as CONFIDENTIAL, DAS will endeavor to keep said information confidential to the extent permitted by law. DAS, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. The Contractor shall have the burden of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall DAS or the State have any liability for the disclosure of any documents or information in its possession which the State or DAS believes are required to be disclosed pursuant to the FOIA or other requirements of law.
49. Interpretation. The Contract contains numerous references to statutes and regulations. For purposes of interpretation, conflict resolution and otherwise, the content of those statutes and regulations shall govern over the content of the reference in the Contract to those statutes and regulations.
50. Cross-Default.
- (a) If the Contractor or Contractor Parties breach, default or in any way fail to Perform satisfactorily under the Contract, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat any such event as a breach, default or failure to perform under any or all other agreements or arrangements ("Other Agreements") that the Contractor or Contractor Parties have with DAS. Accordingly, DAS may then exercise at its sole option any and all of its rights or remedies provided for in the Contract or Other Agreements, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS, as if the Contractor or Contractor Parties had suffered a breach, default or failure to perform under the Other Agreements.
- (b) If the Contractor or Contractor Parties breach, default or in any way fail to perform satisfactorily under any or all Other Agreements with DAS or the State, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat

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any such event as a breach, default or failure to Perform under the Contract. Accordingly, the State may then exercise at its sole option any and all of its rights or remedies provided for in the Other Agreements or the Contract, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS or the State, as if the Contractor or Contractor Parties had suffered a breach, default or failure to Perform under the Contract.

51. Disclosure of Records. The Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this section, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.
52. Summary of State Ethics Laws. Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.
53. Sovereign Immunity. The parties acknowledge and agree that nothing in the Request for Proposals or the Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.
54. Time of the Essence. Time is of the essence with respect to all provisions of this Agreement that specify a time for performance; provided, however, that this provision shall not be construed to limit or deprive a party of the benefits of any grace or use period allowed in this Agreement.
55. Reserved
56. Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Ban. With regard to a State contract as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this submission in response to the State's solicitation expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising prospective state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See Exhibit C, SEEC Form 11.
57. Health Care Portability and Accountability Act of 1996 ("HIPAA").
 - (a) If the Contractor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business

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Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

- (b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and
- (c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter “Department”) is a “covered entity” as that term is defined in 45 C.F.R. § 160.103; and
- (d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of “individually identifiable health information,” as that term is defined in 45 C.F.R. § 160.103; and
- (e) The Contractor is a “business associate” of the Department, as that term is defined in 45 C.F.R. § 160.103; and
- (f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.
- (g) Definitions.
 - (1) “Breach” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1)).’
 - (2) “Business Associate” shall mean the Contractor.
 - (3) “Covered Entity” shall mean the Department of the State of Connecticut named on page 1 of this Contract.
 - (4) “Designated Record Set” shall have the same meaning as the term “designated record set” in 45 C.F.R. § 164.501.
 - (5) “Electronic Health Record” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5)).
 - (6) “Individual” shall have the same meaning as the term “individual” in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).
 - (7) “Privacy Rule” shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and part 164, subparts A and E.
 - (8) “Protected Health Information” or “PHI” shall have the same meaning as the term “protected health information” in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.
 - (9) “Required by Law” shall have the same meaning as the term “required by law” in 45 C.F.R. § 164.103.

- (10) “Secretary” shall mean the Secretary of the Department of Health and Human Services or his designee.
- (11) “More stringent” shall have the same meaning as the term “more stringent” in 45 C.F.R. § 160.202.
- (12) “This Section of the Contract” refers to the HIPAA Provisions stated herein, in their entirety.
- (13) “Security Incident” shall have the same meaning as the term “security incident” in 45 C.F.R. § 164.304.
- (14) “Security Rule” shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and part 164, subpart A and C.
- (15) “Unsecured protected health information” shall have the same meaning as the term as defined in § 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

- (1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.
- (2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.
- (3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.
- (4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.
- (5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.
- (6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.
- (7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.
- (8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

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- (9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.
- (10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees that at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.
- (13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.
- (14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.
- (15) Business Associate agrees that it shall not directly or indirectly receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations
- (16) Obligations in the Event of a Breach
 - (A) The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. § 17932(b) and the provisions of this section of the contract.
 - (B) Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of

HITECH (42 U.S.C. § 17932(g)). A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.

(C) The Business Associate agrees to include in the notification to the Covered Entity at least the following information:

1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.
2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).
3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.
4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.
5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and contact information for said official.

(D) Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

(E) Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

- (1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) **Specific Use and Disclosure Provisions.**

- (A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.
- (B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.
- (C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

- (1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.
- (2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.
- (3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

- (1) **Term.** The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.
- (2) **Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate,** Covered Entity shall either:

- (A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or
 - (B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or
 - (C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.
- (3) Effect of Termination.
- (A) Except as provided in (1)(2) above, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.
 - (B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

- (1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.
- (2) Amendment. The Parties agree to take such action as is necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.
- (3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.
- (4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.
- (5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.
- (6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's

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own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

- (7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

58. Encryption of Data.

- (a) Contractor and Contractor Parties, at its own expense, shall keep and maintain in an encrypted state any and all electronically stored data now or hereafter in its possession or control located on non-state owned or managed devices that the State, in accordance with its existing state policies classifies as confidential or restricted. The method of encryption shall be compliant with the State of Connecticut Enterprise Wide Technical Architecture (EWTA). This shall be a continuing obligation for compliance with the EWTA standard as it may be amended or supplemented from time to time.
- (b) In the event of a breach of security or loss of State data, the Contractor and Contractor Parties shall notify the Client Agency which owns the data, DAS, the Connecticut Department of Information Technology and the Connecticut Office of the Attorney General as soon as practical but no later than 24 hours after the discovery or reason to believe such breach or loss that such data has been compromised through breach or loss.

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IN WITNESS WHEREOF, the parties have executed this Contract by their duly authorized representatives with full knowledge of and agreement with its terms and conditions.

Bestech Inc. of CT

STATE OF CONNECTICUT
Department of Administrative Services

By: _____

By: _____

James Newbury

Carol Wilson

Print or Type Name

Print or Type Name

Title: President

Title: DAS Procurement Director

Date: _____

Date:

Contract 10PSX0238 Exhibit A

Asbestos, Lead, Mold, and Other Hazardous
Materials Abatement and Removal Services for
Department of Public Works, All Using State
Agencies and Political Sub Divisions, Schools and
Not for Profits

CT Department of Administrative Services



Scope of Services

This Contract is for Asbestos, Lead, Mold, and Other Hazardous Materials Abatement and Removal work detailed in Exhibit(s) A for a contract term of five (5) years.

It is understood that this contract is subject to statutory authorization and available funding. The State will only enter into contract with Contractor(s) who will be required to assume full responsibility for services provided by the contract. This contract is for the abatement of asbestos-containing materials, lead, mold, and other hazardous materials by persons who are knowledgeable, qualified and trained in the removal, treatment, handling and disposal of asbestos-containing material, lead, mold, and other hazardous materials and the subsequent cleaning of the affected environment. Certain services provided under these contracts may require firms and individuals to be certified or licensed by governmental or industry trade organizations.

- There may be situations in which services and equipment go beyond the actual requirements listed. In such situations the State may approve work, and accept and pay for the added services and equipment. Unit rates must be approved by the using agency prior to any additional work.
- Certain projects, depending on size, scope, and complexity, may be bid separately at the discretion of the using agency.

All work to be performed by the contractor shall comply with, as a minimum, the Connecticut State Building Code as adopted pursuant to CGS 29-252, as amended; and the Connecticut Fire Safety Code as adopted pursuant to CGS 29-292, as amended.

The year of the code governing the Contractors work shall be the current code which has been adopted as per the above Connecticut General Statutes on the start date of the project.

Product and/or Service Specifications

Service Specifications

Required Service Specifications can be found in Exhibits A-1, A-2, A-3, A-4, A-5 and A-6.

Pricing

Awarded pricing is found in Exhibit B-1, B-2, B-3 and Exhibit B-4

This is a firm fixed price contract. No additional markup will be allowed to perform any work listed in the Exhibit B proposal sheets with rental equipment, subcontracted labor, or materials under this contract. Markup for materials and outside services not listed will not exceed 10%.

The contractor shall not charge for equipment items not listed in the Proposal Schedule without prior written approval from the Using Agency and the CT DAS Procurement Services Representative.

Requests for approval of supplemental unit prices shall be made in writing to the Using Agency and the CT DAS Procurement Services Representative and shall be accompanied by such additional information as the Using Agency may require to enable evaluation of the contractor's request.

If applicable, the contractor(s) shall be required to pay for all permits, licenses, and fees, and to give all notices and comply with all laws, ordinances, rules and regulations of the State, city or town in which any required services are to be performed. The using Agency will reimburse the contractor for obtained permits or license costs provided that the contractor provide a receipt, proof and copy of the required permit or license to the DPW office designation referenced below or appropriate Using agency designation. No mark-up to these fees will be allowed.

Environmental Analyst, CT DPW Technical Services, 165 Capitol Ave., Hartford, CT 06106, Rm. # 275.

Price Schedule Exhibits B1, B2 and B3

Awarded Prices represent unit cost for commodities and/or services per unit of measure performed per project type. The rental rates for all equipment are to be computed at the job site only. Pricing will not include trip, travel time, delivery time charges, or any other miscellaneous charges pertaining to the rental of equipment.

The using agency's representatives will monitor the use of all labor and equipment. If the using agency's representatives determine that equipment is not being utilized, such equipment will not be paid for while remaining idle.

The using agency **will not pay** for tools of the trade which includes but are not limited to the following:

- reusable hand and small tools (e.g., screwdrivers, hammers, garden hoses)
- reusable protective clothing
- computer equipment and software including all costs relating to use of such equipment

- communication equipment, including but not limited to regular and cellular telephones, including all costs relating to the use of such equipment
- consumable supplies/equipment
- cost of routine cleaning of equipment
- monitoring equipment, e.g., PIDs and LEL/O2 Meters

Exhibit B-4

Utilized for item offering(s) other than scheduled items found on schedules B1, B2 & B3

Mandatory Extension to State, Government, Municipal or Not for Profit Entities

Awarded Contractors are required to offer and extend this contract (including same pricing, terms and conditions) to Political Sub-Divisions of the State (Towns and Municipalities), Schools, and Not-For-Profit Organizations.

When a Political Sub-Division, School, and/or Not-For-Profit Organization utilizes this contract all references to the “State” are hereby replaced with the Name of the Using Sub-Division, School, or the name of the Not-For-Profit Organization.

Motor Carrier Safety Review

If the performance of the Contract requires the use and operation of any commercial motor vehicle, as defined in section 14-1 of the Connecticut General Statutes, or other motor vehicle with a gross vehicle weight rating (GVWR) of 18,000 pounds or more, each proposer will be the subject of an evaluation, conducted by the Connecticut Department of Motor Vehicles (CTDMV) of its motor carrier safety fitness. The primary factor in the evaluation is the current SAFESTAT score, calculated by the U.S. Federal Motor Carrier Safety Administration (FMCSA) in accordance with the provisions of Title 49, Section 385.1, et seq., of the Code of Federal Regulations.

To be deemed qualified, the proposer must have an overall SAFESTAT category rating of “D” or better, on the date of evaluation. In addition, the proposer’s driver and vehicle out-of-service rates will be consulted. The rates are determined by the number of out-of-service violations cited to the motor carrier in the course of all official, reported vehicle and/or driver inspections conducted during the preceding thirty (30) months. To be deemed qualified, the proposer must not have either a vehicle or driver out-of-service rate, by percentage of out-of-service violations per the total number of inspections reported, that is more than twice the national average. In addition, the proposer must have a current federal safety management practices rating of “Satisfactory,” as defined in 49 CFR section 385.3, as amended.

Further information concerning the motor carrier safety evaluation, to which a proposer is subject, may be obtained from CTDMV at:

<http://www.ct.gov/dmv/cwp/view.asp?a=798&q=413206&dmvPNavCtr=#49068>.

All official inspection and rating data that is used in the performance of each evaluation is available to any motor carrier through the federal SAFESTAT website, at <http://www.ai.volpe.dot.gov/>.

Quantities and/or Usages

Quantities and/or usages only and in no way represent a commitment and/or intent to purchase. Actual quantities may vary and will be identified on individual purchase orders issued by the requesting Agency.

Subcontractors

Proposer(s) must provide the majority of the services described in the specifications.

The Using Agency must approve any and all subcontractors utilized by the successful proposer prior to any such subcontractor commencing any work. Proposers acknowledge by the act of submitting a proposal that any work provided under the contract is work conducted on behalf of the State and that the Commissioner of the Using Agency or his/her designee may communicate directly with any subcontractor as the State deems to be necessary or appropriate. It is also understood that the successful proposer shall be responsible for all payment of fees charged by the subcontractor(s). A performance evaluation of any subcontractor shall be provided promptly by the successful proposer to the Using Agency upon request.

Unless otherwise directed by the Using Agency, the contractor shall furnish a minimum of three quotes for goods or subcontracted services having a value in excess of ten thousand dollars (\$10,000). Subcontractor markup shall not exceed 10%.

The Contractor(s) shall be responsible for all work performed on any project, all work performed by his subcontractors, and the performance of all equipment installed. In addition, any work done or materials used without inspection by an agency representative may be ordered exposed for examination and testing, and restored at the Contractor's expense. If found unacceptable, the work shall be removed and replaced at the Contractor's expense. The Contractor(s) is responsible for all work, equipment, and materials for any of their subcontractors.

Whenever the contractor(s) intends to purchase goods or services from a subcontractor or supplier (at any tier) in which the contractor(s) has a financial interest, the contractor(s) shall inform the Using Agency of the nature and extent of his interest in advance in writing. The Using Agency shall have the right to accept or reject such subcontractor or supplier as it deems appropriate.

Contract Period

The contract shall be in effect for a period of five (5) years.

The State reserves the right to extend a subsequent contract for a period or periods of up to the full original contract term or parts thereof.

Extensions will be considered based upon the performance of the Contractor and the amount of work in progress at the end of the initial contract term. In the event the contract period expires prior to completion of any on-going projects, the State will require the Contractor to complete these projects as dictated by the purchase order issued by the using agency.

Change of address

In the event the contractor moves or updates contact information, it is the responsibility of the contractor to advise Procurement Services of such changes in writing. The State will not be held responsible for payments or purchase orders delayed due to the lack of routing caused by the lack of notification on the contractor's part. Change of address or telephone updates must be forwarded to: Department of Administrative Services, Procurement Services, 165 Capitol Avenue, Hartford, CT 06106.

Contract Use

No work shall be performed by an awarded contractor prior to the issuance of a duly authorized purchase order by the Using Agency.

Agency Implementation

The scope of this contract includes services on a standard or specialized basis. The contract user will select a contractor according to the procedures set forth below.

Standard Contract Use

The contract user will request a work plan and cost estimate based on awarded rates for required services from all awarded contractors. Contractors will then be required to submit a work plan and cost estimate that will accomplish the work task requested by the contract user. The contract user will evaluate each of the proposals and authorize the selected contractor to proceed. The contract user may provide comments or other conditions to revise the selected contractor's work plan.

Specialized Contract Use

The contract user will request a detailed work plan and cost estimate from a specific contractor deemed to be most qualified and consistent to the initial selection of the award. Following evaluation of submitted plan(s) the State may select a contractor determined by factors that include special expertise, past performance, project knowledge, time sensitivity, or other factors determined by the State.

In both the Standard and Specialized use of the contract the Using Agency will select the contractor with the most advantageous, responsive, and lowest project cost based on review of all work plans and cost estimates.

Purchase Orders

Purchase orders will be issued by the contract user for the services related to this Contract. Contractors are cautioned not to perform services without receiving a purchase order number. The contractor is not guaranteed any work by the issuance of the contract or purchase order. The State shall pay only for services requested and performed to the satisfaction of the State invoiced correctly under a valid purchase order.

Prevailing Wage Regulations:

Contractors must include a Contractors' Wage Certification Form when returning their bid submission. This form certifies that they are willing to pay wages in accordance with the current wages and policies established by the Connecticut Labor Department, OR Federal Labor Department. Prevailing wage shall be paid as follows:

Federally Funded Work: Any purchase order issued and funded by federal funds shall be paid in accordance with Federal Prevailing Wage Scales. This will be designated on the purchase order and will be detailed at the pre-construction meeting.

State Funded Work: State funded purchase orders exceeding \$100,000.00 (initial purchase order amount) shall be paid in accordance with State Prevailing Wage Scales. State funded purchase orders below \$100,000.00 (initial purchase order amount) shall be paid in accordance with Non-Prevailing Wage Scales.

In the case where both sets of wage rates are applicable, the higher rate shall prevail.

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the abatement of asbestos-containing materials by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site at all times and an Asbestos Abatement Site Supervisor during asbestos abatement work. This person must comply with applicable Federal, State and Local regulations that mandate work practices, and be capable of performing the work of this contract.
- B. The Asbestos Contractor shall be licensed by the State of Connecticut in accordance with State of Connecticut Regulations, Sections 20-440-1 through 9 and 20-441. Should any portion of the work be subcontracted, the subcontractor must also be licensed in accordance with these regulations. Site supervisors and workers shall be certified in accordance with Sections 20-437 and 20-438 of the Connecticut General Statutes and Section 20-440-5 of the Regulations of Connecticut State Agencies. The licensing and certification requirements are available from the Environmental Health Services Division, Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- C. The Owner will retain the services of a Project Monitor for protection of its interests and those using the building. Abatement monitoring will be conducted as deemed necessary.
- D. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- E. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- F. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. Accessible - A space easily accessed, and which can be entered or seen without demolition.
- B. Agency - The authoritative force, usually at the state level, or their representative.
- C. AHERA – Asbestos Hazard Emergency Response Act - U. S. EPA regulation 40 CFR Part 763 under Section 203 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2643. This rule mandates inspections, accreditation of persons involved with asbestos, and final air clearances following abatement in public and private schools, and public and commercial buildings.
- D. Alternative Work Practice (AWP) - State of Connecticut Department of Public Health (DPH) approved deviation from Asbestos Standards (Sections 19a-332a-1 to 19a-332a-16 inclusive). Alternative Work Practice methods may be used if pre-approved by DPH or with the approval of DPH, the Design Consultant and State's Project Monitor when not pre-approved. Pre-approved Alternative Work Practice methods are included in Appendix A of this specification. Approval of alternative work practice procedures shall not relieve the Contractor from any codes, regulations or standards required by this specification.
- E. Asbestos Abatement Site Supervisor – Any individual who is employed or engaged by an asbestos contractor to supervise an asbestos abatement project.
- F. Asbestos-Containing Waste Materials - Mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.
- G. Asbestos Control Area - An area where asbestos abatement operations are performed which is isolated by physical boundaries, which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris. Two examples of an Asbestos Control Area are a "full containment" and a "glove-bag."
- H. Authorized Asbestos Disposal Facility - A location approved by the Connecticut Department of Environmental Protection for handling and disposing of asbestos waste or by an equivalent regulatory agency if the material is disposed of outside the State of Connecticut.
- I. Category I Non-Friable Asbestos-Containing Material (ACM) - Asbestos-containing packing, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent

asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

- J. Category II Non-Friable ACM - Any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- K. Class I Asbestos Work - Activities involving the removal of TSI and surfacing ACM and PACM.
- L. Class II Asbestos Work - Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.
- M. Class III Asbestos Work - Repair and maintenance operations, where ACM, including thermal system and surfacing material, is likely to be disturbed.
- N. Class IV Asbestos Work - Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.
- O. Competent Person - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the work place and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition for Class I and Class II work who is specially trained in a training course which meet the criteria of 40 CFR 763 (Appendix C to Subpart E - Asbestos Model Accreditation Plan).
- P. Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.
- Q. Critical Barrier - A layer of six (6) mil polyethylene sheeting taped securely over windows, doorways, diffusers, grilles and any other openings between the Work Area and uncontaminated areas outside of the Work Area, including the outside of the building.
- R. Demolition - The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.
- S. DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.
- T. DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- U. Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

- V. Encapsulation - The treatment of asbestos-containing materials to prevent the release of fibers as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).
- W. Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.
- X. Equipment Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled transfer of materials and equipment into or out of the Work Area, typically consisting of a Washroom and a Holding Area.
- Y. Exposed - Open to view.
- Z. Fiber - A particulate form of asbestos five microns or longer, with a length-to-diameter ratio of at least 3 to 1.
- AA. Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.
- BB. Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.
- CC. Fixed Object - A piece of equipment or furniture in the Work Area, which cannot be removed from the Work Area, as, determined by the State.
- DD. Friable Asbestos-Containing Material (ACM) - Material containing more than one percent asbestos which has been applied on ceilings, walls, structural members, piping, duct work, or any other part of a building, which when dry may be crumbled, pulverized or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized or reduced to powder by hand pressure.
- EE. Friable Asbestos-Containing Building Material (ACBM) - Any friable ACM that is in or on interior structural members or other parts of a school or public or commercial building.
- FF. Glove-Bag Technique - A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contaminated work area. Information on glove-bag installation, equipment and supplies, and work practices is contained in 29 CFR 1926.1101. The glove-bag assembly is a manufactured or fabricated device consisting of a glove-bag (typically constructed of six (6) mil polyethylene or polyvinyl chloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. This technique requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- GG. HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of trapping and retaining asbestos

fibers. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

- HH. Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.
- II. Inspection - An activity undertaken in a school building, or a public or commercial building, to determine the presence or location, or to assess the condition of, friable or non-friable ACBM or suspected ACBM, whether by visual or physical examination, or by collecting samples of such materials.
- JJ. Lock-down - The procedure of spraying polyethylene sheeting and building materials with an encapsulant type sealant to seal in non-visible asbestos-containing residue.
- KK. Major Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of more than 3 square or 3 linear feet of friable ACBM.
- LL. Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area. This procedure requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- MM. Minor Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of 3 square or linear feet or less of friable ACBM.
- NN. Movable Object - A piece of equipment or furniture in the Work Area, which can be removed from the Work Area, as, determined by the State.
- OO. Negative Initial Exposure Assessment - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101(f)(2)(iii) that employee exposure during an operation is expected to be consistently below the PEL.
- PP. Non-Friable Asbestos-Containing Material - Material containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy, that when dry cannot be crumbled, pulverized or reduced to powder by hand pressure.
- QQ. Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.
- RR. Permissible Exposure Limits (PELS) - (1) Time-weighted Average Limit (TWA). The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (f/cc) of air as an eight (8) hour time-weighted average (TWA). (2) Excursion Limit. The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

- SS. Pre-Clean - The process of cleaning an area before asbestos abatement activities begin to ensure all dust and debris in the area considered asbestos containing are properly contained and disposed of. This increases the likelihood the area will pass aggressive air sampling clearance requirements after asbestos-containing materials have been removed.
- TT. Presumed Asbestos-Containing Material - Thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 paragraph (k)(5).
- UU. Project Monitor - The certified and licensed individual contracted or employed by the building owner or contractor to supervise and/or conduct air monitoring and analysis schemes. This individual is responsible for recognition of technical deficiencies in procedures during both planning and on-site phases of an abatement project. Requirements for Project Monitor are defined in the Connecticut Department of Public Health Regulations (Sections 20-440-1 to 20-440-9 and 20-441). In addition to these requirements, this person shall be listed in the American Industrial Hygiene Association's Asbestos Analysts Registry.
- VV. Regulated Area - Area established by the employer to demarcate areas where Class I, II and III work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the PEL.
- WW. Regulated Asbestos-Containing Material (RACM) - (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
- XX. Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting members are wrecked or taken out are demolition.
- YY. Repair - Overhauling, rebuilding, reconstructing or reconditioning of structures or substrates where asbestos, tremolite, anthophyllite or actinolite is present.
- ZZ. Response Action - A method including removal, encapsulation, enclosure, repair and operation and maintenance that protect human health and the environment from friable ACBM.
- AAA. Small-Scale, Short Duration (SSSD) - Tasks such as but not limited to:
1. Removal of asbestos containing insulation on pipes.
 2. Removal of small quantities of asbestos-containing insulation on beams or above ceilings.
 3. Replacement of an asbestos-containing gasket on a valve.
 4. Installation or removal of a small section of drywall.
 5. Installation of electrical conduits through or proximate to asbestos-containing materials.
 6. Removal of small quantities of ACM only if required in the performance of another maintenance activity not intended as asbestos abatement.

7. Removal of asbestos containing thermal system insulation not to exceed amounts greater than those which can be contained in a single glove-bag.
 8. Minor repairs to damaged thermal system insulation, which do not require removal.
 9. Repairs to a piece of asbestos-containing wallboard.
 10. Repairs involving encapsulation, enclosure, or removal, to small amounts of friable ACM only if required in the performance of emergency or routine maintenance activity and not intended solely as asbestos abatement. Such work may not exceed amounts greater than those may, which can be contained in a single prefabricated mini-enclosure. Such an enclosure shall conform spatially and geometrically to the localized work area, in order to perform its intended containment function.
- BBB. Spot Repair – Any asbestos abatement performed within a facility involving not more than three (3) linear feet or three (3) square feet of asbestos-containing material.
- CCC. Unfinished Space - Space used for storage, utilities or work area where appearance is not a factor. Examples of an unfinished space include crawlspace; pipe tunnel and similar spaces.
- DDD. Visible Emissions - Any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.
- EEE. Visible Residue - Any debris or dust on surfaces in areas within the Work Area where asbestos abatement has taken place and which is visible to the unaided eye. All visible residue is assumed to contain asbestos.
- FFF. Waste Generator - Any owner or operator of a source whose act or process produces asbestos-containing waste material.
- GGG. Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
- HHH. Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools, which have been dampened with water, and afterwards thoroughly decontaminated or disposed of, as asbestos-contaminated waste.
- III. Work Area - Specific area or location where the actual work is being performed or such other area of a facility, which the Commissioner determines, may be hazardous to public health because of such asbestos abatement.
- JJJ. Worker Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled passage of workers and authorized visitors, typically consisting of a Clean Room, a Shower Room and an Equipment Room.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. Occupational Safety and Health Administration (OSHA)
 - 29 CFR 1910.1001 - Asbestos, Tremolite, Anthophyllite, and Actinolite.
 - 29 CFR 1926.21 - Safety Training and Education.
 - 29 CFR 1926.32 - Definitions.
 - 29 CFR 1926.51 - Sanitation.
 - 29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.
 - 29 CFR 1926.59 - Hazard Communication.
 - 29 CFR 1926.62 – Lead Exposure in Construction.
 - 29 CFR 1926.200 - Accident Prevention Signs and Tags.
 - 29 CFR 1926.417 - Lockout and Tagging of Circuits.
 - 29 CFR 1926.1101 - Asbestos.
 2. Environmental Protection Agency (EPA)
 - 40 CFR 61, Subpart M - National Emission Standards for Hazardous Air Pollutants; Asbestos NESHA Revision; Final Rule.
 - 40 CFR 763, Subpart E - Asbestos School Hazard Emergency Response Act (ASHERA).
 - 40 CFR 763, Subpart G - Worker Protection Rule.
 - 40 CFR 763, Appendix C to Subpart E - Asbestos Model Accreditation Plan (MAP).
 3. State of Connecticut, Department of Public Health Regulations (DPH)
 - Section 19a-332a-1 through 19a-332a-16 - Standards for Asbestos Abatement.
 - Section 19a-333-1 through 19a-333-13 - Asbestos-Containing Materials in Schools Regulations.
 - Section 19a-332e-1 through 19a-332a-8 – Civil Penalties for Violation of Asbestos Abatement Laws.
 - Section 20-440-1 through 20-440-9 - Licensure and Training Requirements for Persons Engaged in Asbestos Abatement and Asbestos Consultation Services.

Section 20-441 – Refresher Training.

4. American National Standards Institute (ANSI)

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

ANSI Z88.2 - Respiratory Protection.

5. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.

ASTM E 96 - Water Vapor Transmission of Materials.

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

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

ASTM E 1368 - Visual Inspection of Asbestos Abatement Projects.

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

6. Underwriters Laboratories, Inc. (UL)

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

1.5 DOCUMENTATION

A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

1. Local Exhaust Equipment
2. Vacuum Equipment
3. Respirators
4. Pressure Differential Automatic Recording Instrument
5. Surfactant
6. Chemical Encapsulant
7. Polyethylene Sheeting
8. Airless Sprayers
9. Portable Shower Units
10. Adhesive Removal Chemicals
11. MSDS for All Materials Delivered to the Site
12. Letters of Compatibility for Encapsulants and Over coating Materials

C. Statements:

1. State Notification
2. Worker Medical Certification
3. Worker Training Certification
4. Worker Respirator Fit Testing
5. OSHA Laboratory Certification
6. Contractor's Project Monitor Certification
7. Landfill Approval
8. Safety Plan
9. Respirator Protection Plan
 - a. Initial Exposure Assessment
 - b. Copies of all required notifications, approvals and permits for the removal, disposal and transport asbestos-containing or contaminated materials.
 - c. Documentation from a physician certifying that all employees who may be exposed to airborne asbestos in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.1101. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants which to which he/she may be exposed
 - d. Documentation certifying that all employees have received training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.
 - e. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.1101.
 - f. Qualifications of the person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
 - g. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. Include any site-specific information to address health and safety procedures unique to this project.
 - h. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of

the continued effectiveness of the program; and other elements included in the standard.

- i. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross-referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and, contain information on how other contract employees will be informed about hazards their employees may encounter while working in the facility.
- j. Demonstrate that employee's exposure will be below the PEL's. For Class I asbestos work until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PEL's, or otherwise makes a negative exposure assessment, the employer shall presume that employees are exposed in excess of the TWA and excursion limit.

D. Records:

1. Sign-in/out Logs
2. Personal Air Sampling Results
3. Waste Shipment Records
4. Pressure Differential Recording Data
5. NPE Inspection and Smoke Test Logs
6. Rental Equipment Statements
 - a. When rental equipment is to be used in removal areas or to transport waste materials, submit a copy of written notification provided to the rental company informing them of the nature of use of the rented equipment

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.1101. Provide appropriate respiratory protection for each worker and ensure usage during potential asbestos exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements for respirators in use.
- B. Minimum respiratory protection shall be as follows:

Airborne concentration of asbestos,
or conditions of use.

Required Respirator

Not in excess of 10 f/cc
(100 x PEL)

Any powered air purifying
respirator equipped with
high efficiency filters
or any supplied-air respirator

	operated in continuous flow mode.
Not in excess of 100 f/cc (1000 x PEL)	Full face piece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (>1000 x PEL) or unknown concentration	Full face piece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

- a. Respirators assigned for higher airborne fiber concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.
 - b. A high-efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 microns in diameter or larger.
- C. Provide and require all workers to wear protective clothing in Work Areas where asbestos fiber concentrations exceed permissible limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing remains in the Equipment Room for reuse or disposal of as contaminated waste.
- D. Ensure that all workers and authorized persons enter and leave the Asbestos Control Area through the Worker Decontamination Enclosure System.

1.7 EQUIPMENT REMOVAL PROCEDURE

- A. Clean surfaces of contaminated containers and equipment thoroughly by vacuuming with HEPA filtered equipment and wet wiping before moving such items into the Equipment Decontamination Enclosure System for final cleaning and removal to uncontaminated areas. Ensure that personnel do not leave the Asbestos Control Area through the Equipment Decontamination Enclosure System.

1.8 SEQUENCE OF WORK

- A. Proceed in accordance with the sequence of work as mutually agreed upon with the Owner. Work shall be divided into convenient Work Areas, each of which is to be completed as a separate unit. The following sequence of work shall be used for the asbestos abatement work:
 - 1. A visual inspection of the Work Area to determine pre-existing damage to facility components.
 - 2. Release of floor area (Phase) to the Contractor.
 - 3. All temporary utilities required for the project shall be on site and operational prior to the initiation of asbestos work.

4. Removal of all movable objects from the Work Area undergoing abatement by the Contractor.
5. Abatement of all asbestos-containing materials by the Contractor.
6. Air sampling by the Owner's Project Monitor for reoccupancy.
7. Rework activities as specified in other sections of this specification.
8. Cleanup by the Contractor. Work Areas must be returned to their original condition or better.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

1.10 SCHOOL IN SESSION (SIS) REQUIREMENTS – GRADES K-12

- A. No asbestos removal activities are permitted during regular school hours.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2006-33.
- C. The abatement contractor shall provide the documentation included in paragraph 1.5.C to the Asbestos Project Designer 30 days prior to start of asbestos removal activities in each work area for submission in DPH SIS requests. No asbestos removal is permitted in an occupied school facility until approved by DPH.
- D. The Owners project monitor will conduct daily air sampling at prescribed locations throughout the project. Samples will be collected and read via phase contrast microscopy (PCM) twice per shift. All air samples in occupied areas shall be analyzed at the site prior to the end of the shift, by an analyst currently listed on the AIHA Asbestos Analysts registry and the Connecticut DPH Laboratory Certification Program. The results of the analysis of all samples shall be made available prior to return of students on the next day following the date of collection of the samples.
- E. If during asbestos abatement activities, any air sample analyzed by PCM is either overloaded with particulate or exceeds 0.010 f/cc or the background level, whichever is higher, the sample shall be analyzed by the NIOSH 7402 Transmission Electron Microscopy (TEM) method. Results of the analysis of the TEM samples shall be submitted to the DPH, the appropriate local Department of Health Agency and the Connecticut Technical High School System.
- F. If any air sample analyzed by NIOSH 7402 TEM method is either overloaded with particulate and cannot be analyzed or, if upon analysis the sample fiber concentration exceeds 0.005 f/cc, the area outside the established asbestos work area will be considered contaminated with asbestos. The Project Designer shall conduct an assessment of the contamination and the asbestos contractor shall re-establish engineering controls, isolation barriers, abatement work practices, etc. and clean the affected area. An area of the school evacuated due to air sampling data as described above shall not be occupied until: i) the area is cleaned via wet wipe techniques using amended water and HEPA vacuum procedures by the asbestos contractor; and ii) air sampling and analysis of the area satisfies the DPH criteria for re-occupancy.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating four (4) or six (6) mil.
- B. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Disposable bags shall be [transparent] [opaque].
- C. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- D. Surfactant (wetting agent) shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water or as directed by the manufacturer.
- E. Containers must be impermeable and shall be both air and watertight. Containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101 and EPA 40 CFR Part 61.152 as appropriate.
- F. Labels and signs shall conform to OSHA Standard 29 CFR 1926.1101.
- G. Encapsulant shall be bridging or penetrating type which has been approved by the Design Consultant. Usage shall be in accordance with manufacturer's printed technical data. Encapsulant must be compatible with new materials being installed. Encapsulant may be clear or white.
- H. Glove-bag assembly shall be manufactured of six (6) mil transparent polyethylene or PVC with two (2) inward projecting long sleeve gloves, an internal pouch for tools, and an attached labeled receptacle for waste.
- I. Mastic removal chemicals shall be low odor, non-citrus based. Flash point shall be in excess of 140 deg. F.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for asbestos removal.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each eight workers.

- E. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Asbestos Control Area.
- F. Pressure differential automatic recording instrument shall be provided to ensure exhaust air filtration devices provide the minimum pressure differential required between the Work Area and occupied areas of the facility.
- G. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Asbestos Control Area.
- H. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
- I. Mechanical mastic removal equipment shall be suitable for the application.
- J. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule.
- K. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR ASBESTOS ABATEMENT

- A. A Competent Person and Asbestos Abatement Site Supervisor shall be on the job at all times to ensure the establishment and maintenance of the NPE and proper work practices are followed through completion of the project.
- B. Containerize asbestos-containing waste material removed daily. Do not allow ACM to remain on the floor overnight, allowing it to dry out. Fill disposal containers (six (6) mil polyethylene bags or fiber drums) as removal proceeds, seal filled containers, and apply caution labels and clean containers before removal to wash area. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Bags may be placed in drums for staging and transportation to the disposal site. Bags shall be decontaminated by wet cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops. Vinyl asbestos tile removed shall be bagged and placed in clean drums and sealed with locking ring tops. Wet clean each container thoroughly before moving to a holding area or to the waste storage container.
- C. If at any time during asbestos removal, should the Project Monitor suspect contamination of areas outside the Work Area, the Contractor shall stop all abatement work and take steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and visual inspections determine decontamination.

3.2 PREPARATION OF WORK AREA ENCLOSURE SYSTEM

- A. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
- B. Post warning signs meeting the specifications of OSHA 29 CFR 1910.1001 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area. Additional signs may require posting following construction of work place enclosure barriers.
- C. Utilize engineering controls and personnel protective equipment while installing enclosures and supports when asbestos-containing materials may be disturbed.
- D. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.

- E. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- F. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the building. Seal all vents.
- G. Pre-clean movable objects within the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate and remove such objects from Work Areas to a temporary location.
- H. Pre-clean fixed objects within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with six (6) mil polyethylene sheeting sealed with tape. Objects which must remain in the Work Area and which require special ventilation or enclosure include electrical equipment, pumps, compressors, control panels, meter equipment.
- I. Clean the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
- J. Seal off all windows, doorways, skylights, ducts, grilles, diffusers, and any other openings between the Work Area and the uncontaminated areas outside of the Work Area with critical barriers. Doorways and corridors, which will not be used for passage during work, must be sealed with fixed critical barriers.
- K. Conspicuously label and maintain emergency and fire exits from the Asbestos Control Area satisfactory to the Owner.

3.3 WORKER DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, a Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series. Access to the Work Area shall only be through this enclosure.
- B. Access between rooms in the Worker Decontamination Enclosure System shall be through double flap-curtained openings (air locks). Other effective designs are permissible. The Clean Room, Shower Room and Equipment Room located within the Worker Decontamination Enclosure, shall be completely sealed ensuring sole source of airflow into the Asbestos Control Area originates from the outside-uncontaminated areas.
- C. The Clean Room shall be adequately sized to accommodate workers and shall be equipped with a suitable number of hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Changing areas of the Clean Room shall be suitably screened from areas occupied by the public.
- D. The Shower Room shall be of sufficient capacity to accommodate the number of workers. Supply warm water to showers. Provide one shower for each eight workers. No worker or other person shall leave an Asbestos Control Area without showering.

3.4 EQUIPMENT DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, an Equipment Decontamination Enclosure System consisting of two (2) totally enclosed chambers divided by a double flap curtained opening. Other effective designs are permissible. This enclosure must be constructed to ensure that no personnel enter or exit through this unit.

3.5 SEPARATION OF WORK AREAS FROM OCCUPIED AREAS

- A. Occupied areas and/or building space not within the Asbestos Control Area shall be separated from asbestos abatement Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- B. Do not impair required building exits from any occupied building area. Where normal exits have been blocked by the asbestos work, provide temporary exit signs directing building occupants to the nearest available exit location.
- C. Create a pressure differential in the range of 0.02 to 0.04 inches of water column between the Work Area and occupied areas by the use of acceptable pressure differential equipment. Provide a sufficient quantity of units to exhaust the volume of air within the Asbestos Control Area a minimum of four times per hour. Continuously monitor the pressure differential between the Work Area and occupied areas utilizing recording type equipment to ensure exhaust air filtration equipment maintains a minimum pressure differential of 0.02 inches of water column.

3.6 REMOVAL OF FRIABLE ASBESTOS MATERIAL

- A. Remove friable materials identified in accordance with the specific description of work to be accomplished.
- B. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first, with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints.
- C. Removal of existing suspended ceilings, fluorescent light fixtures, and other ceiling mounted items that interfere with asbestos abatement shall be accomplished after engineering controls have been established. Fluorescent fixture components require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all

applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.

- D. Where non-ACM thermal systems insulation exists within the Work Area, decontaminate and protect non-ACM insulation material with two (2) layers of six (6)-mil polyethylene sheeting, or remove as asbestos contaminated.
- E. Spray friable materials with amended water, using airless spray equipment capable of providing a "mist" application to reduce the release of fibers during the removal operation. In order to maintain indoor asbestos concentrations at a minimum, remove the wet asbestos in manageable sections. Materials shall not be allowed to dry out. Material drop shall not exceed 8 feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop. For heights, exceeding 15 feet provide enclosed dust-proof chutes.
- F. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.7 REMOVAL OF NON-FRIABLE RESILIENT FLOORING AND ASSOCIATED MASTIC

- A. Resilient flooring shall be removed by approved methods, which minimize the release of asbestos fibers. Mastic may be removed by hand methods utilizing solvents or by mechanical means. Precaution shall be taken to prevent the leakage of contaminated liquids containing solvents to other areas of the building. Take immediate steps to clean up leaks and prevent future occurrences of the leak. Solvents shall be used in strict accordance with the manufacturer's written recommendations. Mechanical equipment may be used to remove flooring mastic. Ensure surfaces have been adequately wetted to prevent dust emissions prior to operation of mechanical mastic removal equipment.

3.8 REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Non-friable miscellaneous materials shall be removed by approved methods, which minimize the release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap ACM in 6-mil polyethylene sheeting and remove for disposal.

3.9 INTACT REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Intact removal of non-friable asbestos-containing materials shall be accomplished by approved methods without release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap removed ACM in 6-mil polyethylene sheeting and remove for disposal.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter DEH #2003-10.

3.10 REMOVAL OF CONTAMINATED EARTH

- A. Remove all ACM gross debris and visible contamination from the top of soil. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints. Perform removal of ACM from all surfaces containing asbestos in the crawl space. After successful completion of a visual inspection, remove the polyethylene sheeting and place in disposal containers. Any debris which may have leaked behind the inner layer shall be removed by HEPA vacuuming. Remove soil to a depth of 2-inches, or to a depth as required by the Project Manager to remove ACM contamination. Apply a lock-down encapsulant to all surfaces within the Work Area from which asbestos has been removed.

3.11 REMOVAL OF EXTERIOR UNDERGROUND PIPE AND CONDUIT SYSTEM INTACT

- A. After excavating, to expose the top of the underground pipe system, remove by hand, earth from the sides of the pipe without disturbing the exterior. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. At locations where the pipe systems are to be cut into sections, and where the sections are to be lifted, remove earth from the entire perimeter of the pipe conduit. Construct the NPE and establish a negative pressure differential between the Work Area and the exterior. Construct the containment of adequate size to remove a minimum of two linear feet of outer casing and underlying insulation prior to disturbing ACM. Utilize locations where field joints have been made during pipe system installation to the extent feasible. Remove the ACM casing and pipe insulation materials from around steam piping. Once the area has passed clearance testing and all controls established by this section have been removed cut the piping and remove the section from the trench using slings which will not damage the casing. Double wrap sections of pipe in 6-mil polyethylene sheeting and place in the waste storage container or transport vehicle.

3.12 REMOVAL OF EXTERIOR UNDERGROUND PIPE INSULATION

- A. After excavating to expose the top of the underground pipe system, remove by hand earth from the sides of the pipe without disturbing the insulation. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. After excavating to expose the top of the pipe system, remove by hand earth from the sides of the pipe. Construct the NPE along the entire section of piping between manholes, and establish a negative pressure differential between the

Work Area and the exterior. Remove the pipe insulation and all asbestos-containing material, including contaminated earth from around piping as ACM.

3.13 REMOVAL OF WINDOWS FROM BUILDING EXTERIOR

- A. Cover floor surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 5-feet from walls. Cover ground surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 10-feet from building exterior. Install polyethylene sheet over the inside of the window opening and seal with tape.
- B. The windows are to be removed from the opening by hand methods to minimize damage, wrapped in two (2) layers of 6-mil polyethylene sheeting and taken off-site by the contractor for final cleaning prior to disposal and recycling. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible residue (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.14 ALTERNATIVE WORK PRACTICE (AWP) PROCEDURES

- A. The procedures described in this specification are to be utilized at all times. Alternative work practice methods may be used if pre-approved by DPH. Should the Contractor desire to use alternative work practice procedures, which have not been pre-approved by DPH, submit in writing a description of the proposed methods to DPH, Design Consultant, and Owner's Project Monitor for approval.
- B. Alternative work practice (AWP) procedures shall provide equivalent or greater protection than the procedures that they replace. A DPH licensed asbestos project designer must submit in writing a description of the proposed methods to the Design Consultant for review. If the procedure is acceptable to the Design Consultant, an AWP application may then be forwarded to DPH for approval. Failure to secure AWP acceptance or approval shall not be a basis of a claim for additional compensation.
- C. The Contractor shall be responsible for all fees associated with filing Alternative Work Practice (AWP) applications, which have not been pre-approved. AWP applications must be submitted by Connecticut DPH licensed Project Designers.

3.15 CLEAN-UP PROCEDURE

- A. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris which may have splattered or collected on the polyethylene wall covering. Carefully remove the cleaned outer layer of polyethylene from the walls, fold inward as material is being removed, and place in disposal containers. Any debris, which may have leaked behind the outer layer, shall be removed by HEPA vacuuming and/or wet cleaning.
- B. Remove contamination from the exteriors of the negative air machines, scaffolding, ladders, extension cords, hoses and other equipment inside the Work Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or wet cleaning.
- C. The Owner's Project Monitor shall conduct a thorough visual inspection utilizing a high-intensity flashlight, with the containment barriers in place, to detect visible accumulations of

dust or bulk asbestos-containing materials remaining in the Work Area. Should dust, debris or residue be detected, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean up of the work site.

- D. Once the area has been re-cleaned, any equipment, tools or materials not required for completion of the work, shall be removed from the Work Area. Negative air filtration devices shall remain in place and operating for the remainder of the clean-up operation.
- E. Wet wipe the walls beginning at the point farthest away from the negative air filtration units using cotton rags or lint free paper towels. Rags and towels shall be disposed of after each use. Workers should avoid the use of dirty rags to insure proper cleaning of surfaces. Mop the entire floor with a clean mop head and amended water. Water shall be changed frequently. Waste water shall be filtered using best available technology and dumped down an approved drain.
- F. A visual inspection of the Work Area by the licensed Project Monitor shall be conducted. Evidence of asbestos contamination identified during the inspection will necessitate further cleaning as heretofore specified. The area shall be re-cleaned at the Contractors expense until the Standard of Cleanliness is achieved.
- G. Upon successful completion of the visual inspection, the Contractor shall encapsulate all abated surfaces.
- H. Once the lock-down encapsulant has sufficiently dried, air sampling for reoccupancy clearance shall be undertaken using aggressive sampling techniques. Analysis of clearance samples shall follow State of Connecticut Regulations, Section 19a-332a-12. Areas, which do not comply, shall continue to be cleaned by and at the Contractors expense, until the specified Standard of Cleaning is achieved as evidenced by results of air testing. When the Work Area passes the reoccupancy clearance, controls established by this specification may be removed.
- I. During breakdown of containment carefully remove the polyethylene barriers. Fold inward as the material is being removed, and place in leak-tight containers. Any debris which may have fallen behind the polyethylene sheeting shall be removed by HEPA vacuuming and/or wet cleaning. Remove all remaining polyethylene, including critical barriers, and Decontamination Enclosure Systems leaving negative air filtration devices in operation. HEPA vacuum and/or wet wipe any visible residue, which is uncovered during this process.

3.16 REOCCUPANCY CLEARANCE AIR SAMPLING

- A. Reoccupancy clearance air sampling will be conducted by the Project Monitor in accordance with the reoccupancy clearance criteria as set forth in the Regulations of Connecticut State Agencies, Section 19a-332a-12 or Section 19a-333-7 as applicable.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2010-48.
- C. Post-abatement clearance air monitoring requirements are as follows:
 - 1. Air sampling will not begin until at least 12 hours after wet cleaning has been completed and no visible water or condensation remain.

2. Sampling equipment will be placed at random around the Work Area. If the Work Area contains the number of rooms equivalent to the number of required samples based on floor area, a sampler shall be placed in each room. When the number of rooms is greater than the number of samples, a representative number of rooms will be selected.
3. The representative samplers placed outside the Work Area but within the building will be located to avoid any air that might escape through the isolation barriers and will be approximately 50 feet from the entrance to the Work Area, and 25 feet from the isolation barriers.
4. The following aggressive air sampling procedures will be used within the Work Area during all air clearance monitoring:
 - a. Before starting the sampling pumps, direct the exhaust from forced air equipment (such as a 1 horsepower leaf blower) against all walls, ceilings, floors, ledges and other surfaces in the Work Area. This should take at least 5 minutes per 1000 SF of floor area.
 - b. Place a 20-inch fan in the center of the room. (Use one fan per 10,000 cubic feet of room space.) Place the fan on slow speed and point it toward the ceiling.
 - c. Start the sampling pumps and sample for the required time.
 - d. Turn off the pump and then the fan(s) when sampling is complete.
5. Air volumes taken for clearance sampling shall be sufficient to accurately determine (to a 95 percent probability) fiber concentrations to 0.010 f/cc of air.
6. Each homogeneous Work Area, which does not meet the clearance criteria, shall be thoroughly recleaned using HEPA vacuuming and/or wet cleaning, with the negative pressure ventilation system in operation. New samples shall be collected in the Work Area as described above. The process shall be repeated until the Work Area passes the test, with the cost of repeat sampling being borne entirely by the Contractor.
7. For an asbestos abatement project with more than one homogeneous Work Area, the release criterion shall be applied independently to each Work Area.

- D. Continuous air sampling during construction will be conducted by the State's Project Monitor. Reoccupancy clearance testing will be in accordance with State of Connecticut DPH requirements. For window removal, a final visual inspection is to be performed to determine successful completion of all work associated with removal of windows

3.17 CONTRACTOR RESPONSIBILITY

- A. Conduct air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. Perform monitoring to determine accurately the airborne concentrations of asbestos to which employees may be exposed. Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours of receipt of results, and shall be available for review until the job is complete.

3.18 DISPOSAL OF ASBESTOS

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.

- B. Disposal approval shall be obtained prior to commencement of asbestos removal.
- C. Warning signs must be attached to vehicles used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- D. Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and tape into place.
- E. A copy of the completed Waste Shipment Record shall be provided to the Owner.

3.19 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, resecure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, fire alarm systems and sound systems.

3.20 ACTION CRITERIA

- A. If air samples collected outside of the Work Area during abatement activities indicate airborne fiber concentrations greater than original background levels or greater than 0.010 f/cc, as determined by Phase Contrast Microscopy, whichever is larger, an examination of the Work Area perimeter shall be conducted and the integrity of barriers shall be restored. Cleanup of surfaces outside the Work Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming abatement activities.

END OF SECTION 02 82 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work under this Section shall include furnishing all labor, materials and equipment necessary to install flexible connections at equipment connections to fixed ductwork following removal of existing flexible connections and successful air clearance test results.
- B. Contractor shall verify all locations where flexible connections are to be removed and replaced.

1.2 SUBMITTALS

- A. Contractor shall submit manufacturer's complete product data and installation instructions with list of materials, locations, and thickness for each use.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Closely woven, 30 oz. UL approved glass fabric, double coated with neoprene.
- B. Fire retardant, waterproof, air tight, resistant to acids and grease, capable of withstanding temperatures up to 250 degrees F.
- C. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install new flexible duct connections following manufacturer's instructions and in accordance with Fig. 3-5 of the SMACNA Low Pressure Duct Standards.
- B. Seal all ductwork where dismantled using duct sealing tape and mastic. The Contractor shall repair all ductwork that is buckled, misaligned, or damaged as a result of this work at no additional cost to the Owner.

END OF SECTION 23 33 00

PART 1 - GENERAL**1.1 DESCRIPTION OF WORK**

- A. The work included under this section shall include furnishing all labor, materials and equipment necessary to insulate or re insulate all (including presently un-insulated but previously insulated) mechanical systems indicated.
- B. Insulation requirements shall be in accordance with the current edition of ASHRAE 90.1. Insulation shall consist of replacement with a non-asbestos-containing material of the thickness and type as specified herein.
- C. Installation of insulation materials shall include but is not limited to the following:
 - 1. Low Pressure Steam Piping.
 - 2. Steam Condensate Piping.
 - 3. Roof Drains.
 - 4. Domestic Cold Water Piping.
 - 5. Domestic Hot Water Piping.
 - 6. Chilled Water Piping.
 - 7. Hot Water Heating Supply and Return Piping.
 - 8. Mechanical Equipment.
 - 9. HVAC Equipment.
 - 10. HVAC Ductwork.
 - 11. Boiler Breeching

1.2 REFERENCES

- A. ASHRAE 90.1 – Energy Standards for Buildings Except Low-rise Residential Buildings.
- B. ASTM C547 - Mineral Fiber Preformed Pipe Insulation.
- C. ASTM C612 – Mineral Fiber Block and Board Thermal Insulation.
- D. ASTM E84 - Surface Burning Characteristics of Building Materials.
- E. ASTM E96 - Water Vapor Transmission of Materials.
- F. NFPA 255 - Surface Burning Characteristics of Building Materials.
- G. UL 723 - Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Submit manufacturer's technical product data and installation instructions for each insulation material and device proposed for use with a list of materials, locations and thickness for each use.
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1.4 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E84, NFPA 255, and UL 723.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- B. Store insulation in original wrapping and protect from weather and construction traffic.
- C. Protect insulation against dirt, water, chemical, and mechanical damage.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastic, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 - PRODUCTS**2.1 GENERAL**

- A. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

2.2 GLASS FIBER PIPING INSULATION

- A. Fiberglass piping insulation shall conform to ASTM C547 and shall be pre-molded sectional rigid molded with a "k" of 0.24 at 75 degrees F mean temperature, thickness as specified in the Piping Insulation Thickness table. Insulation shall be jacketed with an double pressure-sensitive adhesive ASJ vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.3 GLASS FIBER FITTING INSULATION

- A. Insulation for fittings, flanges, and valves shall be remolded PVC fitting covers with fiberglass insulation inserts of the same thickness and conductivity as used on adjacent piping. Maximum service temperature 450 degrees F. (insert, 150 degrees F PVC). PVC fitting covers shall be 30 mil.

2.4 DUCT INSULATION

- A. Flexible fiberglass duct insulation shall conform to ASTM C553 with 1 pcf density, with a "k" of 0.28 at 75 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 250 degrees
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- B. Rigid fiberglass duct insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.5 EQUIPMENT INSULATION

- A. Rigid fiberglass equipment insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 2" thick. Insulation shall be jacketed with an ASJ vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.6 BOILER BREECHING INSULATION

- A. Mineral rock wool conforming to ASTM C612 class 3, density 3.0 pounds pcf. Maximum service temperature 1200 degrees F.

2.7 ADHESIVES, SEALANTS, AND COATING COMPOUNDS

- A. Vapor barrier coating shall conform to MIL-A-3316, Class 1.

2.8 ANCHOR PINS

- A. Anchor pins and speed washers as recommended by the insulation manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials. Notify Agency if any leaks have been identified during construction activities prior to re-insulation.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

- A. Insulation thickness shall be in accordance with the current edition of ASHRAE 90.1. The insulation thickness identified in the insulation schedule is meant only as a guide and it is the responsibility of the contractor to comply with applicable codes at the time of the work.
 - B. Fiberglass Insulation:
 1. Install materials in accordance with manufacturer's instructions. Secure seams with pressure sensitive tape closure and butt joints with minimum 3-inch (76 mm) wide tape of same material as vapor barrier jacket.
 2. On exposed piping, locate insulation and cover seams in least visible locations.
 3. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations.
 4. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections and expansion joints.
 5. Apply vapor barrier coating to all exposed ends of insulation.
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- C. Insulation thicknesses for hot water systems are for systems operating to 200 F. LP steam is for temps from 200 to 250 F (15 psig). MP steam is for temps from 251 to 350 F (15 to 125 psig). HP steam is for temps from 351 and above (125 psig and above) Condensate is assuming maximum temp of 200 F.

3.3 INSULATION SCHEDULE

Per 2006 International Energy Conservation Code:

PIPING SYSTEM	PIPE SIZE (Inch)	THICKNESS (Inch)
Domestic Cold Water	All	1"
Domestic Hot Water	Up to 2"	1"
Domestic Hot Water	2 1/2" to 8"	2"
Domestic Hot Water Recirculating	All	1"
Horizontal Roof Drains	Up to 6"	1"
Horizontal Roof Drains	8" and over	1 1/2"
Hot Water Supply and Return	Up to 1 1/2"	1"
Hot Water Supply and Return	1 1/2" and over	2"
Low Pressure Steam(up to 15 psig)	Up to 2"	1 1/2"
Low Pressure Steam(up to 15 psig)	2 1/2" to 6"	3"
Low Pressure Steam(up to 15 psig)	8" and over	3 1/2"
Medium Pressure Steam(15 to 120 psig)	Up to 1"	2"
Medium Pressure Steam(15 to 120 psig)	1 1/4" to 4"	2 1/2"
Medium Pressure Steam(15 to 120 psig)	5" to 8"	3 1/2"
High Pressure Steam(125 psig and above)	Up to 2"	2 1/2"
High Pressure Steam(125 psig and above)	2 1/2" to 4"	3"
High Pressure Steam(125 psig and above)	5" to 8"	3 1/2"
Steam Condensate (Gravity and Pumped)	All	1 1/2"
Condensate Drain (copper pipe only)	All	1/2"
Flash Tank	All	3"
Chilled Water (40 F to 55 F)	Up to 1 1/2"	1"
Chilled Water (40 F to 55 F)	1 1/2" and over	1 1/2"
Hot Water Storage Tank	All	2"
Other Heating Equipment	All	2"
Boiler Breeching	All	3"

END OF SECTION 23 07 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall be the removal of asbestos-containing roofing materials by persons who are knowledgeable, qualified, licensed, and trained in the removal, treatment, handling and disposal of asbestos-containing roofing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site with authority to take prompt corrective measures at all times during roofing removal work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract.
- B. The Owner may retain the services of a Project Monitor for protection of its interests and those using the building. Area air sampling and visual inspection to ensure proper clean up of the work area will be conducted as deemed necessary.
- C. Deviations from the Specification require the written approval of the State of Connecticut.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. AGENCY - The authoritative force, usually at the state level, or their representative.
- B. ASBESTOS-CONTAINING MATERIAL (ACM) – Any material containing more than one percent asbestos.
- C. COMPETENT PERSON – In addition to the definition in 29 CFR 1926.32(f), one who is in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation plan (40 CFR Part 763) for Supervisor, or its equivalent.
- D. HIGH-EFFICIENCY PARTICULATE AIR (HEPA) - A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles 0.3 microns in diameter.
- E. LEAK-TIGHT - Solids or liquids cannot escape or spill out. It also means dust-tight.

- F. REGULATED AREA - Area established by the Competent Person to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the Permissible Exposure Limit (PEL).
- G. NON-FRIABLE REGULATED ASBESTOS-CONTAINING MATERIAL - Means any material containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section I, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- H. REGULATED ASBESTOS-CONTAINING MATERIAL (RACM) – means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
 - 1. Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101-Asbestos
 - 2. Environmental Protection Agency (EPA) 40 CFR 61, Subpart M-National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule. 40 CFR 763, Appendix C to Subpart E – Asbestos Model Accreditation Plan (MAP)
 - 3. State of Connecticut, Department of Public Health Regulations (DPH) Sections 19a-332a-1 Through 19a-332a-16 – Standards for Asbestos Abatement

1.5 SUBMITTALS AND NOTICES

- A. Prior to commencement of asbestos abatement work, submit to the A/E and Construction Coordinator and receive approval and/or acknowledgement of following:
 - 1. State notifications (when applicable)
 - 2. Asbestos worker medical clearance to wear a respirator documentation
 - 3. Asbestos worker & Competent Person training documentation
 - 4. Asbestos worker respiratory fit testing documentation
- B. Within 35 days following the date the asbestos waste trailer leaves the job site, submit to the A/E and DPW Construction Coordinator:
 - 1. Waste shipment record for disposal of asbestos roofing material

1.6 PERSONNEL PROTECTION

- A. Provide and require all workers to wear protective clothing and half face respirators when present in the Regulated Area established by the Competent Person.

1.7 WORKER TRAINING REQUIREMENTS

- A. Training for the Competent Person, Supervisor, and Workers shall meet the requirements of Federal and State regulations.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Polyethylene sheeting and disposal bags shall be six (6) mil.
- B. Labels and signs shall conform to applicable regulations.

2.2 TOOLS AND EQUIPMENT

- A. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance per OSHA requirements.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Waste Containers shall be lined with 2 layers of 6 mil polyethylene sheeting and 1 layer of polypropylene burlap.

PART 3 - EXECUTION

3.1 PREPARATION OF WORK AREA

- A. Post warning signs meeting the specifications of OSHA 29 CFR 1910 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area.
- B. Prior to start of work, and as needed during the job, the Competent Person shall inspect the work site and determine whether the roofing material is non-friable asbestos containing material and will likely remain non-friable asbestos containing material during removal activities.
- C. Shut down and seal (with duct tape and 6-mil. poly sheeting) windows & roof level heating and ventilation air intakes that are in position to entrain dust or vapors from the roofing activities. Coordinate shut down of mechanical systems with Owner personnel. Where intake shutdown is

not feasible (as determined by Owner), supply and install horizontal or vertical extensions to relocate the opening of the air intake outside or above the regulated area so as not to entrain dust and vapor emissions from the roofing and re-roofing activity.

3.2 ASBESTOS-CONTAINING ROOFING MATERIAL REMOVAL

- A. All work shall be performed in accordance with OSHA Construction Industry Standard (29 CFR 1926.1101) and EPA NESPAP Standard (40 CFR 61) and applicable State of Connecticut Regulations.
- B. A Competent Person shall be on the job at all times to ensure proper work practices throughout the project.
- C. The Contractor shall utilize methods which do not sand, grind, cut or abrade the asbestos-containing roofing material. Should roofing materials be identified as regulated asbestos-containing material additional federal and state regulations shall apply.
- D. Pick up or HEPA vacuum asbestos-containing roofing debris from non-intact roofs prior to removal of the roofing. Bag debris for disposal.
- E. Utilize wet methods to remove asbestos-containing roofing materials unless such wet methods are not feasible or will create safety hazards, as determined and documented in writing by the competent person.
- F. HEPA vacuum asbestos-containing dust and debris left after the removal of asbestos-containing roofing. Where asbestos-containing built-up roofing is removed, HEPA vacuum the roof decking following roofing removal. Bag dust and debris for disposal.
- G. Remove asbestos-containing flashings and associated cements or mastics using manual methods (such as axe, knife, or shovel). Do not saw, sand, abrade or grind these materials.
- H. Asbestos-containing roofing material shall be carried or passed to the ground by hand or lowered to the ground by crane or hoist. Do not drop or throw asbestos-containing roofing material to the ground or into the dumpster. Transfer lowered asbestos-containing roofing material to the leak tight disposal dumpster carefully so as not to disperse dust.

3.3 DISPOSAL OF ASBESTOS-CONTAINING ROOFING MATERIAL

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.
- B. Asbestos warning signs must be attached to containers used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- C. Label containers of asbestos-containing waste material or wrapped asbestos-containing waste material using warning labels specified by OSHA 29 CFR 1926.1101. Label Asbestos-

containing waste material destined for off-site transport with the name of the waste generator and the location where the waste was generated.

3.4 CONTRACTOR PERSONAL AIR MONITORING RESPONSIBILITY

- A. Conduct air sampling to assure that workers are using appropriate respiratory protection in accordance with OSHA Construction Industry Standard 1926.1101. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.
- B. Produce a written initial asbestos exposure assessment prior to starting asbestos roofing removal work in compliance with OSHA Standard 1926.1101. Keep the exposure assessment on site for review by all concerned parties.

END OF SECTION 07 08 00

PART 1 - GENERAL

1.1 SCOPE

- A. Contractor shall meet the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3, and shall have a Competent Person in control on the job site at all times during work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract. The work specified herein shall be the performance of activities to control and eliminate lead-based paint hazards. These activities include; interim controls, abatement, and encapsulation of various materials containing or covered by lead-based paint
- B. The Owner will retain the services of a certified Inspector or Inspector Risk Assessor to monitor the work.
- C. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor at no additional expense to the State. The Contractor is responsible for protecting all objects remaining in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all notifications, approvals and permits required.
 - 2. Provide, erect, and maintain all staging, planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all removed materials and debris shall become the property of the Contractor and shall be removed from the premises. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the State at no cost to the State.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on lead), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.
 - B. The lead abatement work shall include the removal of lead-based paint, encapsulation of lead-based painted surfaces or stripping of building components containing lead-based paint as specified.
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- C. A project work order description shall be attached to each individual order identifying the scope of work and specific methods and procedures to be followed.
- D. For work that will disturb more than 6 square feet of interior lead based paint or more than 25 square feet of exterior lead based paint in a “child-occupied” structure, the following shall apply: The Contractor shall be certified under the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008. The Contractor shall follow specific work practice requirements of the RRP rule to prevent lead contamination during renovation, repair, and painting projects that disturb LBP in homes, child care facilities, and schools built before 1978. The Contractor shall have at least one “Certified Renovator” assigned to jobs where LBP is disturbed. **Note:** A child-occupied structure is one where a child under the age of 6 resides, including private residences, day care centers, and schools.

1.3 DEFINITIONS

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 soil with a durable covering such as asphalt.

Action Level - Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) calculated as an eight hour time weighted average.

Abrasive Removal - A method of abatement that entails the removal of lead-based paint using mechanical removal equipment fitted with a high efficiency particulate air (HEPA) dust collection system.

Atomic Absorption Spectrophotometer (AA) - An instrument which measures the lead content in parts per million (ppm) using a lead source lamp and a flame capable of measuring the absorbed energy and converting it to concentration.

Biological Monitoring - The analysis of a person's blood to determine the level of lead contamination in the body.

Certified Renovator – An individual who is approved to carry out remodeling work practices described in the terms of the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008.

Chemical Removal - A method of abatement which entails the removal of lead-based paint using caustic or solvent based chemical paint strippers.

Competent Person - An individual who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Complete Abatement - Abatement of all lead-based paint inside or outside a dwelling or building and reduction of any lead-contaminated dust or soil hazards. All of these strategies require

preparation; cleanup; post abatement clearance testing; record keeping; and, if applicable, reevaluation and on-going monitoring.

Deteriorated Paint - Paint that is peeling, flaking, chalking, scaling, or chipping ; paint that is over a defective or deteriorated substrate; or paint that is damaged in any manner such that a child can get paint from the damaged area. Deteriorated paint shall be classified as either in fair condition or poor condition.

Elevated blood lead level - A blood lead concentration as defined in Regulations of the State of Connecticut. A blood lead concentration equal to or greater than forty (40) micrograms per deciliter ($\mu\text{g}/\text{dl}$) as defined in OSHA Standard 1926.62.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking of substances containing lead-based paint.

Enclosure - The use of rigid, durable construction materials that are mechanically fastened to the substrate to act as a barrier between the lead-based paint and the environment.

Engineering Controls - Measures implemented at the work site to contain, control, and/or otherwise reduce worker exposure to, and environmental releases of lead dust and debris.

Evaluation - Risk assessment, paint inspection, reevaluation, investigation, clearance examination, or risk assessment screen.

Fixed Object - A unit of equipment or furniture in the work area which cannot, as determined by the State, be removed from the work area.

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

1. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
2. Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
3. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
4. Is not excluded from regulation as a hazardous waste.

Inspection - A surface-by surface investigation to determine the presence of lead-based paint (in some cases including dust and soil sampling) and a report of the results.

Inspector - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to (1) perform inspections to determine and report the presence of lead-based paint on a surface-by-surface basis through on-site testing, (2) report the findings of such an inspection, (3) collect environmental

samples for laboratory analysis, (4) perform clearance testing, and (5) document successful compliance with lead-based paint hazard control requirements or standards.

Intact Surface - A defect-free surface with no loose, peeling, chipping, or flaking paint. Painted surfaces must be free from crumbling, cracking or falling plaster and must not have holes in them. Intact surfaces must not be damaged in any way.

Interim Controls - A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include specialized cleaning, repairs, maintenance painting, temporary containment, and management and resident education programs. Interim controls also 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.

Lead Abatement Plan - A written plan that identifies the location of intact and defective lead-based paint and describes how defective lead-based surfaces will be abated and how the environment, health, and safety will be protected.

Lead-Based Paint - Paint or other surface coatings that contain lead equal to or greater than 1.0 milligrams of lead per square centimeter or greater than 0.5% by weight.

Lead-Based Paint Hazard - Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health. Lead-based paint hazards include for example, deteriorated lead-based paint, leaded dust levels above applicable standards, and bare leaded soil above applicable standards.

Lead-Based Paint Hazard Control - Activities to control and eliminate lead-based paint hazards, including interim controls, abatement, and complete abatement.

Lead-Based Paint Abatement Planner/ Designer - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 for planning and designing lead-based paint abatement projects.

Lead Consultant - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to perform as an inspector, risk assessor or planner/designer

Lead Control Area - An area where lead abatement operations are performed where airborne concentrations of lead dust exceed or can reasonably be expected to exceed the permissible exposure limit. The lead control area is isolated by physical boundaries from occupied areas to prevent the spread of lead dust, paint chips, debris, and unauthorized entry of personnel.

Lead-Free Dwelling - A lead-free dwelling contains no lead-based painted surfaces and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Lead Hazard Screen - A means of determining whether residences in good condition should have a full risk assessment. Also called a risk assessment screen.

Lead-Safe Dwelling - A lead-safe dwelling contains intact, or encapsulated lead-based paint and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Manifest - The shipping document (EPA Form 8700-22 or a comparable form required by the State or locality) used for identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transport from the point of generation to the point of treatment, storage, or disposal.

Paint Film Stabilization - The process of wet scraping, priming, and repainting surfaces coated with deteriorated lead-based paint; paint film stabilization includes cleanup and clearance.

Paint Removal - An abatement strategy that entails the removal of lead-based paint from surfaces. For lead hazard control work, this can mean using chemicals, heat guns below 700 degrees Fahrenheit, and certain contained abrasive methods. Open flame burning, open abrasive blasting, sand blasting, water blasting and extensive dry scraping are prohibited paint removal methods.

Permissible Exposure Limit (PEL) - Fifty (50) micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air averaged over an 8 hour period as determined by 29 CFR 1926.62.

Personal Monitoring - Sampling of lead concentrations within the breathing zone of a worker to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employee's work tasks.

Reevaluation - In lead hazard control work the combination of a visual assessment, and collection of environmental samples performed by a certified risk assessor to determine if a previously implemented lead-based paint hazard control measure is still effective and if the dwelling remains lead-safe.

Replacement - A strategy of abatement that entails removing components such as windows, doors, and trim that have lead painted surfaces and installing new or de-lead components free of lead-based paint.

Risk Assessment - A on-site investigation of a residential dwelling to discover any lead-based paint hazards. Risk assessments include an investigation of the age, history, management, and maintenance of the dwelling, and the number of children under age 6 and women of childbearing age who are residents; a visual assessment; limited environmental sampling (i.e., collection of dust wipe samples, soil samples, and deteriorated paint samples); and preparation of a report identifying acceptable abatement and interim control strategies based on specific conditions.

Risk Assessment Screen - A type of risk assessment performed only in buildings in good condition using fewer samples but more stringent evaluation criteria (standards) to determine lead hazards.

Inspector Risk Assessor - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health Sections 20-478-1 through 20-478-3 to (1) perform risk assessments, (2) identify acceptable abatement and interim control strategies for reducing identified lead-based paint hazards, (3) perform clearance testing and reevaluations, and (4) document the successful completion of lead-based paint hazard control activities.

Toxicity Characteristic Leaching Procedure (TCLP) - Toxicity characteristic leaching procedure utilizing EPA Test method SW-846, Method 1311 to determine whether waste can be classified as hazardous or construction waste for disposal purposes.

Visible Residue - Any paint debris, dust, or chips on surfaces within the work area where lead abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating lead dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous lead waste.

Wipe Test - A test used to determine the concentration of lead particles; used to determine whether clearance levels for lead abatement have been achieved. A wipe test assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of lead contained in that area.

X-ray Fluorescence (XRF) Analyzer - An analytical instrument which measures lead concentration of dried paint on surfaces or in a laboratory sample in milligrams per square centimeter (mg/cm²) using a radioactive source within the instrument. There are two types of XRF-analyzers commonly available which require distinct and different testing protocols - "direct read" and "spectrum analyzer".

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. State of Connecticut, Department of Public Health Regulations (DPH)

Section 19a-111-1 through 19a-111-11 - Lead Poisoning Prevention And Control Regulations.

Section 20-478-1 through 20-478-3 - Lead Licensure and Certification Regulations.
 2. State of Connecticut, Department of Environmental Protection (DEP)

Section 22a-209-1 through 22a-209-16 - Solid Waste Management Regulations.

Section 22a-449(c)-100 through 22a-449(c)110 and 22a-449(c)-11 - Hazardous Waste Management Regulations.
 3. Occupational Safety and Health Administration (OSHA)

24 CFR 35 - Lead Based Paint Poisoning Prevention.

29 CFR 1910.134 - Respiratory Protection.

29 CFR 1910.146 - Permit-Required Confined Spaces.

29 CFR 1926.21 - Safety Training.

29 CFR 1926.28 - Personal Protective Equipment.
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29 CFR 1926.55 - Gases, Vapors, Fumes, Dusts, and Mists.

29 CFR 1926.57 - Ventilation.

29 CFR 1926.59 - Hazard Communication.

29 CFR 1926.62 - Lead.

29 CFR 1926.103 - Respiratory Protection.

4. Environmental Protection Agency (EPA)

40 CFR 260 - Hazardous Waste Management Systems: General.

40 CFR 261 - Identification and Listing of Hazardous Waste.

40 CFR 262 - Generators of Hazardous Waste.

40 CFR 263 - Transporters of Hazardous Waste

40 CFR 264 - Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 268 - Land Disposal Restrictions

40 CFR 745 - Subpart F - Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards Upon Sale or Lease of Residential Property.

40 CFR 745 - Subpart L - Lead-Based Paint Activities.

40 CFR 745 - Subpart Q - State and Indian Tribal Programs.

5. Department of Transportation (DOT)

49 CFR 172 - Hazardous Materials Tables and Hazardous Materials Communications Regulations

49 CFR 178 - Shipping Container Specification

6. Department of Housing and Urban Development (HUD)

Lead-Based Paint: Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.

1.5 DOCUMENTATION

A. Submit the following documentation to ensure compliance with applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

- HEPA Vacuum Equipment
- Respirators
- Lead Specific Detergent
- Lead Encapsulating Materials
- Portable Shower Units and Hand Washing Facilities
- Chemical Removal Agents
- Neutralizers for Chemical Removal Agents
- MSDS for All Materials

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Blood Lead Level
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Lead Abatement Plan

1. Copies of all required approvals and permits for disposal and transport of hazardous lead-bearing waste including the HW identification number of the waste hauler.
 2. Documentation from a physician certifying that all employees who may be exposed to airborne lead dust in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.62. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants to which he/she may be exposed. Training certificates, licenses, respirator fit test certificate and medical records (including pre-abatement blood lead levels and medical clearance to wear a respirator) for each lead abatement worker shall be available.
 3. Documentation certifying that all employees have received training in the proper handling of materials that contain lead dust; understand the health implications and risks involved, including the illnesses possible from exposure to airborne lead dust fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of lead dust as related to health and respiratory equipment as indicated in 29 CFR 1926.62 on an initial and annual basis.
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4. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.62.
5. Qualifications of the laboratory and person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with 29 CFR 1926.62. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
6. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness and injury. Include any site specific information to address health and safety procedures unique to this project.
7. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of the continued effectiveness of the program; and other elements included in the standard.
8. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks, such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and contain information on how other contract employers will be informed about hazards their employees may encounter while working in the facility.
9. Written description of lead abatement activities planned detailing methods, equipment, engineering controls, crew size, employee job responsibilities, operating and maintenance procedures.

D. Records:

Worker Medical Records (including post-abatement blood-lead levels).
Worker Personal Air Sampling Results.
Certified Lead Waste Manifests.
TCLP Laboratory Results.

1.6 PERSONAL PROTECTION

- A. Prior to commencing work, instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment, including procedures unique to this project. A formal respiratory protection program must be implemented in accordance with 29 CFR 1926.62.
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- B. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.62. Provide appropriate respiratory protection equipment for each worker and ensure usage during potential lead dust exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements on the job whenever required for respirators in use.
- C. During the period of initial personal monitoring, personal exposure levels shall be presumed to be as specified in Table 1 with respiratory protection selected in compliance with Table 2. Following the initial personal monitoring period, select respirators using Table 2 and the personal monitoring data. Conducting a lead abatement activity without the use of a respirator is not permitted unless the personal monitoring data for that activity are all below the action level of 30 µg/cubic meter.

TABLE 1

<u>Activity</u>	<u>Presumed Exposure</u>
Removal of painted component	<50 µg/cubic meter
Manual demolition Manual scraping Manual sanding Chemical removal Manual wire brushing Encapsulation Cleanup of chips, dust, or contaminated soil Shrouded power sanding, grinding, wire brushing, or needle gun removal	<500 µg/cubic meter
Abrasive Blasting Welding Cutting, and Torch Burning	<2500 µg/cubic meter

TABLE 2

<u>Airborne Lead Dust Level</u>	<u>Required Respirator</u>
Not in excess of 500 µg/cubic meter(10xPEL)	Half-mask air-purifying respirator equipped with HEPA filters.
Not in excess of 2,500 µg/cubic meter(50xPEL)	Full face piece powered air- purifying respirator equipped with HEPA filters.

- D. Workers shall wear protective clothing in work areas where lead dust concentrations exceed permissible exposure limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing is disposed of as lead-contaminated waste. Launderable clothing must be handled and washed in accordance with 29 CFR 1926.62.
- E. Workers wearing half-mask respirators shall also wear safety glasses with side shields.
- F. Provide protective clothing impervious to caustic materials during chemical removal activity. Provide gloves of neoprene composition during chemical removal activity. Provide face shields when conducting chemical removal above eye level. Provide organic vapor cartridges in addition to HEPA cartridges when conducting chemical removal activity.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with lead shall be decontaminated or disposed of as lead waste.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints, shall be delivered to the job site with factory label indicating 6 mil.
 - B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
 - C. Protective clothing used during chemical removal operations shall be impervious to caustic materials. Gloves used during chemical removal shall be of neoprene composition with glove extenders.
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- D. Polyethylene disposable bags shall be six (6) mil and transparent in color.
- E. Detergent shall be a high phosphate content lead specific cleaning agent.
- F. Chemical paint removal agents shall not contain methylene chloride. Chemical removers used on masonry surfaces shall contain anti-stain formulation that inhibits discoloration of stone, granite, or brick. Chemical removers used on wood surfaces shall not raise or discolor the surface being abated.
- G. Chemical removal agent neutralizer shall be compatible with the substrate which they are applied to and the chemical stripper they are used in conjunction with.
- H. Encapsulants must appear on the State of Connecticut, Department of Public Health, Childhood Lead Poisoning Prevention Program Registry of Authorized Encapsulant Products. Only listed products are authorized for use in Connecticut by the Department of Public Health. Encapsulants are classified as cementitious or liquid. The project work order shall indicate the encapsulant type and location of application.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for lead removal:
- B. Air monitoring equipment shall be of the type and quantity required to monitor operations and conduct personnel exposure surveillance in accordance with OSHA requirements.
- C. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. One shower stall shall be provided for each eight workers.
- E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger.
- F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
- G. For manual scraping activities, Contractor shall supply each worker with multiple newly sharpened scrapers on a daily basis.
- H. Sanders, grinders, wire brushes and needle gun removal equipment shall be equipped with a HEPA filtered vacuum dust pick-up system.
- I. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the work area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR LEAD ABATEMENT

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the work area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1926.62 at each work area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the work area a worker decontamination enclosure consisting of equipment room, shower room, and clean room in series. Access between rooms in the worker decontamination enclosure shall be through double flap curtained openings. The shower room shall be of sufficient capacity to accommodate the lead abatement workers employed at the project. Supply warm water to showers. Provide one shower for each eight workers. The change room and wash facilities shall be equipped with suitable hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Shower and wash water shall be collected, filtered, and disposed of as specified in paragraph 3.16.
- C. Establish remote to the work area hand washing facilities. All workers shall wash prior to eating.
- D. No personnel shall be permitted to leave the work site or eat lunch unless first decontaminated by wet washing and HEPA vacuuming to remove all lead debris.
- E. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all lead debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
 - B. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of work area and occupied areas. Equip doors leading into the lead control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
 - C. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
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- D. Provide drop cloths to catch falling paint chips and chemical removal agents at interior work areas.
- E. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of work area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- F. Remove the building component or the LBP by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- G. Building components which have been removed shall be recycled where feasible.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. For dry waste place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. For liquid waste extend the end of the plastic a sufficient distance to contain the runoff and raise the edge of the sheets to trap liquid waste.
- D. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- E. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- F. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF LEAD WORK AREA FROM OCCUPIED AREAS

- A. Work area separation shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
- C. Do not impair all building exits simultaneously from any occupied building area.
- D. Shut all windows on the face of the building where lead paint removal is occurring. Seal all air conditioner intake grates and vents on the face of the building where lead paint removal is occurring.

3.6 CHEMICAL PAINT REMOVAL

- A. Apply chemical stripper in quantities and for duration's specified by manufacturer.
- B. Remove lead-based paint from surface down to bare substrate with no trace of residual pigment. Use sanding, hand scraping, and dental picks to supplement chemical methods as required to remove residual pigment.
- C. Apply neutralizer compatible with substrate and chemical agent to substrate following removal in accordance with manufacturer's instructions.
- D. Protect adjacent surfaces from damage by chemical removal methods.
- E. Maintain a portable eyewash station in the work area.

3.7 MECHANICAL PAINT REMOVAL

- A. Sanders, grinders, rotary wire brushes, or needle gun removers shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
 - B. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
 - C. Remove all lead based paint from surface down to bare substrate with no trace of residual pigment. Use chemical methods, hand scraping, and dental picks to supplement abrasive removal methods as required to remove residual pigment.
 - D. Protect adjacent surfaces from damage from abrasive removal techniques.
 - E. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to paint film stabilization or encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
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3.8 PROHIBITED PAINT REMOVAL METHODS

- A. The use of heat guns, or any blasting media, or power tool assisted grinding, sanding, cutting, or wire brushing without the use of HEPA vacuum dust collection systems to remove lead-based paint is prohibited.
- B. Welding or torch cutting of materials painted with lead-based paint is prohibited. Where cutting, welding, rivet busting, or torch cutting of materials is required, prior removal of the lead-based paint shall be performed in the affected area.
- C. Dry scraping.

3.9 SOIL REMOVAL

- A. Remove soil to a depth of 6 inches by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of paint chips are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all lead-based paint containing surfaces.
 - D. Enclosure materials shall be mechanically fastened to existing framing members. Caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.
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3.12 ENCAPSULATION

- A. Procedures for the application of encapsulation products shall be in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals.
- B. Application of encapsulants to friction or impact surfaces is prohibited.
- C. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
- D. Prior to application of encapsulants, perform the tape, X-cut tape and patch tests in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals to determine if the surface is suitable for encapsulation.
- E. Follow the encapsulant manufacturers printed application instructions.
- F. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62. This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove lead chips or dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Operational shower facilities, remote to the Lead Control Area, shall be provided by the contractor and maintained in working order such that any worker has the option of decontamination by showering. If air monitoring data by the contractor or Owner's inspector or risk assessor shows that employee exposure to airborne lead exceeds 50 µg/m³, the following mandatory showering conditions apply:
 - 1. Street clothes cannot be worn into the Lead Control Area and shall be stored in the change room. Workers shall wear disposable suits over clothing that stays on site in the change room, or disposable suits over nylon or Tyvek undergarments, or coveralls that are laundered on site.
 - 2. Street shoes cannot be worn into the Lead Control Area and shall be stored in the change room. Dedicated shoes that do not leave the Lead Control Area may be utilized. Work shoes covered by disposable booties may be utilized if the shoes are cleaned after each use and kept in the change room.
 - 3. Showers must be utilized.
- C. Ensure proper entry and exit procedures for all persons who enter and leave the Lead Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of paint chips and associated dust and debris. During clean-up, utilize rags and sponges wetted with lead-specific detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous lead-bearing waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 CLEARANCE

- A. A certified Inspector or Inspector Risk Assessor shall conduct all clearance testing inspections. Clearance dust sampling should be performed no sooner than 1 hour after completion of the final cleanup to permit the dust to settle.
- B. Visual Inspection Protocol: Visual inspection will verify the work has been completed and the area in which the work was performed does not contain visible dust.
- C. Dust Sampling Protocol: For interior abatement in facilities scheduled for reoccupancy where documentation that the work area has been adequately cleaned to meet CT DPH regulations Section 19a-111-4(e) is desired use the following testing protocol:
 - 1. Following the final visual inspection, a certified Inspector or Inspector Risk Assessor shall take lead wipe samples from the area that has undergone interior lead abatement activity.
 - 2. Following wipe analysis, if lead dust levels are in excess of the limits as set forth in the Regulations of Connecticut State Agencies, Section 19a-111-4.

The Contractor shall repeat HEPA vacuuming and wet-wiping the entire room. Repeat the testing and cleaning sequence until the standard for clearance has been achieved.

- D. For soil abatement or exterior abatement situations where documentation of soil decontamination is desired use the following testing protocol:
 - 1. For contaminated soil abatement areas a certified inspector or risk assessor shall take post-abatement soil samples (one (1) composite sample for every 500 square feet of abated soil area at randomly selected locations) and have the samples analyzed by atomic absorption for lead content. Samples shall be taken using a steel trowel to extract soil to a depth of four (4) inches. Three (3) randomly selected samples shall be taken from each 500 square foot area and the three (3) samples shall be mixed into one container for analysis.
 - 2. If any of the post-abatement soil samples exceed 2000 milligrams of lead per kilogram of soil analyze baseline soil samples to determine if the soil had a high lead level prior to the work.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous lead bearing material must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to leach lead at hazardous levels in excess of 5 mg/liter. The Contractor shall containerize and dispose of the following materials as hazardous lead waste at an EPA approved treatment, storage, and disposal facility:
1. Paint chips
 2. Paint dust
 3. Sludge from chemical stripping
 4. Dust from HEPA filters and from damp sweeping
 5. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 6. Disposable work clothes and respirator filters
 7. Contents of HEPA vacuums used on this project
 8. Polyethylene sheeting used during the course of chemical removal or heat gun removal
 9. All used duct tape
- C. Contractor shall transport the following materials generated during renovation activity to a scrap metal yard for recycling:
1. Any metal components painted with lead based paint
 2. Metallic lead components
- D. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
1. Polyethylene sheeting used in abatement activities other than chemical or heat gun removal
- E. Contractor shall collect the wash water generated by the worker shower, wash facilities, or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
1. 5 micron porosity in-line cartridge particulate filter followed by:
 2. Activated carbon filter in-line cartridge
- Hold the filtered water for testing by the State's Inspector or risk assessor prior to discharge to the sanitary sewer. The State's Inspector or risk assessor shall test the water and verify lead levels below 0.1 parts per million (ppm) and Ph between 6 and 8 prior to discharge. Water that fails the testing criteria shall be treated with sodium hydroxide, Ph adjusted, and retested. If the second test fails the 0.1 parts per million (ppm) of water test, Contractor shall filter waste water by reverse osmosis prior to testing and discharge to the sanitary sewer.
- F. All hazardous lead waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 29 CFR 1926.62 and 49 CFR 172 to identify the type of waste and the date the container was filled.
- G. The Contractor may not store containerized hazardous lead waste on the job site for in excess of 180 calendar days from the accumulation start date.
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- H. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- I. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

END OF SECTION 02 83 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the remediation of building components contaminated with mold and the abatement of hazardous materials. Remediation and abatement activities shall be performed by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of mold and hazardous materials, and the subsequent cleaning of the affected environment. Specific requirements for mold and hazardous materials remediation will be established by the Owner's Environmental Consultant. These requirements are to include, but are not limited to: containment and negative air requirements; specific work practices or methods of accomplishing remediation and establishment of the clearance standard for reoccupancy.
- B. The Owner will retain the services of an Environmental Hygienist for protection of its interests and those using the building. Monitoring will be conducted as deemed necessary.
- C. Restore all work areas and auxiliary areas utilized during remediation to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the Owner as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on mold and hazardous materials), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
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- B. A description of the scope of work will be attached to each individual project work order.
- C. The Contractor shall provide these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. In addition, the Contractor shall acquire professional training in mold abatement, and become familiar with technical and reference materials referenced in the State of Connecticut, Department of Public Health (DPH) “*CT Guidelines for Mold Abatement Contractors*”. This document refers readers to the most current version available of the *Institute for Inspection, Cleaning and Restoration Certification (IICRC), Standard and Reference Guide for Professional Mold Remediation, S520*, which provides a detailed discussion about the technical aspects of mold abatement.
- D. The Contractor shall provide these services in accordance with the guidelines established in the documents listed below, and any subsequent updated re-issues of the documents:
- Connecticut Guidelines for Mold Abatement Contractors, 2006, Connecticut Department of Public Health (DPH);
 - Standard and Reference Guide for Professional Mold Remediation, S520, December 2003, Institute for Inspection, Cleaning and Restoration Certification (IICRC) ;
 - Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health, 2006;
 - Mold Remediation in Schools and Commercial Buildings, March 2001, United States Environmental Protection Agency (US EPA);
 - Fungal Contamination in Buildings: A Guide to Recognition and Management, Health Canada, 1995;
 - The Industrial Hygienist's Guide to Indoor Air Quality Investigations, 1993 (AIHA);
 - Building Air Quality, A Guide for Building Owners and Facility Managers, 1991 (US EPA);
 - Bioaerosols: Assessment and Controls, 1999, American Conference of Governmental Industrial Hygienists (ACGIH);
 - Field Guide for the Determination of Biological Contaminants in Environmental Samples, 1996, American Industrial Hygiene Association (AIHA);
 - Complete School Guidance Document, DPH;
 - Ventilation for Acceptable Indoor Air Quality, ANSI/ASHRAE Standard 62-2001;
 - Indoor Air Quality – A Systems Approach, Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA);
 - IAQ Guidelines for Occupied Buildings Under Construction, SMACNA.
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1.3 DEFINITIONS

Accessible - A space easily accessed, and which can be entered or seen without demolition.

Competent Person - An individual who is capable of identifying existing and predictable mold and/or other hazardous materials in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.

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

DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.

DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.

Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking.

Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.

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

Exposed - Open to view.

Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.

Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.

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

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

- Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
- Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
- Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
- Is not excluded from regulation as a hazardous waste.

HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.

Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area.

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

Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.

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

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

Visible Residue - Any debris, dust, or chips on surfaces within the work area where abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous waste.

Wipe Test - A test used to determine the concentration of dust particles; used to determine whether clearance levels for mold and/or hazardous materials abatement have been achieved. A wipe test

assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of mold and/or hazardous materials contained in that area.

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

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. Occupational Safety and Health Administration (OSHA)
 - 29 CFR 1926.21 - Safety Training and Education.
 - 29 CFR 1926.32 - Definitions.
 - 29 CFR 1926.51 - Sanitation.
 - 29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.
 - 29 CFR 1926.59 - Hazard Communication.
 - 29 CFR 1926.200 - Accident Prevention Signs and Tags.
 - 29 CFR 1926.417 - Lockout and Tagging of Circuits.
 2. American National Standards Institute (ANSI)
 - ANSI Z9.2 - Fundamentals Governing the Design and Operation of Local Exhaust Systems.
 - ANSI Z88.2 - Respiratory Protection.
 3. American Society of Testing and Materials (ASTM)
 - ASTM E 84 - Surface Burning Characteristics of Building Materials.
 - ASTM E 96 - Water Vapor Transmission of Materials.
 - ASTM E 119 - Fire Tests of Building and Construction Materials.
 4. Underwriters Laboratories, Inc. (UL)
 - UL 586 - High-Efficiency, Particulate, Air Filter Units.

1.5 DOCUMENTATION

- A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.
- B. Manufacturer's Catalog Data:
-

- Local Exhaust Equipment
- Respirators
- Pressure Differential Automatic Recording Instrument
- Polyethylene Sheeting
- Airless Sprayers
- MSDS for All Materials Delivered to the Site
- Biocides
- Cleaning Chemicals
- Encapsulating Materials
- HEPA Vacuum Equipment

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Mold and/or Other Hazardous Materials Abatement Plan

D. Records:

- Sign-in/out Logs
- Personal Air Sampling Results
- Waste Shipment Records
- Pressure Differential Recording Data
- NPE Inspection and Smoke Test Logs

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134. Provide appropriate respiratory protection for each worker and ensure usage during potential mold and/or other hazardous materials exposure whenever engineering and work practice controls are not adequate to prevent atmospheric contamination at the job site. Select respirators from among those approved as being acceptable for protection by the National Institute for Occupational Safety and Health (NIOSH). Provide an adequate supply of filter elements on the job whenever required for respirators in use.
 - B. Provide dermal and respiratory protection for all workers to wear in the Work Areas. The selection of personal protective equipment depends on the anticipated exposure, types of microbial and/or hazardous materials contamination, activities to be completed and potential hazards of chemicals that may be used in the remediation process. Personal protective equipment can consist of: respirator, eye protection, disposable impervious coveralls (including hood and booties) with elastic wrists and ankles, foot protection, hand protection, head protection, and hearing protection. In accordance with 29 CFR 1910.32, each worker shall be provided with the necessary personal protective equipment to reduce the risk of exposure to chemical, physical, or biological hazards.
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1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with mold and/or hazardous waste shall be decontaminated or disposed of appropriately.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating six (6) mil.
- B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- C. Scrub brushes, disposable sponges and towels as appropriate for the work.
- D. Biocides shall be specific for the intended purpose of cleaning mold contamination from building components or materials.
- E. Containers must be impermeable and shall be both air and watertight.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for the work.
 - B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
 - C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
 - D. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Work Area.
 - E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
 - F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
-

- G. Removal equipment (including, but not limited to sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust pick-up system.
- H. Other materials such as lumber, nails and hardware necessary to construct and dismantle the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR REMEDIATION

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the Work Area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1910.37 (egress means and exits) and OSHA 29 CFR 1910.145 (biological hazards, caution, and dangers) at each Work Area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.
- D. Containerize waste material removed daily. Do not allow debris to remain on the floor. Fill disposal containers as removal proceeds, seal filled containers.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the Work Area hand washing facilities. All workers shall wash prior to eating.
- C. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all mold and/or other hazardous material debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
 - B. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
 - C. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.
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- D. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- E. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the Work Areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of Work Area and occupied areas. Equip doors leading into the control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
- F. As indicated in the individual work order, occupied areas and/or building space not within control areas may be separated from abatement Work Areas by means of airtight barriers.
- G. Cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- H. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- I. Remove the building component by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- J. Building components which have been removed shall be recycled where feasible.
- K. Conspicuously label and maintain emergency and fire exits satisfactory to the Owner.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
- B. Place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- D. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- E. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF WORK AREA FROM OCCUPIED AREAS

- A. Work Area separation shall be as indicated in the individual work order.
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- B. As indicated in the individual work order, occupied areas and/or building space shall be separated from Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- C. Do not impair all building exits simultaneously from any occupied building area. Where normal exits have been blocked by the abatement work, provide temporary exit signs directing building occupants to the nearest available exit location.
- D. Shut all windows on the face of the building where abatement is occurring. Seal all air conditioner intake grates and vents on the face of the building where abatement is occurring.
- E. As indicated in the individual work order, create a pressure differential between the Work Area and occupied areas by the use of acceptable pressure differential equipment.

3.6 MECHANICAL MOLD AND/OR HAZARDOUS MATERIAL REMOVAL

- A. Remove building components or materials in accordance with the specific description of work to be accomplished. Methods for component removal shall be appropriate for the work and are to be performed in a manner to minimize the risk of contamination in other areas of the building.
- B. Removal equipment (including, but not limited to, sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
- C. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
- D. As indicated in the individual work order, remove all mold and/or hazardous materials from surface down to bare substrate with no trace of residual material. Use wet wiping, wet sponging, wet scraping, and wet brushing (with a nylon brush) to supplement abrasive removal methods as required to remove residual material (wire brushes are not permitted).
- E. Protect adjacent surfaces from damage from abrasive removal techniques.
- F. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
- G. During removal, spray the work area with water using airless spray equipment capable of providing a "mist" application to reduce airborne dust. Hose length shall be sufficient to reach all of the work area. Do not "flood" the area with hose type water supply equipment with the potential to create water releases from the work area.

3.7 PROHIBITED MOLD AND/OR HAZARDOUS MATERIAL REMOVAL METHODS

- A. Dry scraping.
- B. Wire brushes.

3.8 CLEANING OF CONTAMINATED BUILDING COMPONENTS OR MATERIALS

- A. Clean building components or materials in accordance with the specific description of work provided by the Owner Environmental Hygienist. Methods for cleaning shall be appropriate for the work to be performed.
- B. All surfaces from which mold and/or other hazardous materials have been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). Cleaning shall also include the use of HEPA filtered vacuum equipment
- C. Cleaning shall proceed in a manner such that dislodged materials will be collected on rags or by the HEPA vacuum equipment. Methods that agitate contamination are not permitted.
- D. Biological agents shall be used in strict accordance with the manufacturer's printed instructions. Biological agents may only be applied to clean or cleaned surfaces.

3.9 SOIL REMOVAL

- A. As indicated in the individual work order, remove soil to the indicated depth by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of hazardous materials are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose hazardous materials and appropriately wash down the surface. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all mold and/or hazardous-material containing surfaces.
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- D. Enclosure materials shall be mechanically fastened to existing framing members. As indicated in the individual work order, caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.

3.12 ENCAPSULATION

- A. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose mold and/or hazardous materials. Repair all substrate damage with an appropriate patching material.
- B. Follow the encapsulant manufacturers printed application instructions.
- C. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f). This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Ensure proper entry and exit procedures for all persons who enter and leave the Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of mold and/or hazardous material dust and debris. During clean-up, utilize rags and sponges wetted with detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 POST-REMEDICATION ASSESSMENT

- A. Specific requirements prior to reoccupancy of the remediated area will be established by the Owner Environmental Consultant.
 - B. The post-remediation assessment will include a visual inspection, bioaerosol sampling and ~~dust~~ wipe sampling. The extent of sampling and specific cleanliness requirements for each project will be established prior to remediation. Sampling requirements will be consistent with the level of contamination remediated.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management or other designated agency having jurisdiction over solid waste disposal and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to contain hazardous materials. The Contractor shall containerize and dispose of the following materials as hazardous waste at an EPA approved treatment, storage, and disposal facility:
 - 1. Dust from HEPA filters and from damp sweeping
 - 2. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 - 3. Disposable work clothes and respirator filters
 - 4. Contents of HEPA vacuums used on this project
 - 5. All used duct tape
- C. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
 - 1. Polyethylene sheeting used in abatement activities
- D. Contractor shall collect the wash water generated by the wash facilities or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
 - 1. 5 micron porosity in-line cartridge particulate filter followed by:
 - 2. Activated carbon filter in-line cartridge
- E. All hazardous waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 49 CFR 172 to identify the type of waste and the date the container was filled.
- F. The Contractor may not store containerized hazardous waste on the job site for in excess of 180 calendar days from the accumulation start date.
- G. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- H. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

3.18 REMOVAL OF HAZARDOUS MATERIALS

- A. Removal of fluorescent fixture components may require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.

- B. Removal of other materials identified during mold remediation work shall be accomplished in accordance with all applicable Federal and State regulations.

END OF SECTION 02 85 00

**EXHIBIT B-1
ASBESTOS**

Bestech								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
ASBESTOS REMOVAL								
AR-001	CLEAN-UP OF ACM DEBRIS BY HEPA VACUUMING		SF	\$0.20				
AR-002	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS (FULL CONTAINMENT - < 6" DIA)		LF	\$1.70				
AR-003	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - 6" - 12" DIA)		LF	\$2.60				
AR-004	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - >12" DIA)		LF	\$3.50				
AR-005	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - FIRST 25)		EA	\$27.00				
AR-006	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY BETWEEN 25-50)		EA	\$21.00				
AR-007	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY IN EXCESS OF 50)		EA	\$18.50				
AR-008	REMOVAL OF EQUIPMENT INSULATION		SF	\$3.75				
AR-009	REMOVAL OF HVAC DUCT INSULATION		SF	\$3.75				
AR-010	REMOVAL OF HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$2.75				
AR-011	REMOVAL OF RESILIENT FLOORING INCLUDING MASTIC		SF	\$1.00				
AR-012	REMOVAL OF RESILIENT FLOORING (NO MASTIC)		SF	\$0.57				
AR-013	REMOVAL OF SPRAYED ON FIREPROOFING		SF	\$2.25				
AR-014	REMOVAL OF PLASTER CEILING SYSTEM (INCLUDING BLACK IRON AND METAL LATH)		SF	\$2.60				
AR-015	REMOVAL OF ACOUSTIC OR METAL PAN CEILING SYSTEM (INCLUDING GRID)		SF	\$1.80				
AR-016	REMOVAL OF ACOUSTIC CEILING PANELS (CLEAN GRID FOR REUSE)		SF	\$1.45				
AR-017	REMOVAL OF ACOUSTIC PLASTER FINISH MATERIAL (SCRAPE)		SF	\$2.40				
AR-018	PATCH AND/OR SEAL DAMAGED INSULATION		SF	\$1.00				
AR-019	REMOVAL OF CONTAMINATED SOIL (2" DEPTH)		SF	\$1.50				
AR-020	REMOVAL OF TRANSITE MATERIAL		SF	\$0.90				
AR-021	REMOVAL OF ROOFING OR ROOF FLASHING MATERIAL		SF	\$1.30				
AR-022	REMOVAL OF UNDERGROUND PIPE OR PIPE INSULATION (INCLUDING HAND EXCAVATION)		LF	\$30.00				
AR-023	REMOVAL OF CARPET OVER RESILIENT FLOORING		SF	\$0.90				
AR-024	REMOVAL OF WALL BASE AND MASTIC		LF	\$0.90				
AR-025	REMOVAL OF DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$1.00				
AR-026	REMOVAL OF CMU WALL		SF	\$1.80				
AR-027	PREP WORK AREA		SF	\$0.97				
AR-028	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$1.20				
AR-029	SELECTIVE DEMOLITION TO ACCESS CONCEALED ACM		SF	\$1.10				
AR-030	REMOVAL OF FLOOR LEVELING MATERIAL		SF	\$0.75				

EXHIBIT B-1 ASBESTOS

Bestech								
MISCELLANEOUS ITEMS								
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$250.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$250.00				
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA	750				
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY	640				
MI-007	DISPOSAL OF ACM WASTE (INCLUDES TRANSPORTATION)	COST+10%	CY	60				
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY	300				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY	30				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	72				
MI-013	FIXED SCAFFOLDING	COST+10%	SF	7.5				
MI-014	EXCAVATION TO EXPOSE UNDERGROUND PIPE	COST+10%	CY	15				
MI-015	PROJECT NOTIFICATION AND FEES	COST+10%	EA	TBD				
MI-016	PROJECT BOND (3% OF CONTRACT)	COST+10%	EA	TBD				
REWORK ITEMS								
RW-001	REINSULATE PIPE 1" THICK FIBERGLAS ASJ		SF	\$2.50				
RW-002	REINSULATE PIPE 1 1/2" THICK FIBERGLAS ASJ		SF	\$3.30				
RW-003	REINSULATE PIPE 2" THICK FIBERGLAS ASJ		SF	\$4.15				
RW-004	REINSULATE PIPE FITTING 1" THICK FIBERGLAS ASJ		EA	\$4.00				
RW-005	REINSULATE PIPE FITTING 1 1/2" THICK FIBERGLAS ASJ		EA	\$5.00				
RW-006	REINSULATE PIPE FITTING 2" THICK FIBERGLAS ASJ		EA	\$6.00				
RW-007	REINSULATE MECHANICAL EQUIPMENT 3 PCF, 2" THICK		SF	\$3.00				
RW-008	REINSULATE HVAC DUCT SYSTEM (FLEXIBLE DUCT WRAP) 0.75 PCF, 1 1/2" THICK		SF	\$1.40				
RW-009	REINSULATE HVAC DUCT SYSTEM (RIGID BOARD) 3 PCF, 1 1/2" THICK		SF	\$2.70				
RW-010	REPLACE HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$8.75				
ESCALATION FACTORS								
EF-1	WORK SURFACES 10-20' HIGH	1.15						
EF-2	WORK SURFACES OVER 20' HIGH	1.30						
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)	1.30						
EF-4	EMERGENCY RESPONSE (<24 HOUR)	1.30						
EF-5	CONFINED SPACE WORK	1.15						
EF-6	REMOVAL OF MULTIPLE LAYERS OF RESILIENT FLOORING (EACH ADDITIONAL LAYER)	1.50						
EF-7	REMOVAL ON LIVE STEAM SYSTEM	1.25						
EF-8	EXTERIOR WORK	1.30						
			WORK ORDER TOTAL					

EXHIBIT B-2 LEAD

Bestech							
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	Unit Cost \$0.00			
	<u>PAINT REMOVAL</u>						
SP-001	REMOVE LOOSE PAINT FROM WALLS OR CEILINGS (WET SCRAPING OR BRUSHING)		SF	\$0.90			
SP-002	STRIP PAINT FROM FLAT SURFACES		SF	\$2.85			
SP-003	STRIP PAINT FROM COLUMNS AND STRUCTURAL FRAMING MEMBERS		SF	\$3.50			
SP-004	STRIP PAINT FROM STAIR TREADS, RISERS AND STRINGERS		SF	\$5.00			
SP-005	STRIP PAINT FROM TRIM		LF	\$2.75			
SP-006	STRIP PAINT FROM DOORS (DOOR OPENING SIZE)		SF	\$4.25			
SP-007	STRIP PAINT FROM WINDOW (WINDOW SIZE)		SF	\$6.75			
SP-008	STRIP PAINT FROM RADIATOR		SF	\$8.75			
SP-009	STRIP PAINT FROM HANDRAIL		LF	\$7.00			
SP-010	STRIP PAINT FROM PIPING		SF	\$6.00			
SP-011	CLEAN-UP OF MATERIALS CONTAINING LEAD (DIRT, BUILDING DEBRIS, ETC.)		CF	\$3.50			
SP-012	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$0.60			
SP-013	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$1.00			
SP-014	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$5.00			
	<u>COMPONENT REPLACEMENT</u>						
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.50			
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.25			
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.60			
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.40			
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$0.95			
CR-006	REMOVE RADIATOR		SF	\$0.75			
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$7.50			
	<u>MISCELLANEOUS ITEMS</u>						
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$250.00			
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$250.00			
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF	\$0.90			
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF	\$2.75			
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY	\$400.00			
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY	\$30.00			
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	\$72.00			

EXHIBIT B-2 LEAD

Bestech								
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF	\$0.50				
MI-012	ENCAPSULATION UTILIZING HEAVY BODIED REINFORCED COATING SYSTEM		SF	\$1.00				
MI-013	FIXED SCAFFOLDING	COST+10%	SF	7.5				
<u>REWORK ITEMS</u>								
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF	\$0.75				
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA	\$150.00				
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA	\$350.00				
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA	\$500.00				
RW-015	PAINT FLAT SURFACES (PRIMER + FINISH COAT)		SF	\$0.25				
RW-016	PAINT COLUMNS AND STRUCTURAL FRAMING MEMBERS (PRIMER + FINISH COAT)		SF	\$2.75				
RW-017	PAINT STAIR TREADS, RISERS AND STRINGERS (PRIMER + FINISH COAT)		SF	\$2.75				
RW-018	PAINT HANDRAIL (PRIMER + FINISH COAT)		LF	\$0.25				
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF	\$0.25				
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF	\$1.75				
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF	\$2.00				
RW-022	PAINT RADIATOR (PRIMER + FINISH COAT)		SF	\$2.90				
RW-023	PAINT PIPING (PRIMER + FINISH COAT)		LF	\$0.25				
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF	\$3.00				
RW-025	ASPHALT PAVING		SF	\$3.50				
<u>ESCALATION FACTORS</u>								
EF-1	WORK SURFACES 10-20' HIGH			1.15				
EF-2	WORK SURFACES OVER 20' HIGH			1.30				
EF-3	NON-REGULAR WORK HOURS (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30				
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30				
EF-5	CONFINED SPACE WORK			1.15				
EF-8	EXTERIOR WORK			1.30				
				WORK ORDER TOTAL				

EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS

Bestech								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
MOLD REMEDIATION								
IAQ-001	CLEANING AND HEPA VACUUMING OF CONTAMINATED COMPONENTS OR MATERIALS		SF	\$0.60				
IAQ-002	REMOVAL OF CONTAMINATED PIPE INSULATION		LF	\$0.60				
IAQ-003	REMOVAL OF CONTAMINATED BUILDING INSULATION		SF	\$0.60				
IAQ-004	REMOVAL OF CONTAMINATED HVAC DUCT OR EQUIPMENT INSULATION		SF	\$0.60				
IAQ-005	REMOVAL OF CONTAMINATED CARPET		SF	\$0.90				
IAQ-006	REMOVAL OF CONTAMINATED DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$0.90				
IAQ-007	REMOVAL OF CONTAMINATED PLASTER		SF	\$1.80				
IAQ-008	REMOVAL OF CONTAMINATED SUSPENDED CEILING PANELS		SF	\$0.60				
IAQ-009	PREP WORK AREA		SF	\$0.25				
IAQ-010	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$1.20				
IAQ-011	SELECTIVE DEMOLITION TO ACCESS CONTAMINATED COMPONENTS OR MATERIALS		SF	\$1.10				
OTHER HAZARDOUS MATERIALS ABATEMENT								
HM-001	REMOVE LOOSE PCB CONTAMINATED CAULK (WET SCRAPING OR BRUSHING)		LF	\$7.50				
HM-002	REMOVE PCB CONTAMINATED CAULK AND 6 INCHES OF BUILDING MATERIALS		LF	\$13.50				
HM-003	REMOVE PCB CONTAMINATED CAULK AND 12 INCHES OF BUILDING MATERIALS		LF	\$17.50				
HM-004	REMOVE INTACT PCB CONTAMINATED CAULK WITH NO REMOVAL OF BUILDING MATERIALS		LF	\$9.00				
HM-005	STRIP PAINT FROM FLAT SURFACES		SF	\$2.85				
HM-006	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$0.60				
HM-007	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$1.00				
HM-008	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$5.00				
COMPONENT REPLACEMENT								
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.50				
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.25				
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.60				
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.40				
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$0.95				
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$7.50				

**EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS**

Bestech									
MISCELLANEOUS ITEMS									
MI-001	MOBILIZATION (1 PER WORK AREA)		EA		\$250.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA		\$250.00				
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF		\$0.97				
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF		\$1.20				
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA		750				
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY		640				
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY		\$300.00				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY		\$30.00				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR		\$72.00				
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF		\$0.50				
MI-013	FIXED SCAFFOLDING	COST+10%	SF		7.5				
REWORK ITEMS									
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF		\$0.75				
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA		150				
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA		350				
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA		500				
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF		\$0.25				
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF		\$1.75				
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF		\$2.00				
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF		\$3.00				
ESCALATION FACTORS									
EF-1	WORK SURFACES 10-20' HIGH			1.15					
EF-2	WORK SURFACES OVER 20' HIGH			1.30					
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30					
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30					
EF-5	CONFINED SPACE WORK			1.15					
EF-8	EXTERIOR WORK			1.30					
					WORK ORDER TOTAL				

	Bestech		
<u>ITEM #</u>	<u>10PSX0238 EXHIBIT B-4 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES OTHER THAN THOSE OFFERED IN EXHIBITS B-1, B-2 and B-3</u>	<u>UNITS</u>	<u>UNIT COST \$0.00</u>
b4-1	Transport & dispose of 55 gallon drum of <50 PPM PCB waste	ea	\$400.00
B4-2	Transport & dispose of 55 gallon drum of >50 PPM PCB waste	ea	\$450

EXHIBIT C

SEEC FORM 11

NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION AND SOLICITATION BAN

This notice is provided under the authority of Connecticut General Statutes 9-612(g)(2), as amended by P.A. 07-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined below):

Campaign Contribution and Solicitation Ban

No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee;

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

Duty to Inform

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

Penalties for Violations

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—\$2000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of \$2000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or \$5000 in fines, or both.

Contract Consequences

Contributions made or solicited in violation of the above prohibitions may result, in the case of a state contractor, in the contract being voided.

Contributions made or solicited in violation of the above prohibitions, in the case of a prospective state contractor, shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State will not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information and the entire text of P.A 07-1 may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to “State Contractor Contribution Ban.”

Definitions:

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision

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RFP Contract – Exhibit C – SEEC Form 11 - NEW 1/09

exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan or a loan to an individual for other than commercial purposes.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

CONTRACT

10PSX0238

Between

THE STATE OF CONNECTICUT

Acting by its

DEPARTMENT OF ADMINISTRATIVE SERVICES

AND

HazPros Inc..

FOR

ASBESTOS, LEAD AND MOLD ABATEMENT SERVICES

December 17, 2010

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Contract # 10PSX0238

RFP Contract Rev. 7/09 – Prev. Rev. 6/09

This Contract (the “Contract”) is made as of the 17th day of December, in the year 2010 , by and between, HazPros, Inc. (the “Contractor,”) with a principal place of business at 125-A Brook St. West Hartford, CT 06110, acting by Randy Newbury, its Vice President and the State of Connecticut, Department of Administrative Services (“DAS”), with a principal place of business at 165 Capitol Ave, Hartford, Connecticut 06106-1659, acting by Paul Greco, its Contract Specialist, in accordance with Sections 4a-2 and 4a-51 of the Connecticut General Statutes.

Now therefore, in consideration of these presents, and for other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the Contractor and the State agree as follows:

1. Definitions. Unless otherwise indicated, the following terms shall have the following corresponding definitions:
 - (a) Cancellation: An end to the Contract effected pursuant to a right which the Contract creates due to a breach.
 - (b) Claims: All actions, suits, claims, demands, investigations and proceedings of any kind, open, pending or threatened, whether mature, unmatured, contingent, known or unknown, at law or in equity, in any forum.
 - (c) Client Agency: State of Connecticut, CT Department of Public Works, Using Agency Government Agency, Not for Profit Agency
 - (d) Contract: The agreement, as of its effective date, between the Proposer and the State for any or all Goods or Services at the Proposal price.
 - (e) Contractor: A person or entity who submits a Proposal and who executes a Contract.
 - (f) Contractor Parties: A Contractor’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.
 - (g) Day: All calendar days other than Saturdays, Sundays and days designated as national or State of Connecticut holidays upon which banks in Connecticut are closed.
 - (h) Expiration: An end to the Contract due to the completion in full of the mutual performances of the parties or due to the Contract’s term being completed.
 - (i) Force Majeure: Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has occurred, including, but not limited to, labor troubles unrelated to the Contractor, failure of or inadequate permanent power, unavoidable casualties, fire not caused by the Contractor, extraordinary weather conditions, disasters, riots, acts of God, insurrection or war.
 - (j) Goods: For purposes of the Contract, all things which are movable at the time that the Contract is effective and which include, without limiting this definition, supplies, materials and equipment, as specified in the Request for Proposals and set forth in Exhibit A.
 - (k) Goods or Services: Goods, Services or both, as specified in the Request for Proposals and set forth in Exhibit A.

Contract # **10PSX0238**

RFP Contract Rev. 7/09 – Prev. Rev. 6/09

- (l) Proposal: A Proposer’s submittal in response to a Request for Proposals.
 - (m) Proposer Parties: A Proposer’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Proposer is in privity of oral or written contract and the Proposer intends for such other person or entity to Perform under the Contract in any capacity.
 - (n) Records: All working papers and such other information and materials as may have been accumulated by the Contractor in performing the Contract, including but not limited to, documents, data, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.
 - (o) Request for Proposals: A State request inviting proposals for Goods or Services. This Contract shall be governed by the statutes, regulations and procedures of the State of Connecticut, Department of Administrative Services.
 - (p) Services: The performance of labor or work, as specified in the Request for Proposals and set forth in Exhibit A.
 - (q) State: The State of Connecticut, including DAS, the Client Agency and any office, department, board, council, commission, institution or other agency of the State.
 - (r) Termination: An end to the Contract effected pursuant to a right which the Contract creates, other than for a breach.
 - (s) Title: all ownership, title, licenses, rights and interest, including, but not limited to, perpetual use, of and to the Goods or Services.
2. Term of Contract; Contract Extension. The Contract will be in effect from February 1, 2011 through January 31, 2016. The parties may extend this Contract, prior to Termination, Expiration or Cancellation, one or more times for a combined total period not to exceed the complete length of the original term, but only in accordance with the section in this Contract concerning Contract Amendments.
 3. Description of Goods or Services. The Contractor shall perform as set forth in Exhibit A. For purposes of this Contract, to perform and the performance in Exhibit A is referred to as “Perform” and the “Performance.”
 4. Price Schedule, Payment Terms and Billing, and Price Adjustments.
 - (a) Price Schedule: Price Schedule under this Contract is set forth in Exhibit B.
 - (b) Payment Terms and Billing: Payment shall be made only after the Client Agency receives and accepts the Goods or Services and after it receives a properly completed invoice. Unless otherwise specified in the Contract, payment for all accepted Goods or Services shall be due within forty-five (45) days after acceptance of the Goods or Services, or thirty (30) days if the Contractor is a certified small contractor or minority business enterprise as defined in Conn. Gen. Stat. § 4a-60g. The Contractor shall submit an invoice to the Client Agency for the Performance. The invoice shall include detailed information for Goods or Services, delivered and performed, as applicable, and accepted. Any late payment charges shall be calculated in accordance with the Connecticut General Statutes.

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- (c) If applicable to and during the term of this Contract, the Price Schedule will be adjusted to reflect any increase in the minimum wage rate that may occur, as mandated by state law. The Price Schedule will not be adjusted until the Contractor provides documentation, in the form of certified payroll or other documentation acceptable to the State, substantiating the increase in minimum wage rate.
- (d) Price Adjustments: Prices for the Goods or Services listed in Exhibit B shall remain unchanged for twelve (12) months following the effective date of the Contract. The Contractor shall have the right to request a price adjustment only during the thirty (30) days immediately preceding the annual anniversary dates of the effective date of the Contract during the term of the Contract. During this thirty (30) day period, the Contractor may submit a request in writing to DAS for a price adjustment that is consistent with and relative to price changes originating with and compelled by manufacturer and/or market trends and which changes are outside of the Contractor's control. The Contractor must fully document its request, attaching to the request, without limitation, such manufacturer and market data, as support the requested adjustment. DAS may, in its sole discretion, approve or disapprove the requested adjustment, in whole or in part. Any approved adjustment shall be final and shall remain unchanged until the next annual anniversary date of the effective date of the Contract.

The Contractor shall submit all requests in accordance with Section #35. Notice. A request made to the Client Agency shall not be valid and the parties shall treat it as if the Contractor had not made the request at all. A request made to the Client Agency shall not be considered timely and shall not toll or extend the running of the thirty (30) days. The right of the Contractor to request a particular price adjustment shall lapse upon the expiration of the applicable thirty (30) days. If the Contractor fails to make a timely request, then the price shall remain unchanged from the previous year and shall continue through the next succeeding twelve (12) months and until the second annual anniversary of the effective date of the Contract, If approved, price adjustments shall become effective ten (10) days after the date of the approval. The Contractor shall honor any purchase orders issued prior to the effective date of the approval at the price in effect at the time of the issuance of the purchase order.

5. Rejected Items; Abandonment.

- (a) The Contractor may deliver, cause to be delivered, or, in any other way, bring or cause to be brought, to any State premises or other destination, Goods, as samples or otherwise, and other supplies, materials, equipment or other tangible personal property. The State may, by written notice and in accordance with the terms and conditions of the Contract, direct the Contractor to remove any or all such Goods (“the “Rejected Goods”) and any or all other supplies, materials, equipment or other tangible personal property (collectively, the “Contractor Property”) from and out of State premises and any other location which the State manages, leases or controls. The Contractor shall remove the Rejected Goods and the Contractor Property in accordance with the terms and conditions of the written notice. Failure to remove the Rejected Goods or the Contractor Property in accordance with the terms and conditions of the written notice shall mean, for itself and all Contractor Parties and Proposer Parties, that:
 - (1) they have voluntarily, intentionally, unconditionally, unequivocally and absolutely abandoned and left unclaimed the Rejected Goods and Contractor Property and relinquished all ownership, title, licenses, rights, possession and interest of, in and to (collectively, “Title”) the Rejected Goods and Contractor Property with the specific and express intent of (A) terminating all of their Title to the Rejected Goods and Contractor Property, (B) vesting Title to the Rejected Goods and Contractor Property in the State of Connecticut and (C) not ever reclaiming Title or any future rights of any type in and to the Rejected Goods and Contractor Property;

- (2) there is no ignorance, inadvertence or unawareness to mitigate against the intent to abandon the Rejected Goods or Contractor Property;
 - (3) they vest authority, without any further act required on their part or the State's part, in the Client Agency and the State to use or dispose of the Rejected Goods and Contractor Property, in the State's sole discretion, as if the Rejected Goods and Contractor Property were the State's own property and in accordance with law, without incurring any liability or obligation to the Contractor or any other party;
 - (4) if the State incurs any costs or expenses in connection with disposing of the Rejected Goods and Contractor Property, including, but not limited to, advertising, moving or storing the Rejected Goods and Contractor Property, auction and other activities, the State shall invoice the Contractor for all such cost and expenses and the Contractor shall reimburse the State no later than thirty (30) days after the date of invoice; and
 - (5) they do remise, release and forever discharge the State and its employees, departments, commissions, boards, bureaus, agencies, instrumentalities or political subdivisions and their respective successors, heirs, executors and assigns (collectively, the "State and Its Agents") of and from all Claims which they and their respective successors or assigns, jointly or severally, ever had, now have or will have against the State and Its Agents arising from the use or disposition of the Rejected Goods and Contractor Property.
- (b) The Contractor shall secure from each Contractor Party or Proposer Party, as appropriate, such document or instrument as necessary or appropriate as will vest in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to give full effect to all of the terms and conditions of this section. The Contractor shall provide, no later than fifteen (15) days after receiving a request from the State, such information as the State may require to evidence, in the State's sole determination, compliance with this section.
6. **Order and Delivery.** The Contract shall bind the Contractor to furnish and deliver the Goods or Services in accordance with Exhibit A and at the prices set forth in Exhibit B. Subject to the sections in this Contract concerning Force Majeure, Termination, Cancellation Expiration and Open Market Purchases, the Contract shall bind the Client Agency to order the Goods or Services from the Contractor, and to pay for the accepted Goods or Services in accordance with Exhibit B.
 7. **Contract Amendments.** No amendment to or modification or other alteration of the Contract, including extensions, shall be valid or binding upon the parties unless made in writing, signed by the parties and, if applicable, approved by the Connecticut Attorney General.
 8. **Assignment.** The Contractor shall not assign any of its rights or obligations under the Contract, voluntarily or otherwise, in any manner without the prior written consent of DAS. DAS may void any purported assignment in violation of this section and declare the Contractor in breach of Contract. Any Cancellation by DAS for a breach is without prejudice to DAS's or the State's rights or possible Claims.
 9. **Termination, Cancellation and Expiration.**
 - (a) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may Terminate the Contract whenever DAS makes a written determination that such Termination is in the best interests of the State. DAS shall notify the Contractor in writing of Termination pursuant to this section, which notice shall specify the effective date of Termination and the extent to which the Contractor must complete Performance under the

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Contract prior to such date. The Contractor is not entitled to receive and the State is not obligated to tender to the Contractor any payments or reimbursements for anticipated or lost profits.

- (b) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may, after making a written determination that the Contractor has breached the Contract, Cancel the Contract in accordance with the provisions in the Breach section of this Contract.
- (c) DAS shall send the notice of Termination or Cancellation via certified mail, return receipt requested, to the Contractor at the most current address which the Contractor has furnished to DAS for purposes of correspondence, or by hand delivery. Upon receiving such notice from DAS, the Contractor shall immediately discontinue all services affected in accordance with the notice, undertake all commercially reasonable efforts to mitigate any losses or damages, and deliver to the Client Agency all Records. The Records are deemed to be the property of the Client Agency and the Contractor shall deliver them to the Client Agency no later than thirty (30) days after the Termination, Cancellation or Expiration of the Contract or fifteen (15) days after the Contractor receives a written request from DAS for the Records. The Contractor shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, ASCII or .TXT.
- (d) Upon receipt of a written notice of Termination or Cancellation from DAS, the Contractor shall cease operations as directed by DAS in the notice, and take all actions that are necessary or appropriate, or that DAS may reasonably direct, for the protection and preservation of the Goods and any other property. Except for any work which DAS directs the Contractor to Perform in the notice prior to the effective date of Termination or Cancellation, and except as otherwise provided in the notice, the Contractor shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments.
- (e) To the extent that the Client Agency has issued a purchase order prior to the notice of Termination and the Contractor has begun Performance against that purchase order in good faith, the Client Agency shall, within forty-five (45) days of having received an invoice from the Contractor for such Performance, pay or reimburse the Contractor for its Performance rendered and accepted by the Client Agency in accordance with Exhibit A. In addition, the Client Agency shall also pay or reimburse the Contractor for all actual and reasonable costs incurred after Termination in completing those portions of the Performance which the notice required the Contractor to complete. Upon and as requested by the Client Agency or DAS and after consent of the Contractor's subcontractors, if any, and if their consent is required, the Contractor shall (1) assign to the Client Agency, or any replacement contractor which the Client Agency or DAS designates, all subcontracts, purchase orders and other commitments, (2) deliver to the Client Agency all Records and other information pertaining to its Performance, and (3) remove from State premises, whether leased or owned, all such equipment, waste material and rubbish related to its Performance, all as the Client Agency or DAS may request.
- (f) For breach or violation of any of the provisions in the section concerning Representations and Warranties, DAS may Cancel the Contract in accordance with its terms and revoke any consents to assignments given as if the assignments had never been requested or consented to, without liability to the Contractor or Contractor Parties or any third party.
- (g) Upon Termination, Cancellation or Expiration of the Contract, all rights and obligations shall be null and void, so that no party shall have any further rights or obligations to any other party, except with respect to the sections which survive Termination, Cancellation or Expiration of the Contract. All representations, warranties, agreements and rights of the parties under the Contract shall survive such Termination, Cancellation or Expiration to the

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extent not otherwise limited in the Contract and without each one of them having to be specifically mentioned in the Contract.

(h) Termination or Cancellation of the Contract pursuant to this section shall not be deemed to be a breach of contract by DAS.

10. Cost Modifications. The parties may agree to a reduction in the cost of the Contract at any time during which the Contract is in effect. Without intending to impose a limitation on the nature of the reduction, the reduction may be to hourly, staffing or unit costs, the total cost of the Contract or the reduction may take such other form as the State deems to be necessary or appropriate.

11. Breach. If either party breaches the Contract in any respect, the non-breaching party shall provide written notice of such breach to the breaching party and afford the breaching party an opportunity to cure the breach within ten (10) days from the date that the breaching party receives such notice. Any other time provided for in the notice shall trump such ten (10) days. Such right to cure period shall be extended if the non-breaching party is satisfied that the breaching party is making a good faith effort to cure but the nature of the breach is such that it cannot be cured within the right to cure period. The notice may include an effective Contract Cancellation date if the breach is not cured by the stated date and, unless otherwise modified by the non-breaching party in writing prior to the Cancellation date, no further action shall be required of any party to effect the Cancellation as of the stated date. If the notice does not set forth an effective Contract Cancellation date, then the non-breaching party may Cancel the Contract by giving the breaching party no less than twenty four (24) hours' prior written notice. If DAS believes that the Contractor has not performed according to the Contract, the Client Agency may withhold payment in whole or in part pending resolution of the Performance issue, provided that DAS notifies the Contractor in writing prior to the date that the payment would have been due in accordance with Exhibit B.

12. Waiver.

(a) No waiver of any breach of the Contract shall be interpreted or deemed to be a waiver of any other or subsequent breach. All remedies afforded in the Contract shall be taken and construed as cumulative, that is, in addition to every other remedy provided in the Contract or at law or in equity.

(b) A party's failure to insist on strict performance of any provision of the Contract shall only be deemed to be a waiver of rights and remedies concerning that specific instance of Performance and shall not be deemed to be a waiver of any subsequent rights, remedies or breach.

13. Open Market Purchases. Except to the extent that the Contractor is performing within a right to cure period, failure of the Contractor to Perform within the time specified in the Contract, or failure to replace rejected or substandard Goods or fulfill unperformed Services when so requested and as the Contract provides or allows, constitutes a breach of the Contract and as a remedy for such breach, such failure shall constitute authority for DAS, if it deems it to be necessary or appropriate in its sole discretion, to Cancel the Contract and/or to purchase on the open market, Goods or Services to replace those which have been rejected, not delivered, or not performed. The Client Agency shall invoice the Contractor for all such purchases to the extent that they exceed the costs and expenses in Exhibit B and the Contractor shall pay the Client Agency's invoice immediately after receiving the invoice. If DAS does not Cancel the Contract, the Client Agency will deduct such open market purchases from the Contract quantities. However, if the Client Agency deems it to be in the best interest of the State, the Client Agency may accept and use the Goods or Services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Client Agency.

14. Purchase Orders.

- (a) The Contract itself is not an authorization for the Contractor to ship Goods or begin Performance in any way. The Contractor may begin Performance only after it has received a duly issued purchase order against the Contract for Performance.
- (b) The Client Agency shall issue a purchase order against the Contract directly to the Contractor and to no other party.
- (c) All purchase orders shall be in written or electronic form, bear the Contract number (if any) and comply with all other State and Client Agency requirements, particularly the Client Agency's requirements concerning procurement. Purchase orders issued in compliance with such requirements shall be deemed to be duly issued.
- (d) A Contractor making delivery without a duly issued purchase order in accordance with this section does so at the Contractor's own risk.
- (e) The Client Agency may, in its sole discretion, deliver to the Contractor any or all duly issued purchase orders via electronic means only, such that the Client Agency shall not have any additional obligation to deliver to the Contractor a "hard copy" of the purchase order or a copy bearing any hand-written signature or other "original" marking.

15. Indemnification.

- (a) The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or Contractor Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Proposal or any Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance of the Contract.
- (b) The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any Contractor Parties. The State shall give the Contractor reasonable notice of any such Claims.
- (c) The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the Claims.
- (d) The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall name the State as an additional insured on the policy and shall provide a Certificate of Insurance to DAS, except that the Contractor shall not provide a copy to DAS if the Client Agency is the State Department of Transportation, prior to the effective date of the Contract. The

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Contractor shall not begin Performance until the delivery of the Certificate of Insurance to DAS. Upon request of the Client Agency, the Contractor shall provide a Certificate of Insurance to the Client Agency.

- (e) The rights provided in this section for the benefit of the State shall encompass the recovery of attorneys' and other professionals' fees expended in pursuing a Claim against a third party.
- (f) This section shall survive the Termination, Cancellation or Expiration of the Contract, and shall not be limited by reason of any insurance coverage.

16. Forum and Choice of Law. The Contract shall be deemed to have been made in the City of Hartford, State of Connecticut. Both Parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

17. Contractor Guaranties. Contractor shall:

- (a) Perform fully under the Contract;
- (b) Guarantee the Goods or Services against defective material or workmanship and to repair any damage or marring occasioned in transit or, at the Client Agency's option, replace them;
- (c) Furnish adequate protection from damage for all work and to repair damage of any kind, for which its workers are responsible, to the premises, Goods, the Contractor's work or that of Contractor Parties;
- (d) With respect to the provision of Services, pay for all permits, licenses and fees and give all required or appropriate notices;
- (e) Adhere to all Contractual provisions ensuring the confidentiality of Records that the Contractor has access to and are exempt from disclosure under the State's Freedom of Information Act or other applicable law; and
- (f) Neither disclaim, exclude nor modify the implied warranties of fitness for a particular purpose or of merchantability.

18. Implied Warranties. DAS does not disclaim, exclude or modify the implied warranty of fitness for a particular purpose or the warranty of merchantability.

19. Goods, Standards and Appurtenances. Any Goods delivered must be standard new Goods, latest model, except as otherwise specifically stated in the Contract. Remanufactured, refurbished or reconditioned equipment may be accepted but only to the extent allowed under the Contract. Where the Contract does not specifically list or describe any part or nominal appurtenances of equipment for the Goods, it shall be understood that the Contractor shall deliver such parts and appurtenances as are usually provided with the manufacturer's stock model.

20. Delivery.

- (a) Delivery shall be made as ordered and in accordance with the Contract. Unless otherwise specified in the Contract, delivery shall be to a loading dock or receiving platform. The Contractor or Contractor's shipping designee shall be responsible for removal of Goods from the carrier and placement on the Client Agency loading dock or receiving platform. The receiving personnel of the Client Agency are not required to assist in this process. The decision of DAS as to reasonable compliance with delivery terms shall be final and binding. The burden of proof of proper receipt of the order shall rest with the Contractor.
- (b) In order for the time of delivery to be extended, the Client Agency must first approve a request for extension from the time specified in the Contract, such extension applying only to the particular item or shipment.
- (c) Goods shall be securely and properly packed for shipment, according to accepted standard commercial practice, without extra charge for packing cases, baling or sacks. The containers shall remain the property of the Client Agency unless otherwise stated in the Proposal.
- (d) All risk of loss and damage to the Goods transfers to the Client Agency upon Title vesting in the Client Agency.

21. Goods Inspection. The Client Agency shall determine the manner and prescribe the inspection of all Goods and the tests of all samples submitted to determine whether they comply with all of the specifications in the Contract. If any Goods fail in any way to meet the specifications in the Contract, the Client Agency may, in its sole discretion, either reject it and owe nothing or accept it and pay for it on an adjusted price basis, depending on the degree to which the Goods meet the specifications. Any decision pertaining to any such failure or rejection shall be final and binding.

22. Setoff. In addition to all other remedies that DAS may have, the State, in its sole discretion, may setoff (1) any costs or expenses that the State incurs resulting from the Contractor's unexcused nonperformance under the Contract and under any other agreement or arrangement that the Contractor has with the State and (2) any other amounts that are due or may become due from the State to the Contractor, against amounts otherwise due or that may become due to the Contractor under the Contract, or under any other agreement or arrangement that the Contractor has with the State. The State's right of setoff shall not be deemed to be the State's exclusive remedy for the Contractor's or Contractor Parties' breach of the Contract, all of which shall survive any setoffs by the State.

23. Force Majeure. The State and the Contractor shall not be excused from their obligation to Perform in accordance with the Contract except in the case of Force Majeure events and as otherwise provided for in the Contract. In the case of any such exception, the nonperforming party shall give immediate written notice to the other, explaining the cause and probable duration of any such nonperformance.

24. Advertising. The Contractor shall not refer to sales to the State for advertising or promotional purposes, including, but not limited to, posting any material or data on the Internet, without DAS's prior written approval.

25. Americans With Disabilities Act. The Contractor shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Contract. DAS may Cancel the Contract if the Contractor fails to comply with the Act.

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26. Representations and Warranties. The Contractor, and the Proposer, as appropriate, represent and warrant to DAS for itself, Contractor Parties and Proposer Parties, as appropriate, that:

- (a) if they are entities, they are duly and validly existing under the laws of their respective states of organization and authorized to conduct business in the State of Connecticut in the manner contemplated by the Contract. Further, as appropriate, they have taken all necessary action to authorize the execution, delivery and Performance of the Proposal and the Contract and have the power and authority to execute, deliver and Perform their obligations under the Contract;
- (b) they will comply with all applicable State and Federal laws and municipal ordinances in satisfying their obligations to the State under and pursuant to the Contract, including, but not limited to (1) Connecticut General Statutes Title 1, Chapter 10, concerning the State's Codes of Ethics and (2) Title 4a concerning State purchasing, including, but not limited to 22a-194a concerning the use of polystyrene foam;
- (c) the execution, delivery and Performance of the Contract will not violate, be in conflict with, result in a breach of or constitute (with or without due notice and/or lapse of time) a default under any of the following, as applicable: (1) any provision of law; (2) any order of any court or the State; or (3) any indenture, agreement, document or other instrument to which it is a party or by which it may be bound;
- (d) they are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any governmental entity;
- (e) as applicable, they have not, within the three years preceding the Contract, in any of their current or former jobs, been convicted of, or had a civil judgment rendered against them or against any person who would Perform under the Contract, for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a transaction or contract with any governmental entity. This includes, but is not limited to, violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (f) they are not presently indicted for or otherwise criminally or civilly charged by any governmental entity with commission of any of the offenses listed above;
- (g) they have not within the three years preceding the Contract had one or more contracts with any governmental entity Cancelled;
- (h) they have not employed or retained any entity or person, other than a bona fide employee working solely for them, to solicit or secure the Contract and that they have not paid or agreed to pay any entity or person, other than a bona fide employee working solely for them, any fee, commission, percentage, brokerage fee, gifts, or any other consideration contingent upon or resulting from the award or making of the Contract or any assignments made in accordance with the terms of the Contract;
- (i) to the best of their knowledge, there are no Claims involving the Proposer, Proposer Parties, Contractor or Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract;
- (j) they shall disclose, to the best of their knowledge, to DAS in writing any Claims involving them that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully

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under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. For purposes of the Contractor's obligation to disclose any Claims to DAS, the ten (10) Days in the section of this Contract concerning Disclosure of Contractor Parties Litigation shall run consecutively with the ten (10) Days provided for in this representation and warranty;

- (k) their participation in the Request for Proposals process is not a conflict of interest or a breach of ethics under the provisions of Title 1, Chapter 10 of the Connecticut General Statutes concerning the State's Code of Ethics;
- (l) the Proposal was not made in connection or concert with any other person, entity or Proposer, including any affiliate (as defined in the Tangible Personal Property section of this Contract) of the Proposer, submitting a Proposal for the same Goods or Services, and is in all respects fair and without collusion or fraud;
- (m) they are able to Perform under the Contract using their own resources or the resources of a party who is not a Proposer;
- (n) the Contractor shall obtain in a written contract all of the representations and warranties in this section from any Contractor Parties and to require that provision to be included in any contracts and purchase orders with Contractor Parties;
- (o) they have paid all applicable workers' compensation second injury fund assessments concerning all previous work done in Connecticut;
- (p) they have a record of compliance with Occupational Health and Safety Administration regulations without any unabated, willful or serious violations;
- (q) they owe no unemployment compensation contributions;
- (r) they are not delinquent in the payment of any taxes owed, or, that they have filed a sales tax security bond, and they have, if and as applicable, filed for motor carrier road tax stickers and have paid all outstanding road taxes;
- (s) all of their vehicles have current registrations and, unless such vehicles are no longer in service, they shall not allow any such registrations to lapse;
- (t) each Contractor Party has vested in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to ensure full compliance with and Performance in accordance with all of the terms and conditions of the Contract and that all appropriate parties shall also provide to DAS, no later than fifteen (15) days after receiving a request from DAS, such information as DAS may require to evidence, in DAS's sole determination, compliance with this section;
- (u) except to the extent modified or abrogated in the Contract, all Title shall pass to the Client Agency upon complete installation, testing and acceptance of the Goods or Services and payment by the Client Agency;
- (v) if either party Terminates or Cancels the Contract, for any reason, they shall relinquish to the Client Agency all Title to the Goods delivered, accepted and paid for (except to the extent any invoiced amount is disputed) by the Client Agency;
- (w) with regard to third party products provided with the Goods, they shall transfer all licenses which they are permitted to transfer in accordance with the applicable third party license;

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- (x) they shall not copyright, register, distribute or claim any rights in or to the Goods after the effective date of the Contract without DAS's prior written consent;
- (y) they either own or have the authority to use all Title of and to the Goods, and that such Title is not the subject of any encumbrances, liens or claims of ownership by any third party;
- (z) the Goods do not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (aa) the Client Agency's use of any Goods shall not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (bb) if they procure any Goods, they shall sub-license such Goods and that the Client Agency shall be afforded the full benefits of any manufacturer or subcontractor licenses for the use of the Goods; and
- (cc) they shall assign or otherwise transfer to the Client Agency, or afford the Client Agency the full benefits of any manufacturer's warranty for the Goods, to the extent that such warranties are assignable or otherwise transferable to the Client Agency.

27. Representations and Warranties Concerning Motor Vehicles. If in the course of Performance or in any other way related to the Contract the Contractor at any time uses or operates "motor vehicles," as that term is defined by Conn. Gen. Stat. §14-1(53) (including, but not limited to such services as snow plowing, sanding, hauling or delivery of materials, freight or merchandise, or the transportation of passengers), the Contractor, and the Proposer, as appropriate, represent and warrant for itself, the Contractor Parties and Proposer Parties, as appropriate, that:

- (a) It is the owner of record or lessee of record of each such motor vehicle used in the Performance of the Contract, and each such motor vehicle is duly registered with the Connecticut Department of Motor Vehicles ("ConnDMV") in accordance with the provisions of Chapter 246 of the Connecticut General Statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV, for any reason or cause. If such motor vehicle is not registered with ConnDMV, then it shall be duly registered with another state or commonwealth in accordance with such other state's or commonwealth's applicable statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by such other state or commonwealth for any reason or cause.
- (b) Each such motor vehicle shall be fully insured in accordance with the provisions of Sections 14-12b, 14-112 and 38a-371 of the Connecticut General Statutes, as amended, in the amounts required by the said sections or in such higher amounts as have been specified by ConnDMV as a condition for the award of the Contract, or in accordance with all substantially similar provisions imposed by the law of the jurisdiction where the motor vehicle is registered.
- (c) Each Contractor Party who uses or operates a motor vehicle at any time in the Performance of the Contract shall have and maintain a motor vehicle operator's license or commercial driver's license of the appropriate class for the motor vehicle being used or operated. Each such license shall bear the endorsement or endorsements required by the provisions of Section 14-36a of the Connecticut General Statutes, as amended, to operate such motor vehicle, or required by substantially similar provisions imposed by the law of another jurisdiction in which the operator is licensed to operate such motor vehicle. The license shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV or such other jurisdiction for any reason or cause.

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- (d) Each motor vehicle shall be in full compliance with all of the terms and conditions of all provisions of the Connecticut General Statutes and regulations, or those of the jurisdiction where the motor vehicle is registered, pertaining to the mechanical condition, equipment, marking and operation of motor vehicles of such type, class and weight, including, but not limited to, requirements for motor vehicles having a gross vehicle weight rating of 18,000 pounds or more or motor vehicles otherwise described by the provisions of Conn. Gen. Stat. § 14-163c(a) and all applicable provisions of the Federal Motor Carrier Safety Regulations, as set forth in Title 49, Parts 382 to 399, inclusive, of the Code of Federal Regulations.
28. Disclosure of Contractor Parties Litigation. The Contractor shall require that all Contractor Parties, as appropriate, disclose to the Contractor, to the best of their knowledge, any Claims involving the Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. Disclosure shall be in writing.
29. Entirety of Contract. The Contract is the entire agreement between the parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the parties, whether written or oral. The Contract has been entered into after full investigation, neither party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Contract.
30. Exhibits. All exhibits referred to in and attached to this Contract are incorporated in this Contract by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.
31. Executive Orders. The Contract is subject to the provisions of Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms, Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17th, 2006, concerning procurement of cleaning products and services, Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.
32. Non-discrimination. References in this section to "contract" shall mean this Contract and references to "contractor" shall mean the Contractor.
- (a) The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes:
- (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut. The contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it

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- is shown by such contractor that such disability prevents performance of the work involved;
- (2) the contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;
 - (3) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
 - (4) the contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f;
 - (5) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56.
- (b) If the contract is a public works contract, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.
- (c) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons:
- (1) Who are active in the daily affairs of the enterprise,
 - (2) who have the power to direct the management and policies of the enterprise and
 - (3) who are members of a minority, as such term is defined in subsection (a) of section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.
- (d) Determination of the contractor's good faith efforts shall include but shall not be limited to the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (e) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.
- (f) The contractor shall include the provisions of sections (a) and (b) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted

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by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(g) The following subsections are set forth here as required by section 4a-60a of the Connecticut General Statutes:

(1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

(2) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(3) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56;

(4) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor which relate to the provisions of this section and section 46a-56.

(h) The contractor shall include the provisions of section (g) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(i) For the purposes of this entire Non-Discrimination section, "contract" includes any extension or modification of the contract, "contractor" includes any successors or assigns of the contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders. For the purposes of this section, "contract" does not include a contract where each contractor is

1. a political subdivision of the state, including, but not limited to, a municipality,

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2. a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120,
 3. any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267,
 4. the federal government,
 5. a foreign government, or
 6. an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).
33. Tangible Personal Property. The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:
- (a) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
 - (b) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
 - (c) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
 - (d) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
 - (e) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of the Act.

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34. **Whistleblowing.** This Agreement is subject to the provisions of §4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Agreement. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.
35. **Notice.** All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Contract (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is placed in the U.S. mail, first class and postage pre-paid, return receipt requested or placed with a recognized, overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

If to DAS:

State of Connecticut, Department of Administrative Services
165 Capitol Ave, 5th Floor South
Hartford, CT 06106-1659
Attention: Paul Greco

If to the Contractor:

HazPros, Inc.
125-A Brook St.
West Hartford, CT 06110
Attn. Randy Newbury

36. **Insurance.** Before commencing Performance, the Contractor shall obtain and maintain at its own cost and expense for the duration of the Contract, the following insurance as described in (a) through (h) below. Contractor shall assume any and all deductibles in the described insurance policies. The Contractor's insurers shall have no right of recovery or subrogation against the State and the described Contractor's insurance shall be primary coverage. Any failure to comply with the claim reporting provisions of the policy shall not affect coverage provided to the State.

(a) Reserved

- (b) Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. Coverage shall include, Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the

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general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit.

- (c) **Automobile Liability:** \$1,000,000 combined single limit per accident for bodily injury. Coverage extends to owned, hired and non-owned automobiles. If the vendor/contractor does not own an automobile, but one is used in the execution of the contract, then only hired and non-owned coverage is required. If a vehicle is not used in the execution of the contract then automobile coverage is not required.
- (d) **Workers' Compensation and Employers Liability:** Statutory coverage in compliance with the Compensation laws of the State of Connecticut. Coverage shall include Employer's Liability with minimum limits of \$100,000 each accident, \$500,000 Disease – Policy limit, \$100,000 each employee.
- (e) Reserved
- (f) **Umbrella Liability:** Excess/umbrella liability insurance may be included to meet minimum requirements. Umbrella coverage must indicate the existing underlying insurance coverage.
- (g) **Claims Made:** Not acceptable with the exception of Professional Liability when specified.
- (h) Reserved
- 37. **Headings.** The headings given to the sections in the Contract are inserted only for convenience and are in no way to be construed as part of the Contract or as a limitation of the scope of the particular section to which the heading refers.
- 38. **Number and Gender.** Whenever the context so requires, the plural or singular shall include each other and the use of any gender shall include all genders.
- 39. **Parties.** To the extent that any Contractor Party or Proposer Party is to participate or Perform in any way, directly or indirectly in connection with the Proposal or the Contract, any reference in the Request for Proposals and the Contract to "Contractor" or "Proposer" shall also be deemed to include "Contractor Parties" or "Proposer Parties," respectively, as if such reference had originally specifically included "Contractor Parties" or "Proposer Parties," since it is the parties' intent for the terms "Contractor Parties" and "Proposer Parties" to be vested with the same respective rights and obligations as the terms "Contractor" and "Proposer."
- 40. **Contractor Changes.** The Contractor shall notify DAS in writing no later than ten (10) Days from the effective date of any change in:
 - a) its certificate of incorporation or other organizational document;
 - b) more than a controlling interest in the ownership of the Contractor; or
 - c) the individual(s) in charge of the Performance.

This change shall not relieve the Contractor of any responsibility for the accuracy and completeness of the Performance. DAS, after receiving written notice by the Contractor of any such change, may require such agreements, releases and other instruments evidencing, to DAS's satisfaction, that any individuals retiring or otherwise separating from the Contractor have been compensated in full or that provision has been made for compensation in full, for all work performed under terms of the Contract. The Contractor shall deliver such documents to DAS in accordance with the terms of DAS's written request. DAS may also require, and the Contractor shall deliver, a financial statement showing that solvency of the

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Contractor is maintained. The death of any Contractor Party, as applicable, shall not release the Contractor from the obligation to Perform under the Contract; the surviving Contractor Parties, as appropriate, must continue to Perform under the Contract until Performance is fully completed.

41. Further Assurances. The parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other party which are not inconsistent with the provisions of this Contract and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Contract, in order to give full effect to the Contract and to carry out the intent of the Contract.
42. Audit and Inspection of Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents. Requests for any audit or inspection shall be in writing, at least ten (10) Days prior to the requested date. All audits and inspections shall be at the State's expense. The State may request an audit or inspection at any time during the Contract term and for three (3) years from Termination, Cancellation or Expiration of the Contract. The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.
43. Background Checks. The State may require that the Contractor and Contractor Parties undergo criminal background checks as provided for in the State of Connecticut Department of Public Safety Administration and Operations Manual or such other State document as governs procedures for background checks. The Contractor and Contractor Parties shall cooperate fully as necessary or reasonably requested with the State and its agents in connection with such background checks.
44. Continued Performance. The Contractor and Contractor Parties shall continue to Perform their obligations under the Contract while any dispute concerning the Contract is being resolved.
45. Working and Labor Synergies. The Contractor shall be responsible for maintaining a tranquil working relationship between the Contractor work force, the Contractor Parties and their work force, State employees, and any other contractors present at the work site. The Contractor shall quickly resolve all labor disputes which result from the Contractor's or Contractor Parties' presence at the work site, or other action under their control. Labor disputes shall not be deemed to be sufficient cause to allow the Contractor to make any claim for additional compensation for cost, expenses or any other loss or damage, nor shall those disputes be deemed to be sufficient reason to relieve the Contractor from any of its obligations under the Contract.
46. Contractor Responsibility.
 - (a) The Contractor shall be responsible for the entire Performance under the Contract regardless of whether the Contractor itself performs. The Contractor shall be the sole point of contact concerning the management of the Contract, including Performance and payment issues. The Contractor is solely and completely responsible for adherence by the Contractor Parties to all applicable provisions of the Contract.
 - (b) The Contractor shall exercise all reasonable care to avoid damage to the State's property or to property being made ready for the State's use, and to all property adjacent to any work site. The Contractor shall promptly report any damage, regardless of cause, to the State.

47. Severability. If any term or provision of the Contract or its application to any person, entity or circumstance shall, to any extent, be held to be invalid or unenforceable, the remainder of the Contract or the application of such term or provision shall not be affected as to persons, entities or circumstances other than those as to whom or to which it is held to be invalid or unenforceable. Each remaining term and provision of the Contract shall be valid and enforced to the fullest extent possible by law.
48. Confidential Information. The State will afford due regard to the Proposer's and Contractor's request for the protection of proprietary or confidential information which the State receives. However, all materials associated with the Proposal and the Contract are subject to the terms of the Connecticut Freedom of Information Act ("FOIA") and all corresponding rules, regulations and interpretations. In making such a request, the Proposer or Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the vendor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Proposer or Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract, especially including the Proposal, the Records and the specifications, conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Proposer or Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking said documentation as CONFIDENTIAL, DAS will endeavor to keep said information confidential to the extent permitted by law. DAS, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. The Contractor shall have the burden of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall DAS or the State have any liability for the disclosure of any documents or information in its possession which the State or DAS believes are required to be disclosed pursuant to the FOIA or other requirements of law.
49. Interpretation. The Contract contains numerous references to statutes and regulations. For purposes of interpretation, conflict resolution and otherwise, the content of those statutes and regulations shall govern over the content of the reference in the Contract to those statutes and regulations.
50. Cross-Default.
- (a) If the Contractor or Contractor Parties breach, default or in any way fail to Perform satisfactorily under the Contract, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat any such event as a breach, default or failure to perform under any or all other agreements or arrangements ("Other Agreements") that the Contractor or Contractor Parties have with DAS. Accordingly, DAS may then exercise at its sole option any and all of its rights or remedies provided for in the Contract or Other Agreements, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS, as if the Contractor or Contractor Parties had suffered a breach, default or failure to perform under the Other Agreements.
- (b) If the Contractor or Contractor Parties breach, default or in any way fail to perform satisfactorily under any or all Other Agreements with DAS or the State, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat

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any such event as a breach, default or failure to Perform under the Contract. Accordingly, the State may then exercise at its sole option any and all of its rights or remedies provided for in the Other Agreements or the Contract, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS or the State, as if the Contractor or Contractor Parties had suffered a breach, default or failure to Perform under the Contract.

51. Disclosure of Records. The Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this section, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.
52. Summary of State Ethics Laws. Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.
53. Sovereign Immunity. The parties acknowledge and agree that nothing in the Request for Proposals or the Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.
54. Time of the Essence. Time is of the essence with respect to all provisions of this Agreement that specify a time for performance; provided, however, that this provision shall not be construed to limit or deprive a party of the benefits of any grace or use period allowed in this Agreement.
55. Reserved
56. Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Ban. With regard to a State contract as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this submission in response to the State's solicitation expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising prospective state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See Exhibit C, SEEC Form 11.
57. Health Care Portability and Accountability Act of 1996 ("HIPAA").
 - (a) If the Contractor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business

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Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

- (b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and
- (c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter “Department”) is a “covered entity” as that term is defined in 45 C.F.R. § 160.103; and
- (d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of “individually identifiable health information,” as that term is defined in 45 C.F.R. § 160.103; and
- (e) The Contractor is a “business associate” of the Department, as that term is defined in 45 C.F.R. § 160.103; and
- (f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.
- (g) Definitions.
 - (1) “Breach” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1)).’
 - (2) “Business Associate” shall mean the Contractor.
 - (3) “Covered Entity” shall mean the Department of the State of Connecticut named on page 1 of this Contract.
 - (4) “Designated Record Set” shall have the same meaning as the term “designated record set” in 45 C.F.R. § 164.501.
 - (5) “Electronic Health Record” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5)).
 - (6) “Individual” shall have the same meaning as the term “individual” in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).
 - (7) “Privacy Rule” shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and part 164, subparts A and E.
 - (8) “Protected Health Information” or “PHI” shall have the same meaning as the term “protected health information” in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.
 - (9) “Required by Law” shall have the same meaning as the term “required by law” in 45 C.F.R. § 164.103.

- (10) “Secretary” shall mean the Secretary of the Department of Health and Human Services or his designee.
- (11) “More stringent” shall have the same meaning as the term “more stringent” in 45 C.F.R. § 160.202.
- (12) “This Section of the Contract” refers to the HIPAA Provisions stated herein, in their entirety.
- (13) “Security Incident” shall have the same meaning as the term “security incident” in 45 C.F.R. § 164.304.
- (14) “Security Rule” shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and part 164, subpart A and C.
- (15) “Unsecured protected health information” shall have the same meaning as the term as defined in § 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

- (1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.
- (2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.
- (3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.
- (4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.
- (5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.
- (6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.
- (7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.
- (8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

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- (9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.
- (10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees that at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.
- (13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.
- (14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.
- (15) Business Associate agrees that it shall not directly or indirectly receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations
- (16) Obligations in the Event of a Breach
 - (A) The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. § 17932(b) and the provisions of this section of the contract.
 - (B) Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of

HITECH (42 U.S.C. § 17932(g)) . A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.

(C) The Business Associate agrees to include in the notification to the Covered Entity at least the following information:

1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.
2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).
3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.
4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.
5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and contact information for said official.

(D) Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

(E) Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

- (1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions.

- (A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.
- (B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.
- (C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

- (1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.
- (2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.
- (3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

- (1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.
- (2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

- (A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or
 - (B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or
 - (C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.
- (3) Effect of Termination.
- (A) Except as provided in (1)(2) above, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.
 - (B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

- (1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.
- (2) Amendment. The Parties agree to take such action as is necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.
- (3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.
- (4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.
- (5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.
- (6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's

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own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

- (7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

58. Encryption of Data.

- (a) Contractor and Contractor Parties, at its own expense, shall keep and maintain in an encrypted state any and all electronically stored data now or hereafter in its possession or control located on non-state owned or managed devices that the State, in accordance with its existing state policies classifies as confidential or restricted. The method of encryption shall be compliant with the State of Connecticut Enterprise Wide Technical Architecture (EWTA). This shall be a continuing obligation for compliance with the EWTA standard as it may be amended or supplemented from time to time.
- (b) In the event of a breach of security or loss of State data, the Contractor and Contractor Parties shall notify the Client Agency which owns the data, DAS, the Connecticut Department of Information Technology and the Connecticut Office of the Attorney General as soon as practical but no later than 24 hours after the discovery or reason to believe such breach or loss that such data has been compromised through breach or loss.

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IN WITNESS WHEREOF, the parties have executed this Contract by their duly authorized representatives with full knowledge of and agreement with its terms and conditions.

HazPros, Inc.

STATE OF CONNECTICUT
Department of Administrative Services

By: _____

By: _____

Randy Newbury

Carol Wilson

Title: Vice President

Title: DAS Procurement Director

Date: __

Date:

Contract 10PSX0238 Exhibit A

Asbestos, Lead, Mold, and Other Hazardous
Materials Abatement and Removal Services for
Department of Public Works, All Using State
Agencies and Political Sub Divisions, Schools and
Not for Profits

CT Department of Administrative Services



Scope of Services

This Contract is for Asbestos, Lead, Mold, and Other Hazardous Materials Abatement and Removal work detailed in Exhibit(s) A for a contract term of five (5) years.

It is understood that this contract is subject to statutory authorization and available funding. The State will only enter into contract with Contractor(s) who will be required to assume full responsibility for services provided by the contract. This contract is for the abatement of asbestos-containing materials, lead, mold, and other hazardous materials by persons who are knowledgeable, qualified and trained in the removal, treatment, handling and disposal of asbestos-containing material, lead, mold, and other hazardous materials and the subsequent cleaning of the affected environment. Certain services provided under these contracts may require firms and individuals to be certified or licensed by governmental or industry trade organizations.

- There may be situations in which services and equipment go beyond the actual requirements listed. In such situations the State may approve work, and accept and pay for the added services and equipment. Unit rates must be approved by the using agency prior to any additional work.
- Certain projects, depending on size, scope, and complexity, may be bid separately at the discretion of the using agency.

All work to be performed by the contractor shall comply with, as a minimum, the Connecticut State Building Code as adopted pursuant to CGS 29-252, as amended; and the Connecticut Fire Safety Code as adopted pursuant to CGS 29-292, as amended.

The year of the code governing the Contractors work shall be the current code which has been adopted as per the above Connecticut General Statutes on the start date of the project.

Product and/or Service Specifications

Service Specifications

Required Service Specifications can be found in Exhibits A-1, A-2, A-3, A-4, A-5 and A-6.

Pricing

Awarded pricing is found in Exhibit B-1, B-2, B-3 and Exhibit B-4

This is a firm fixed price contract. No additional markup will be allowed to perform any work listed in the Exhibit B proposal sheets with rental equipment, subcontracted labor, or materials under this contract. Markup for materials and outside services not listed will not exceed 10%.

The contractor shall not charge for equipment items not listed in the Proposal Schedule without prior written approval from the Using Agency and the CT DAS Procurement Services Representative.

Requests for approval of supplemental unit prices shall be made in writing to the Using Agency and the CT DAS Procurement Services Representative and shall be accompanied by such additional information as the Using Agency may require to enable evaluation of the contractor's request.

If applicable, the contractor(s) shall be required to pay for all permits, licenses, and fees, and to give all notices and comply with all laws, ordinances, rules and regulations of the State, city or town in which any required services are to be performed. The using Agency will reimburse the contractor for obtained permits or license costs provided that the contractor provide a receipt, proof and copy of the required permit or license to the DPW office designation referenced below or appropriate Using agency designation. No mark-up to these fees will be allowed.

Environmental Analyst, CT DPW Technical Services, 165 Capitol Ave., Hartford, CT 06106, Rm. # 275.

Price Schedule Exhibits B1, B2 and B3

Awarded Prices represent unit cost for commodities and/or services per unit of measure performed per project type. The rental rates for all equipment are to be computed at the job site only. Pricing will not include trip, travel time, delivery time charges, or any other miscellaneous charges pertaining to the rental of equipment.

The using agency's representatives will monitor the use of all labor and equipment. If the using agency's representatives determine that equipment is not being utilized, such equipment will not be paid for while remaining idle.

The using agency **will not pay** for tools of the trade which includes but are not limited to the following:

- reusable hand and small tools (e.g., screwdrivers, hammers, garden hoses)
- reusable protective clothing
- computer equipment and software including all costs relating to use of such equipment

- communication equipment, including but not limited to regular and cellular telephones, including all costs relating to the use of such equipment
- consumable supplies/equipment
- cost of routine cleaning of equipment
- monitoring equipment, e.g., PIDs and LEL/O2 Meters

Exhibit B-4

Utilized for item offering(s) other than scheduled items found on schedules B1, B2 & B3

Mandatory Extension to State, Government, Municipal or Not for Profit Entities

Awarded Contractors are required to offer and extend this contract (including same pricing, terms and conditions) to Political Sub-Divisions of the State (Towns and Municipalities), Schools, and Not-For-Profit Organizations.

When a Political Sub-Division, School, and/or Not-For-Profit Organization utilizes this contract all references to the “State” are hereby replaced with the Name of the Using Sub-Division, School, or the name of the Not-For-Profit Organization.

Motor Carrier Safety Review

If the performance of the Contract requires the use and operation of any commercial motor vehicle, as defined in section 14-1 of the Connecticut General Statutes, or other motor vehicle with a gross vehicle weight rating (GVWR) of 18,000 pounds or more, each proposer will be the subject of an evaluation, conducted by the Connecticut Department of Motor Vehicles (CTDMV) of its motor carrier safety fitness. The primary factor in the evaluation is the current SAFESTAT score, calculated by the U.S. Federal Motor Carrier Safety Administration (FMCSA) in accordance with the provisions of Title 49, Section 385.1, et seq., of the Code of Federal Regulations.

To be deemed qualified, the proposer must have an overall SAFESTAT category rating of “D” or better, on the date of evaluation. In addition, the proposer’s driver and vehicle out-of-service rates will be consulted. The rates are determined by the number of out-of-service violations cited to the motor carrier in the course of all official, reported vehicle and/or driver inspections conducted during the preceding thirty (30) months. To be deemed qualified, the proposer must not have either a vehicle or driver out-of-service rate, by percentage of out-of-service violations per the total number of inspections reported, that is more than twice the national average. In addition, the proposer must have a current federal safety management practices rating of “Satisfactory,” as defined in 49 CFR section 385.3, as amended.

Further information concerning the motor carrier safety evaluation, to which a proposer is subject, may be obtained from CTDMV at:

<http://www.ct.gov/dmv/cwp/view.asp?a=798&q=413206&dmvPNavCtr=#49068>.

All official inspection and rating data that is used in the performance of each evaluation is available to any motor carrier through the federal SAFESTAT website, at <http://www.ai.volpe.dot.gov/>.

Quantities and/or Usages

Quantities and/or usages only and in no way represent a commitment and/or intent to purchase. Actual quantities may vary and will be identified on individual purchase orders issued by the requesting Agency.

Subcontractors

Proposer(s) must provide the majority of the services described in the specifications.

The Using Agency must approve any and all subcontractors utilized by the successful proposer prior to any such subcontractor commencing any work. Proposers acknowledge by the act of submitting a proposal that any work provided under the contract is work conducted on behalf of the State and that the Commissioner of the Using Agency or his/her designee may communicate directly with any subcontractor as the State deems to be necessary or appropriate. It is also understood that the successful proposer shall be responsible for all payment of fees charged by the subcontractor(s). A performance evaluation of any subcontractor shall be provided promptly by the successful proposer to the Using Agency upon request.

Unless otherwise directed by the Using Agency, the contractor shall furnish a minimum of three quotes for goods or subcontracted services having a value in excess of ten thousand dollars (\$10,000). Subcontractor markup shall not exceed 10%.

The Contractor(s) shall be responsible for all work performed on any project, all work performed by his subcontractors, and the performance of all equipment installed. In addition, any work done or materials used without inspection by an agency representative may be ordered exposed for examination and testing, and restored at the Contractor's expense. If found unacceptable, the work shall be removed and replaced at the Contractor's expense. The Contractor(s) is responsible for all work, equipment, and materials for any of their subcontractors.

Whenever the contractor(s) intends to purchase goods or services from a subcontractor or supplier (at any tier) in which the contractor(s) has a financial interest, the contractor(s) shall inform the Using Agency of the nature and extent of his interest in advance in writing. The Using Agency shall have the right to accept or reject such subcontractor or supplier as it deems appropriate.

Contract Period

The contract shall be in effect for a period of five (5) years.

The State reserves the right to extend a subsequent contract for a period or periods of up to the full original contract term or parts thereof.

Extensions will be considered based upon the performance of the Contractor and the amount of work in progress at the end of the initial contract term. In the event the contract period expires prior to completion of any on-going projects, the State will require the Contractor to complete these projects as dictated by the purchase order issued by the using agency.

Change of address

In the event the contractor moves or updates contact information, it is the responsibility of the contractor to advise Procurement Services of such changes in writing. The State will not be held responsible for payments or purchase orders delayed due to the lack of routing caused by the lack of notification on the contractor's part. Change of address or telephone updates must be forwarded to: Department of Administrative Services, Procurement Services, 165 Capitol Avenue, Hartford, CT 06106.

Contract Use

No work shall be performed by an awarded contractor prior to the issuance of a duly authorized purchase order by the Using Agency.

Agency Implementation

The scope of this contract includes services on a standard or specialized basis. The contract user will select a contractor according to the procedures set forth below.

Standard Contract Use

The contract user will request a work plan and cost estimate based on awarded rates for required services from all awarded contractors. Contractors will then be required to submit a work plan and cost estimate that will accomplish the work task requested by the contract user. The contract user will evaluate each of the proposals and authorize the selected contractor to proceed. The contract user may provide comments or other conditions to revise the selected contractor's work plan.

Specialized Contract Use

The contract user will request a detailed work plan and cost estimate from a specific contractor deemed to be most qualified and consistent to the initial selection of the award. Following evaluation of submitted plan(s) the State may select a contractor determined by factors that include special expertise, past performance, project knowledge, time sensitivity, or other factors determined by the State.

In both the Standard and Specialized use of the contract the Using Agency will select the contractor with the most advantageous, responsive, and lowest project cost based on review of all work plans and cost estimates.

Purchase Orders

Purchase orders will be issued by the contract user for the services related to this Contract. Contractors are cautioned not to perform services without receiving a purchase order number. The contractor is not guaranteed any work by the issuance of the contract or purchase order. The State shall pay only for services requested and performed to the satisfaction of the State invoiced correctly under a valid purchase order.

Prevailing Wage Regulations:

Contractors must include a Contractors' Wage Certification Form when returning their bid submission. This form certifies that they are willing to pay wages in accordance with the current wages and policies established by the Connecticut Labor Department, OR Federal Labor Department. Prevailing wage shall be paid as follows:

Federally Funded Work: Any purchase order issued and funded by federal funds shall be paid in accordance with Federal Prevailing Wage Scales. This will be designated on the purchase order and will be detailed at the pre-construction meeting.

State Funded Work: State funded purchase orders exceeding \$100,000.00 (initial purchase order amount) shall be paid in accordance with State Prevailing Wage Scales. State funded purchase orders below \$100,000.00 (initial purchase order amount) shall be paid in accordance with Non-Prevailing Wage Scales.

In the case where both sets of wage rates are applicable, the higher rate shall prevail.

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the abatement of asbestos-containing materials by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site at all times and an Asbestos Abatement Site Supervisor during asbestos abatement work. This person must comply with applicable Federal, State and Local regulations that mandate work practices, and be capable of performing the work of this contract.
- B. The Asbestos Contractor shall be licensed by the State of Connecticut in accordance with State of Connecticut Regulations, Sections 20-440-1 through 9 and 20-441. Should any portion of the work be subcontracted, the subcontractor must also be licensed in accordance with these regulations. Site supervisors and workers shall be certified in accordance with Sections 20-437 and 20-438 of the Connecticut General Statutes and Section 20-440-5 of the Regulations of Connecticut State Agencies. The licensing and certification requirements are available from the Environmental Health Services Division, Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- C. The Owner will retain the services of a Project Monitor for protection of its interests and those using the building. Abatement monitoring will be conducted as deemed necessary.
- D. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- E. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- F. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. Accessible - A space easily accessed, and which can be entered or seen without demolition.
- B. Agency - The authoritative force, usually at the state level, or their representative.
- C. AHERA – Asbestos Hazard Emergency Response Act - U. S. EPA regulation 40 CFR Part 763 under Section 203 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2643. This rule mandates inspections, accreditation of persons involved with asbestos, and final air clearances following abatement in public and private schools, and public and commercial buildings.
- D. Alternative Work Practice (AWP) - State of Connecticut Department of Public Health (DPH) approved deviation from Asbestos Standards (Sections 19a-332a-1 to 19a-332a-16 inclusive). Alternative Work Practice methods may be used if pre-approved by DPH or with the approval of DPH, the Design Consultant and State's Project Monitor when not pre-approved. Pre-approved Alternative Work Practice methods are included in Appendix A of this specification. Approval of alternative work practice procedures shall not relieve the Contractor from any codes, regulations or standards required by this specification.
- E. Asbestos Abatement Site Supervisor – Any individual who is employed or engaged by an asbestos contractor to supervise an asbestos abatement project.
- F. Asbestos-Containing Waste Materials - Mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.
- G. Asbestos Control Area - An area where asbestos abatement operations are performed which is isolated by physical boundaries, which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris. Two examples of an Asbestos Control Area are a "full containment" and a "glove-bag."
- H. Authorized Asbestos Disposal Facility - A location approved by the Connecticut Department of Environmental Protection for handling and disposing of asbestos waste or by an equivalent regulatory agency if the material is disposed of outside the State of Connecticut.
- I. Category I Non-Friable Asbestos-Containing Material (ACM) - Asbestos-containing packing, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent

asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

- J. Category II Non-Friable ACM - Any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- K. Class I Asbestos Work - Activities involving the removal of TSI and surfacing ACM and PACM.
- L. Class II Asbestos Work - Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.
- M. Class III Asbestos Work - Repair and maintenance operations, where ACM, including thermal system and surfacing material, is likely to be disturbed.
- N. Class IV Asbestos Work - Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.
- O. Competent Person - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the work place and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition for Class I and Class II work who is specially trained in a training course which meet the criteria of 40 CFR 763 (Appendix C to Subpart E - Asbestos Model Accreditation Plan).
- P. Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.
- Q. Critical Barrier - A layer of six (6) mil polyethylene sheeting taped securely over windows, doorways, diffusers, grilles and any other openings between the Work Area and uncontaminated areas outside of the Work Area, including the outside of the building.
- R. Demolition - The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.
- S. DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.
- T. DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- U. Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

- V. Encapsulation - The treatment of asbestos-containing materials to prevent the release of fibers as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).
- W. Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.
- X. Equipment Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled transfer of materials and equipment into or out of the Work Area, typically consisting of a Washroom and a Holding Area.
- Y. Exposed - Open to view.
- Z. Fiber - A particulate form of asbestos five microns or longer, with a length-to-diameter ratio of at least 3 to 1.
- AA. Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.
- BB. Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.
- CC. Fixed Object - A piece of equipment or furniture in the Work Area, which cannot be removed from the Work Area, as, determined by the State.
- DD. Friable Asbestos-Containing Material (ACM) - Material containing more than one percent asbestos which has been applied on ceilings, walls, structural members, piping, duct work, or any other part of a building, which when dry may be crumbled, pulverized or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized or reduced to powder by hand pressure.
- EE. Friable Asbestos-Containing Building Material (ACBM) - Any friable ACM that is in or on interior structural members or other parts of a school or public or commercial building.
- FF. Glove-Bag Technique - A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contaminated work area. Information on glove-bag installation, equipment and supplies, and work practices is contained in 29 CFR 1926.1101. The glove-bag assembly is a manufactured or fabricated device consisting of a glove-bag (typically constructed of six (6) mil polyethylene or polyvinyl chloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. This technique requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- GG. HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of trapping and retaining asbestos

fibers. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

- HH. Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.
- II. Inspection - An activity undertaken in a school building, or a public or commercial building, to determine the presence or location, or to assess the condition of, friable or non-friable ACBM or suspected ACBM, whether by visual or physical examination, or by collecting samples of such materials.
- JJ. Lock-down - The procedure of spraying polyethylene sheeting and building materials with an encapsulant type sealant to seal in non-visible asbestos-containing residue.
- KK. Major Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of more than 3 square or 3 linear feet of friable ACBM.
- LL. Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area. This procedure requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- MM. Minor Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of 3 square or linear feet or less of friable ACBM.
- NN. Movable Object - A piece of equipment or furniture in the Work Area, which can be removed from the Work Area, as, determined by the State.
- OO. Negative Initial Exposure Assessment - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101(f)(2)(iii) that employee exposure during an operation is expected to be consistently below the PEL.
- PP. Non-Friable Asbestos-Containing Material - Material containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy, that when dry cannot be crumbled, pulverized or reduced to powder by hand pressure.
- QQ. Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.
- RR. Permissible Exposure Limits (PELS) - (1) Time-weighted Average Limit (TWA). The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (f/cc) of air as an eight (8) hour time-weighted average (TWA). (2) Excursion Limit. The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

- SS. Pre-Clean - The process of cleaning an area before asbestos abatement activities begin to ensure all dust and debris in the area considered asbestos containing are properly contained and disposed of. This increases the likelihood the area will pass aggressive air sampling clearance requirements after asbestos-containing materials have been removed.
- TT. Presumed Asbestos-Containing Material - Thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 paragraph (k)(5).
- UU. Project Monitor - The certified and licensed individual contracted or employed by the building owner or contractor to supervise and/or conduct air monitoring and analysis schemes. This individual is responsible for recognition of technical deficiencies in procedures during both planning and on-site phases of an abatement project. Requirements for Project Monitor are defined in the Connecticut Department of Public Health Regulations (Sections 20-440-1 to 20-440-9 and 20-441). In addition to these requirements, this person shall be listed in the American Industrial Hygiene Association's Asbestos Analysts Registry.
- VV. Regulated Area - Area established by the employer to demarcate areas where Class I, II and III work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the PEL.
- WW. Regulated Asbestos-Containing Material (RACM) - (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
- XX. Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting members are wrecked or taken out are demolition.
- YY. Repair - Overhauling, rebuilding, reconstructing or reconditioning of structures or substrates where asbestos, tremolite, anthophyllite or actinolite is present.
- ZZ. Response Action - A method including removal, encapsulation, enclosure, repair and operation and maintenance that protect human health and the environment from friable ACBM.
- AAA. Small-Scale, Short Duration (SSSD) - Tasks such as but not limited to:
1. Removal of asbestos containing insulation on pipes.
 2. Removal of small quantities of asbestos-containing insulation on beams or above ceilings.
 3. Replacement of an asbestos-containing gasket on a valve.
 4. Installation or removal of a small section of drywall.
 5. Installation of electrical conduits through or proximate to asbestos-containing materials.
 6. Removal of small quantities of ACM only if required in the performance of another maintenance activity not intended as asbestos abatement.

7. Removal of asbestos containing thermal system insulation not to exceed amounts greater than those which can be contained in a single glove-bag.
 8. Minor repairs to damaged thermal system insulation, which do not require removal.
 9. Repairs to a piece of asbestos-containing wallboard.
 10. Repairs involving encapsulation, enclosure, or removal, to small amounts of friable ACM only if required in the performance of emergency or routine maintenance activity and not intended solely as asbestos abatement. Such work may not exceed amounts greater than those may, which can be contained in a single prefabricated mini-enclosure. Such an enclosure shall conform spatially and geometrically to the localized work area, in order to perform its intended containment function.
- BBB. Spot Repair – Any asbestos abatement performed within a facility involving not more than three (3) linear feet or three (3) square feet of asbestos-containing material.
- CCC. Unfinished Space - Space used for storage, utilities or work area where appearance is not a factor. Examples of an unfinished space include crawlspace; pipe tunnel and similar spaces.
- DDD. Visible Emissions - Any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.
- EEE. Visible Residue - Any debris or dust on surfaces in areas within the Work Area where asbestos abatement has taken place and which is visible to the unaided eye. All visible residue is assumed to contain asbestos.
- FFF. Waste Generator - Any owner or operator of a source whose act or process produces asbestos-containing waste material.
- GGG. Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
- HHH. Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools, which have been dampened with water, and afterwards thoroughly decontaminated or disposed of, as asbestos-contaminated waste.
- III. Work Area - Specific area or location where the actual work is being performed or such other area of a facility, which the Commissioner determines, may be hazardous to public health because of such asbestos abatement.
- JJJ. Worker Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled passage of workers and authorized visitors, typically consisting of a Clean Room, a Shower Room and an Equipment Room.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. Occupational Safety and Health Administration (OSHA)
 - 29 CFR 1910.1001 - Asbestos, Tremolite, Anthophyllite, and Actinolite.
 - 29 CFR 1926.21 - Safety Training and Education.
 - 29 CFR 1926.32 - Definitions.
 - 29 CFR 1926.51 - Sanitation.
 - 29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.
 - 29 CFR 1926.59 - Hazard Communication.
 - 29 CFR 1926.62 – Lead Exposure in Construction.
 - 29 CFR 1926.200 - Accident Prevention Signs and Tags.
 - 29 CFR 1926.417 - Lockout and Tagging of Circuits.
 - 29 CFR 1926.1101 - Asbestos.
 2. Environmental Protection Agency (EPA)
 - 40 CFR 61, Subpart M - National Emission Standards for Hazardous Air Pollutants; Asbestos NESHA Revision; Final Rule.
 - 40 CFR 763, Subpart E - Asbestos School Hazard Emergency Response Act (ASHERA).
 - 40 CFR 763, Subpart G - Worker Protection Rule.
 - 40 CFR 763, Appendix C to Subpart E - Asbestos Model Accreditation Plan (MAP).
 3. State of Connecticut, Department of Public Health Regulations (DPH)
 - Section 19a-332a-1 through 19a-332a-16 - Standards for Asbestos Abatement.
 - Section 19a-333-1 through 19a-333-13 - Asbestos-Containing Materials in Schools Regulations.
 - Section 19a-332e-1 through 19a-332a-8 – Civil Penalties for Violation of Asbestos Abatement Laws.
 - Section 20-440-1 through 20-440-9 - Licensure and Training Requirements for Persons Engaged in Asbestos Abatement and Asbestos Consultation Services.

Section 20-441 – Refresher Training.

4. American National Standards Institute (ANSI)

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

ANSI Z88.2 - Respiratory Protection.
5. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.

ASTM E 96 - Water Vapor Transmission of Materials.

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

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

ASTM E 1368 - Visual Inspection of Asbestos Abatement Projects.

ASTM E 1494 - Encapsulants for Spray- or Trowel- Applied Friable Asbestos-Containing Building Materials.
6. Underwriters Laboratories, Inc. (UL)

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

1.5 DOCUMENTATION

- A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.
- B. Manufacturer's Catalog Data:
 1. Local Exhaust Equipment
 2. Vacuum Equipment
 3. Respirators
 4. Pressure Differential Automatic Recording Instrument
 5. Surfactant
 6. Chemical Encapsulant
 7. Polyethylene Sheeting
 8. Airless Sprayers
 9. Portable Shower Units
 10. Adhesive Removal Chemicals
 11. MSDS for All Materials Delivered to the Site
 12. Letters of Compatibility for Encapsulants and Over coating Materials

C. Statements:

1. State Notification
2. Worker Medical Certification
3. Worker Training Certification
4. Worker Respirator Fit Testing
5. OSHA Laboratory Certification
6. Contractor's Project Monitor Certification
7. Landfill Approval
8. Safety Plan
9. Respirator Protection Plan
 - a. Initial Exposure Assessment
 - b. Copies of all required notifications, approvals and permits for the removal, disposal and transport asbestos-containing or contaminated materials.
 - c. Documentation from a physician certifying that all employees who may be exposed to airborne asbestos in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.1101. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants which to which he/she may be exposed
 - d. Documentation certifying that all employees have received training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.
 - e. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.1101.
 - f. Qualifications of the person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
 - g. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. Include any site-specific information to address health and safety procedures unique to this project.
 - h. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of

the continued effectiveness of the program; and other elements included in the standard.

- i. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross-referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and, contain information on how other contract employees will be informed about hazards their employees may encounter while working in the facility.
- j. Demonstrate that employee's exposure will be below the PEL's. For Class I asbestos work until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PEL's, or otherwise makes a negative exposure assessment, the employer shall presume that employees are exposed in excess of the TWA and excursion limit.

D. Records:

1. Sign-in/out Logs
2. Personal Air Sampling Results
3. Waste Shipment Records
4. Pressure Differential Recording Data
5. NPE Inspection and Smoke Test Logs
6. Rental Equipment Statements
 - a. When rental equipment is to be used in removal areas or to transport waste materials, submit a copy of written notification provided to the rental company informing them of the nature of use of the rented equipment

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.1101. Provide appropriate respiratory protection for each worker and ensure usage during potential asbestos exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements for respirators in use.
- B. Minimum respiratory protection shall be as follows:

Airborne concentration of asbestos,
or conditions of use.

Required Respirator

Not in excess of 10 f/cc
(100 x PEL)

Any powered air purifying
respirator equipped with
high efficiency filters
or any supplied-air respirator

	operated in continuous flow mode.
Not in excess of 100 f/cc (1000 x PEL)	Full face piece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (>1000 x PEL) or unknown concentration	Full face piece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

- a. Respirators assigned for higher airborne fiber concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.
 - b. A high-efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 microns in diameter or larger.
- C. Provide and require all workers to wear protective clothing in Work Areas where asbestos fiber concentrations exceed permissible limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing remains in the Equipment Room for reuse or disposal of as contaminated waste.
- D. Ensure that all workers and authorized persons enter and leave the Asbestos Control Area through the Worker Decontamination Enclosure System.

1.7 EQUIPMENT REMOVAL PROCEDURE

- A. Clean surfaces of contaminated containers and equipment thoroughly by vacuuming with HEPA filtered equipment and wet wiping before moving such items into the Equipment Decontamination Enclosure System for final cleaning and removal to uncontaminated areas. Ensure that personnel do not leave the Asbestos Control Area through the Equipment Decontamination Enclosure System.

1.8 SEQUENCE OF WORK

- A. Proceed in accordance with the sequence of work as mutually agreed upon with the Owner. Work shall be divided into convenient Work Areas, each of which is to be completed as a separate unit. The following sequence of work shall be used for the asbestos abatement work:
 1. A visual inspection of the Work Area to determine pre-existing damage to facility components.
 2. Release of floor area (Phase) to the Contractor.
 3. All temporary utilities required for the project shall be on site and operational prior to the initiation of asbestos work.

4. Removal of all movable objects from the Work Area undergoing abatement by the Contractor.
5. Abatement of all asbestos-containing materials by the Contractor.
6. Air sampling by the Owner's Project Monitor for reoccupancy.
7. Rework activities as specified in other sections of this specification.
8. Cleanup by the Contractor. Work Areas must be returned to their original condition or better.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

1.10 SCHOOL IN SESSION (SIS) REQUIREMENTS – GRADES K-12

- A. No asbestos removal activities are permitted during regular school hours.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2006-33.
- C. The abatement contractor shall provide the documentation included in paragraph 1.5.C to the Asbestos Project Designer 30 days prior to start of asbestos removal activities in each work area for submission in DPH SIS requests. No asbestos removal is permitted in an occupied school facility until approved by DPH.
- D. The Owners project monitor will conduct daily air sampling at prescribed locations throughout the project. Samples will be collected and read via phase contrast microscopy (PCM) twice per shift. All air samples in occupied areas shall be analyzed at the site prior to the end of the shift, by an analyst currently listed on the AIHA Asbestos Analysts registry and the Connecticut DPH Laboratory Certification Program. The results of the analysis of all samples shall be made available prior to return of students on the next day following the date of collection of the samples.
- E. If during asbestos abatement activities, any air sample analyzed by PCM is either overloaded with particulate or exceeds 0.010 f/cc or the background level, whichever is higher, the sample shall be analyzed by the NIOSH 7402 Transmission Electron Microscopy (TEM) method. Results of the analysis of the TEM samples shall be submitted to the DPH, the appropriate local Department of Health Agency and the Connecticut Technical High School System.
- F. If any air sample analyzed by NIOSH 7402 TEM method is either overloaded with particulate and cannot be analyzed or, if upon analysis the sample fiber concentration exceeds 0.005 f/cc, the area outside the established asbestos work area will be considered contaminated with asbestos. The Project Designer shall conduct an assessment of the contamination and the asbestos contractor shall re-establish engineering controls, isolation barriers, abatement work practices, etc. and clean the affected area. An area of the school evacuated due to air sampling data as described above shall not be occupied until: i) the area is cleaned via wet wipe techniques using amended water and HEPA vacuum procedures by the asbestos contractor; and ii) air sampling and analysis of the area satisfies the DPH criteria for re-occupancy.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating four (4) or six (6) mil.
- B. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Disposable bags shall be [transparent] [opaque].
- C. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- D. Surfactant (wetting agent) shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water or as directed by the manufacturer.
- E. Containers must be impermeable and shall be both air and watertight. Containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101 and EPA 40 CFR Part 61.152 as appropriate.
- F. Labels and signs shall conform to OSHA Standard 29 CFR 1926.1101.
- G. Encapsulant shall be bridging or penetrating type which has been approved by the Design Consultant. Usage shall be in accordance with manufacturer's printed technical data. Encapsulant must be compatible with new materials being installed. Encapsulant may be clear or white.
- H. Glove-bag assembly shall be manufactured of six (6) mil transparent polyethylene or PVC with two (2) inward projecting long sleeve gloves, an internal pouch for tools, and an attached labeled receptacle for waste.
- I. Mastic removal chemicals shall be low odor, non-citrus based. Flash point shall be in excess of 140 deg. F.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for asbestos removal.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each eight workers.

- E. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Asbestos Control Area.
- F. Pressure differential automatic recording instrument shall be provided to ensure exhaust air filtration devices provide the minimum pressure differential required between the Work Area and occupied areas of the facility.
- G. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Asbestos Control Area.
- H. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
- I. Mechanical mastic removal equipment shall be suitable for the application.
- J. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule.
- K. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR ASBESTOS ABATEMENT

- A. A Competent Person and Asbestos Abatement Site Supervisor shall be on the job at all times to ensure the establishment and maintenance of the NPE and proper work practices are followed through completion of the project.
- B. Containerize asbestos-containing waste material removed daily. Do not allow ACM to remain on the floor overnight, allowing it to dry out. Fill disposal containers (six (6) mil polyethylene bags or fiber drums) as removal proceeds, seal filled containers, and apply caution labels and clean containers before removal to wash area. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Bags may be placed in drums for staging and transportation to the disposal site. Bags shall be decontaminated by wet cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops. Vinyl asbestos tile removed shall be bagged and placed in clean drums and sealed with locking ring tops. Wet clean each container thoroughly before moving to a holding area or to the waste storage container.
- C. If at any time during asbestos removal, should the Project Monitor suspect contamination of areas outside the Work Area, the Contractor shall stop all abatement work and take steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and visual inspections determine decontamination.

3.2 PREPARATION OF WORK AREA ENCLOSURE SYSTEM

- A. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
- B. Post warning signs meeting the specifications of OSHA 29 CFR 1910.1001 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area. Additional signs may require posting following construction of work place enclosure barriers.
- C. Utilize engineering controls and personnel protective equipment while installing enclosures and supports when asbestos-containing materials may be disturbed.
- D. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.

- E. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- F. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the building. Seal all vents.
- G. Pre-clean movable objects within the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate and remove such objects from Work Areas to a temporary location.
- H. Pre-clean fixed objects within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with six (6) mil polyethylene sheeting sealed with tape. Objects which must remain in the Work Area and which require special ventilation or enclosure include electrical equipment, pumps, compressors, control panels, meter equipment.
- I. Clean the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
- J. Seal off all windows, doorways, skylights, ducts, grilles, diffusers, and any other openings between the Work Area and the uncontaminated areas outside of the Work Area with critical barriers. Doorways and corridors, which will not be used for passage during work, must be sealed with fixed critical barriers.
- K. Conspicuously label and maintain emergency and fire exits from the Asbestos Control Area satisfactory to the Owner.

3.3 WORKER DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, a Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series. Access to the Work Area shall only be through this enclosure.
- B. Access between rooms in the Worker Decontamination Enclosure System shall be through double flap-curtained openings (air locks). Other effective designs are permissible. The Clean Room, Shower Room and Equipment Room located within the Worker Decontamination Enclosure, shall be completely sealed ensuring sole source of airflow into the Asbestos Control Area originates from the outside-uncontaminated areas.
- C. The Clean Room shall be adequately sized to accommodate workers and shall be equipped with a suitable number of hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Changing areas of the Clean Room shall be suitably screened from areas occupied by the public.
- D. The Shower Room shall be of sufficient capacity to accommodate the number of workers. Supply warm water to showers. Provide one shower for each eight workers. No worker or other person shall leave an Asbestos Control Area without showering.

3.4 EQUIPMENT DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, an Equipment Decontamination Enclosure System consisting of two (2) totally enclosed chambers divided by a double flap curtained opening. Other effective designs are permissible. This enclosure must be constructed to ensure that no personnel enter or exit through this unit.

3.5 SEPARATION OF WORK AREAS FROM OCCUPIED AREAS

- A. Occupied areas and/or building space not within the Asbestos Control Area shall be separated from asbestos abatement Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- B. Do not impair required building exits from any occupied building area. Where normal exits have been blocked by the asbestos work, provide temporary exit signs directing building occupants to the nearest available exit location.
- C. Create a pressure differential in the range of 0.02 to 0.04 inches of water column between the Work Area and occupied areas by the use of acceptable pressure differential equipment. Provide a sufficient quantity of units to exhaust the volume of air within the Asbestos Control Area a minimum of four times per hour. Continuously monitor the pressure differential between the Work Area and occupied areas utilizing recording type equipment to ensure exhaust air filtration equipment maintains a minimum pressure differential of 0.02 inches of water column.

3.6 REMOVAL OF FRIABLE ASBESTOS MATERIAL

- A. Remove friable materials identified in accordance with the specific description of work to be accomplished.
- B. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first, with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints.
- C. Removal of existing suspended ceilings, fluorescent light fixtures, and other ceiling mounted items that interfere with asbestos abatement shall be accomplished after engineering controls have been established. Fluorescent fixture components require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all

applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.

- D. Where non-ACM thermal systems insulation exists within the Work Area, decontaminate and protect non-ACM insulation material with two (2) layers of six (6)-mil polyethylene sheeting, or remove as asbestos contaminated.
- E. Spray friable materials with amended water, using airless spray equipment capable of providing a "mist" application to reduce the release of fibers during the removal operation. In order to maintain indoor asbestos concentrations at a minimum, remove the wet asbestos in manageable sections. Materials shall not be allowed to dry out. Material drop shall not exceed 8 feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop. For heights, exceeding 15 feet provide enclosed dust-proof chutes.
- F. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.7 REMOVAL OF NON-FRIABLE RESILIENT FLOORING AND ASSOCIATED MASTIC

- A. Resilient flooring shall be removed by approved methods, which minimize the release of asbestos fibers. Mastic may be removed by hand methods utilizing solvents or by mechanical means. Precaution shall be taken to prevent the leakage of contaminated liquids containing solvents to other areas of the building. Take immediate steps to clean up leaks and prevent future occurrences of the leak. Solvents shall be used in strict accordance with the manufacturer's written recommendations. Mechanical equipment may be used to remove flooring mastic. Ensure surfaces have been adequately wetted to prevent dust emissions prior to operation of mechanical mastic removal equipment.

3.8 REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Non-friable miscellaneous materials shall be removed by approved methods, which minimize the release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap ACM in 6-mil polyethylene sheeting and remove for disposal.

3.9 INTACT REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Intact removal of non-friable asbestos-containing materials shall be accomplished by approved methods without release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap removed ACM in 6-mil polyethylene sheeting and remove for disposal.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter DEH #2003-10.

3.10 REMOVAL OF CONTAMINATED EARTH

- A. Remove all ACM gross debris and visible contamination from the top of soil. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints. Perform removal of ACM from all surfaces containing asbestos in the crawl space. After successful completion of a visual inspection, remove the polyethylene sheeting and place in disposal containers. Any debris which may have leaked behind the inner layer shall be removed by HEPA vacuuming. Remove soil to a depth of 2-inches, or to a depth as required by the Project Manager to remove ACM contamination. Apply a lock-down encapsulant to all surfaces within the Work Area from which asbestos has been removed.

3.11 REMOVAL OF EXTERIOR UNDERGROUND PIPE AND CONDUIT SYSTEM INTACT

- A. After excavating, to expose the top of the underground pipe system, remove by hand, earth from the sides of the pipe without disturbing the exterior. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. At locations where the pipe systems are to be cut into sections, and where the sections are to be lifted, remove earth from the entire perimeter of the pipe conduit. Construct the NPE and establish a negative pressure differential between the Work Area and the exterior. Construct the containment of adequate size to remove a minimum of two linear feet of outer casing and underlying insulation prior to disturbing ACM. Utilize locations where field joints have been made during pipe system installation to the extent feasible. Remove the ACM casing and pipe insulation materials from around steam piping. Once the area has passed clearance testing and all controls established by this section have been removed cut the piping and remove the section from the trench using slings which will not damage the casing. Double wrap sections of pipe in 6-mil polyethylene sheeting and place in the waste storage container or transport vehicle.

3.12 REMOVAL OF EXTERIOR UNDERGROUND PIPE INSULATION

- A. After excavating to expose the top of the underground pipe system, remove by hand earth from the sides of the pipe without disturbing the insulation. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. After excavating to expose the top of the pipe system, remove by hand earth from the sides of the pipe. Construct the NPE along the entire section of piping between manholes, and establish a negative pressure differential between the

Work Area and the exterior. Remove the pipe insulation and all asbestos-containing material, including contaminated earth from around piping as ACM.

3.13 REMOVAL OF WINDOWS FROM BUILDING EXTERIOR

- A. Cover floor surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 5-feet from walls. Cover ground surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 10-feet from building exterior. Install polyethylene sheet over the inside of the window opening and seal with tape.
- B. The windows are to be removed from the opening by hand methods to minimize damage, wrapped in two (2) layers of 6-mil polyethylene sheeting and taken off-site by the contractor for final cleaning prior to disposal and recycling. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible residue (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.14 ALTERNATIVE WORK PRACTICE (AWP) PROCEDURES

- A. The procedures described in this specification are to be utilized at all times. Alternative work practice methods may be used if pre-approved by DPH. Should the Contractor desire to use alternative work practice procedures, which have not been pre-approved by DPH, submit in writing a description of the proposed methods to DPH, Design Consultant, and Owner's Project Monitor for approval.
- B. Alternative work practice (AWP) procedures shall provide equivalent or greater protection than the procedures that they replace. A DPH licensed asbestos project designer must submit in writing a description of the proposed methods to the Design Consultant for review. If the procedure is acceptable to the Design Consultant, an AWP application may then be forwarded to DPH for approval. Failure to secure AWP acceptance or approval shall not be a basis of a claim for additional compensation.
- C. The Contractor shall be responsible for all fees associated with filing Alternative Work Practice (AWP) applications, which have not been pre-approved. AWP applications must be submitted by Connecticut DPH licensed Project Designers.

3.15 CLEAN-UP PROCEDURE

- A. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris which may have splattered or collected on the polyethylene wall covering. Carefully remove the cleaned outer layer of polyethylene from the walls, fold inward as material is being removed, and place in disposal containers. Any debris, which may have leaked behind the outer layer, shall be removed by HEPA vacuuming and/or wet cleaning.
- B. Remove contamination from the exteriors of the negative air machines, scaffolding, ladders, extension cords, hoses and other equipment inside the Work Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or wet cleaning.
- C. The Owner's Project Monitor shall conduct a thorough visual inspection utilizing a high-intensity flashlight, with the containment barriers in place, to detect visible accumulations of

dust or bulk asbestos-containing materials remaining in the Work Area. Should dust, debris or residue be detected, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean up of the work site.

- D. Once the area has been re-cleaned, any equipment, tools or materials not required for completion of the work, shall be removed from the Work Area. Negative air filtration devices shall remain in place and operating for the remainder of the clean-up operation.
- E. Wet wipe the walls beginning at the point farthest away from the negative air filtration units using cotton rags or lint free paper towels. Rags and towels shall be disposed of after each use. Workers should avoid the use of dirty rags to insure proper cleaning of surfaces. Mop the entire floor with a clean mop head and amended water. Water shall be changed frequently. Waste water shall be filtered using best available technology and dumped down an approved drain.
- F. A visual inspection of the Work Area by the licensed Project Monitor shall be conducted. Evidence of asbestos contamination identified during the inspection will necessitate further cleaning as heretofore specified. The area shall be re-cleaned at the Contractors expense until the Standard of Cleanliness is achieved.
- G. Upon successful completion of the visual inspection, the Contractor shall encapsulate all abated surfaces.
- H. Once the lock-down encapsulant has sufficiently dried, air sampling for reoccupancy clearance shall be undertaken using aggressive sampling techniques. Analysis of clearance samples shall follow State of Connecticut Regulations, Section 19a-332a-12. Areas, which do not comply, shall continue to be cleaned by and at the Contractors expense, until the specified Standard of Cleaning is achieved as evidenced by results of air testing. When the Work Area passes the reoccupancy clearance, controls established by this specification may be removed.
- I. During breakdown of containment carefully remove the polyethylene barriers. Fold inward as the material is being removed, and place in leak-tight containers. Any debris which may have fallen behind the polyethylene sheeting shall be removed by HEPA vacuuming and/or wet cleaning. Remove all remaining polyethylene, including critical barriers, and Decontamination Enclosure Systems leaving negative air filtration devices in operation. HEPA vacuum and/or wet wipe any visible residue, which is uncovered during this process.

3.16 REOCCUPANCY CLEARANCE AIR SAMPLING

- A. Reoccupancy clearance air sampling will be conducted by the Project Monitor in accordance with the reoccupancy clearance criteria as set forth in the Regulations of Connecticut State Agencies, Section 19a-332a-12 or Section 19a-333-7 as applicable.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2010-48.
- C. Post-abatement clearance air monitoring requirements are as follows:
 - 1. Air sampling will not begin until at least 12 hours after wet cleaning has been completed and no visible water or condensation remain.

2. Sampling equipment will be placed at random around the Work Area. If the Work Area contains the number of rooms equivalent to the number of required samples based on floor area, a sampler shall be placed in each room. When the number of rooms is greater than the number of samples, a representative number of rooms will be selected.
3. The representative samplers placed outside the Work Area but within the building will be located to avoid any air that might escape through the isolation barriers and will be approximately 50 feet from the entrance to the Work Area, and 25 feet from the isolation barriers.
4. The following aggressive air sampling procedures will be used within the Work Area during all air clearance monitoring:
 - a. Before starting the sampling pumps, direct the exhaust from forced air equipment (such as a 1 horsepower leaf blower) against all walls, ceilings, floors, ledges and other surfaces in the Work Area. This should take at least 5 minutes per 1000 SF of floor area.
 - b. Place a 20-inch fan in the center of the room. (Use one fan per 10,000 cubic feet of room space.) Place the fan on slow speed and point it toward the ceiling.
 - c. Start the sampling pumps and sample for the required time.
 - d. Turn off the pump and then the fan(s) when sampling is complete.
5. Air volumes taken for clearance sampling shall be sufficient to accurately determine (to a 95 percent probability) fiber concentrations to 0.010 f/cc of air.
6. Each homogeneous Work Area, which does not meet the clearance criteria, shall be thoroughly recleaned using HEPA vacuuming and/or wet cleaning, with the negative pressure ventilation system in operation. New samples shall be collected in the Work Area as described above. The process shall be repeated until the Work Area passes the test, with the cost of repeat sampling being borne entirely by the Contractor.
7. For an asbestos abatement project with more than one homogeneous Work Area, the release criterion shall be applied independently to each Work Area.

- D. Continuous air sampling during construction will be conducted by the State's Project Monitor. Reoccupancy clearance testing will be in accordance with State of Connecticut DPH requirements. For window removal, a final visual inspection is to be performed to determine successful completion of all work associated with removal of windows

3.17 CONTRACTOR RESPONSIBILITY

- A. Conduct air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. Perform monitoring to determine accurately the airborne concentrations of asbestos to which employees may be exposed. Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours of receipt of results, and shall be available for review until the job is complete.

3.18 DISPOSAL OF ASBESTOS

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.

- B. Disposal approval shall be obtained prior to commencement of asbestos removal.
- C. Warning signs must be attached to vehicles used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- D. Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and tape into place.
- E. A copy of the completed Waste Shipment Record shall be provided to the Owner.

3.19 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, resecure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, fire alarm systems and sound systems.

3.20 ACTION CRITERIA

- A. If air samples collected outside of the Work Area during abatement activities indicate airborne fiber concentrations greater than original background levels or greater than 0.010 f/cc, as determined by Phase Contrast Microscopy, whichever is larger, an examination of the Work Area perimeter shall be conducted and the integrity of barriers shall be restored. Cleanup of surfaces outside the Work Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming abatement activities.

END OF SECTION 02 82 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work under this Section shall include furnishing all labor, materials and equipment necessary to install flexible connections at equipment connections to fixed ductwork following removal of existing flexible connections and successful air clearance test results.
- B. Contractor shall verify all locations where flexible connections are to be removed and replaced.

1.2 SUBMITTALS

- A. Contractor shall submit manufacturer's complete product data and installation instructions with list of materials, locations, and thickness for each use.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Closely woven, 30 oz. UL approved glass fabric, double coated with neoprene.
- B. Fire retardant, waterproof, air tight, resistant to acids and grease, capable of withstanding temperatures up to 250 degrees F.
- C. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install new flexible duct connections following manufacturer's instructions and in accordance with Fig. 3-5 of the SMACNA Low Pressure Duct Standards.
- B. Seal all ductwork where dismantled using duct sealing tape and mastic. The Contractor shall repair all ductwork that is buckled, misaligned, or damaged as a result of this work at no additional cost to the Owner.

END OF SECTION 23 33 00

PART 1 - GENERAL**1.1 DESCRIPTION OF WORK**

- A. The work included under this section shall include furnishing all labor, materials and equipment necessary to insulate or re insulate all (including presently un-insulated but previously insulated) mechanical systems indicated.
- B. Insulation requirements shall be in accordance with the current edition of ASHRAE 90.1. Insulation shall consist of replacement with a non-asbestos-containing material of the thickness and type as specified herein.
- C. Installation of insulation materials shall include but is not limited to the following:
 - 1. Low Pressure Steam Piping.
 - 2. Steam Condensate Piping.
 - 3. Roof Drains.
 - 4. Domestic Cold Water Piping.
 - 5. Domestic Hot Water Piping.
 - 6. Chilled Water Piping.
 - 7. Hot Water Heating Supply and Return Piping.
 - 8. Mechanical Equipment.
 - 9. HVAC Equipment.
 - 10. HVAC Ductwork.
 - 11. Boiler Breeching

1.2 REFERENCES

- A. ASHRAE 90.1 – Energy Standards for Buildings Except Low-rise Residential Buildings.
- B. ASTM C547 - Mineral Fiber Preformed Pipe Insulation.
- C. ASTM C612 – Mineral Fiber Block and Board Thermal Insulation.
- D. ASTM E84 - Surface Burning Characteristics of Building Materials.
- E. ASTM E96 - Water Vapor Transmission of Materials.
- F. NFPA 255 - Surface Burning Characteristics of Building Materials.
- G. UL 723 - Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Submit manufacturer's technical product data and installation instructions for each insulation material and device proposed for use with a list of materials, locations and thickness for each use.
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1.4 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E84, NFPA 255, and UL 723.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- B. Store insulation in original wrapping and protect from weather and construction traffic.
- C. Protect insulation against dirt, water, chemical, and mechanical damage.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastic, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 - PRODUCTS**2.1 GENERAL**

- A. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

2.2 GLASS FIBER PIPING INSULATION

- A. Fiberglass piping insulation shall conform to ASTM C547 and shall be pre-molded sectional rigid molded with a "k" of 0.24 at 75 degrees F mean temperature, thickness as specified in the Piping Insulation Thickness table. Insulation shall be jacketed with an double pressure-sensitive adhesive ASJ vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.3 GLASS FIBER FITTING INSULATION

- A. Insulation for fittings, flanges, and valves shall be remolded PVC fitting covers with fiberglass insulation inserts of the same thickness and conductivity as used on adjacent piping. Maximum service temperature 450 degrees F. (insert, 150 degrees F PVC). PVC fitting covers shall be 30 mil.

2.4 DUCT INSULATION

- A. Flexible fiberglass duct insulation shall conform to ASTM C553 with 1 pcf density, with a "k" of 0.28 at 75 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 250 degrees
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- B. Rigid fiberglass duct insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.5 EQUIPMENT INSULATION

- A. Rigid fiberglass equipment insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 2" thick. Insulation shall be jacketed with an ASJ vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.6 BOILER BREECHING INSULATION

- A. Mineral rock wool conforming to ASTM C612 class 3, density 3.0 pounds pcf. Maximum service temperature 1200 degrees F.

2.7 ADHESIVES, SEALANTS, AND COATING COMPOUNDS

- A. Vapor barrier coating shall conform to MIL-A-3316, Class 1.

2.8 ANCHOR PINS

- A. Anchor pins and speed washers as recommended by the insulation manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials. Notify Agency if any leaks have been identified during construction activities prior to re-insulation.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

- A. Insulation thickness shall be in accordance with the current edition of ASHRAE 90.1. The insulation thickness identified in the insulation schedule is meant only as a guide and it is the responsibility of the contractor to comply with applicable codes at the time of the work.
 - B. Fiberglass Insulation:
 1. Install materials in accordance with manufacturer's instructions. Secure seams with pressure sensitive tape closure and butt joints with minimum 3-inch (76 mm) wide tape of same material as vapor barrier jacket.
 2. On exposed piping, locate insulation and cover seams in least visible locations.
 3. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations.
 4. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections and expansion joints.
 5. Apply vapor barrier coating to all exposed ends of insulation.
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- C. Insulation thicknesses for hot water systems are for systems operating to 200 F. LP steam is for temps from 200 to 250 F (15 psig). MP steam is for temps from 251 to 350 F (15 to 125 psig). HP steam is for temps from 351 and above (125 psig and above) Condensate is assuming maximum temp of 200 F.

3.3 INSULATION SCHEDULE

Per 2006 International Energy Conservation Code:

PIPING SYSTEM	PIPE SIZE (Inch)	THICKNESS (Inch)
Domestic Cold Water	All	1"
Domestic Hot Water	Up to 2"	1"
Domestic Hot Water	2 1/2" to 8"	2"
Domestic Hot Water Recirculating	All	1"
Horizontal Roof Drains	Up to 6"	1"
Horizontal Roof Drains	8" and over	1 1/2"
Hot Water Supply and Return	Up to 1 1/2"	1"
Hot Water Supply and Return	1 1/2" and over	2"
Low Pressure Steam(up to 15 psig)	Up to 2"	1 1/2"
Low Pressure Steam(up to 15 psig)	2 1/2" to 6"	3"
Low Pressure Steam(up to 15 psig)	8" and over	3 1/2"
Medium Pressure Steam(15 to 120 psig)	Up to 1"	2"
Medium Pressure Steam(15 to 120 psig)	1 1/4" to 4"	2 1/2"
Medium Pressure Steam(15 to 120 psig)	5" to 8"	3 1/2"
High Pressure Steam(125 psig and above)	Up to 2"	2 1/2"
High Pressure Steam(125 psig and above)	2 1/2" to 4"	3"
High Pressure Steam(125 psig and above)	5" to 8"	3 1/2"
Steam Condensate (Gravity and Pumped)	All	1 1/2"
Condensate Drain (copper pipe only)	All	1/2"
Flash Tank	All	3"
Chilled Water (40 F to 55 F)	Up to 1 1/2"	1"
Chilled Water (40 F to 55 F)	1 1/2" and over	1 1/2"
Hot Water Storage Tank	All	2"
Other Heating Equipment	All	2"
Boiler Breeching	All	3"

END OF SECTION 23 07 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall be the removal of asbestos-containing roofing materials by persons who are knowledgeable, qualified, licensed, and trained in the removal, treatment, handling and disposal of asbestos-containing roofing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site with authority to take prompt corrective measures at all times during roofing removal work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract.
- B. The Owner may retain the services of a Project Monitor for protection of its interests and those using the building. Area air sampling and visual inspection to ensure proper clean up of the work area will be conducted as deemed necessary.
- C. Deviations from the Specification require the written approval of the State of Connecticut.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. AGENCY - The authoritative force, usually at the state level, or their representative.
- B. ASBESTOS-CONTAINING MATERIAL (ACM) – Any material containing more than one percent asbestos.
- C. COMPETENT PERSON – In addition to the definition in 29 CFR 1926.32(f), one who is in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation plan (40 CFR Part 763) for Supervisor, or its equivalent.
- D. HIGH-EFFICIENCY PARTICULATE AIR (HEPA) - A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles 0.3 microns in diameter.
- E. LEAK-TIGHT - Solids or liquids cannot escape or spill out. It also means dust-tight.

- F. REGULATED AREA - Area established by the Competent Person to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the Permissible Exposure Limit (PEL).
- G. NON-FRIABLE REGULATED ASBESTOS-CONTAINING MATERIAL - Means any material containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section I, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- H. REGULATED ASBESTOS-CONTAINING MATERIAL (RACM) – means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
 - 1. Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101-Asbestos
 - 2. Environmental Protection Agency (EPA) 40 CFR 61, Subpart M-National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule. 40 CFR 763, Appendix C to Subpart E – Asbestos Model Accreditation Plan (MAP)
 - 3. State of Connecticut, Department of Public Health Regulations (DPH) Sections 19a-332a-1 Through 19a-332a-16 – Standards for Asbestos Abatement

1.5 SUBMITTALS AND NOTICES

- A. Prior to commencement of asbestos abatement work, submit to the A/E and Construction Coordinator and receive approval and/or acknowledgement of following:
 - 1. State notifications (when applicable)
 - 2. Asbestos worker medical clearance to wear a respirator documentation
 - 3. Asbestos worker & Competent Person training documentation
 - 4. Asbestos worker respiratory fit testing documentation
- B. Within 35 days following the date the asbestos waste trailer leaves the job site, submit to the A/E and DPW Construction Coordinator:
 - 1. Waste shipment record for disposal of asbestos roofing material

1.6 PERSONNEL PROTECTION

- A. Provide and require all workers to wear protective clothing and half face respirators when present in the Regulated Area established by the Competent Person.

1.7 WORKER TRAINING REQUIREMENTS

- A. Training for the Competent Person, Supervisor, and Workers shall meet the requirements of Federal and State regulations.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Polyethylene sheeting and disposal bags shall be six (6) mil.
- B. Labels and signs shall conform to applicable regulations.

2.2 TOOLS AND EQUIPMENT

- A. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance per OSHA requirements.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Waste Containers shall be lined with 2 layers of 6 mil polyethylene sheeting and 1 layer of polypropylene burlap.

PART 3 - EXECUTION

3.1 PREPARATION OF WORK AREA

- A. Post warning signs meeting the specifications of OSHA 29 CFR 1910 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area.
- B. Prior to start of work, and as needed during the job, the Competent Person shall inspect the work site and determine whether the roofing material is non-friable asbestos containing material and will likely remain non-friable asbestos containing material during removal activities.
- C. Shut down and seal (with duct tape and 6-mil. poly sheeting) windows & roof level heating and ventilation air intakes that are in position to entrain dust or vapors from the roofing activities. Coordinate shut down of mechanical systems with Owner personnel. Where intake shutdown is

not feasible (as determined by Owner), supply and install horizontal or vertical extensions to relocate the opening of the air intake outside or above the regulated area so as not to entrain dust and vapor emissions from the roofing and re-roofing activity.

3.2 ASBESTOS-CONTAINING ROOFING MATERIAL REMOVAL

- A. All work shall be performed in accordance with OSHA Construction Industry Standard (29 CFR 1926.1101) and EPA NESPHAP Standard (40 CFR 61) and applicable State of Connecticut Regulations.
- B. A Competent Person shall be on the job at all times to ensure proper work practices throughout the project.
- C. The Contractor shall utilize methods which do not sand, grind, cut or abrade the asbestos-containing roofing material. Should roofing materials be identified as regulated asbestos-containing material additional federal and state regulations shall apply.
- D. Pick up or HEPA vacuum asbestos-containing roofing debris from non-intact roofs prior to removal of the roofing. Bag debris for disposal.
- E. Utilize wet methods to remove asbestos-containing roofing materials unless such wet methods are not feasible or will create safety hazards, as determined and documented in writing by the competent person.
- F. HEPA vacuum asbestos-containing dust and debris left after the removal of asbestos-containing roofing. Where asbestos-containing built-up roofing is removed, HEPA vacuum the roof decking following roofing removal. Bag dust and debris for disposal.
- G. Remove asbestos-containing flashings and associated cements or mastics using manual methods (such as axe, knife, or shovel). Do not saw, sand, abrade or grind these materials.
- H. Asbestos-containing roofing material shall be carried or passed to the ground by hand or lowered to the ground by crane or hoist. Do not drop or throw asbestos-containing roofing material to the ground or into the dumpster. Transfer lowered asbestos-containing roofing material to the leak tight disposal dumpster carefully so as not to disperse dust.

3.3 DISPOSAL OF ASBESTOS-CONTAINING ROOFING MATERIAL

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.
- B. Asbestos warning signs must be attached to containers used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- C. Label containers of asbestos-containing waste material or wrapped asbestos-containing waste material using warning labels specified by OSHA 29 CFR 1926.1101. Label Asbestos-

containing waste material destined for off-site transport with the name of the waste generator and the location where the waste was generated.

3.4 CONTRACTOR PERSONAL AIR MONITORING RESPONSIBILITY

- A. Conduct air sampling to assure that workers are using appropriate respiratory protection in accordance with OSHA Construction Industry Standard 1926.1101. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.
- B. Produce a written initial asbestos exposure assessment prior to starting asbestos roofing removal work in compliance with OSHA Standard 1926.1101. Keep the exposure assessment on site for review by all concerned parties.

END OF SECTION 07 08 00

PART 1 - GENERAL

1.1 SCOPE

- A. Contractor shall meet the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3, and shall have a Competent Person in control on the job site at all times during work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract. The work specified herein shall be the performance of activities to control and eliminate lead-based paint hazards. These activities include; interim controls, abatement, and encapsulation of various materials containing or covered by lead-based paint
- B. The Owner will retain the services of a certified Inspector or Inspector Risk Assessor to monitor the work.
- C. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor at no additional expense to the State. The Contractor is responsible for protecting all objects remaining in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all notifications, approvals and permits required.
 - 2. Provide, erect, and maintain all staging, planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all removed materials and debris shall become the property of the Contractor and shall be removed from the premises. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the State at no cost to the State.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on lead), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.
 - B. The lead abatement work shall include the removal of lead-based paint, encapsulation of lead-based painted surfaces or stripping of building components containing lead-based paint as specified.
-

- C. A project work order description shall be attached to each individual order identifying the scope of work and specific methods and procedures to be followed.
- D. For work that will disturb more than 6 square feet of interior lead based paint or more than 25 square feet of exterior lead based paint in a “child-occupied” structure, the following shall apply: The Contractor shall be certified under the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008. The Contractor shall follow specific work practice requirements of the RRP rule to prevent lead contamination during renovation, repair, and painting projects that disturb LBP in homes, child care facilities, and schools built before 1978. The Contractor shall have at least one “Certified Renovator” assigned to jobs where LBP is disturbed. **Note:** A child-occupied structure is one where a child under the age of 6 resides, including private residences, day care centers, and schools.

1.3 DEFINITIONS

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 soil with a durable covering such as asphalt.

Action Level - Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) calculated as an eight hour time weighted average.

Abrasive Removal - A method of abatement that entails the removal of lead-based paint using mechanical removal equipment fitted with a high efficiency particulate air (HEPA) dust collection system.

Atomic Absorption Spectrophotometer (AA) - An instrument which measures the lead content in parts per million (ppm) using a lead source lamp and a flame capable of measuring the absorbed energy and converting it to concentration.

Biological Monitoring - The analysis of a person's blood to determine the level of lead contamination in the body.

Certified Renovator – An individual who is approved to carry out remodeling work practices described in the terms of the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008.

Chemical Removal - A method of abatement which entails the removal of lead-based paint using caustic or solvent based chemical paint strippers.

Competent Person - An individual who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Complete Abatement - Abatement of all lead-based paint inside or outside a dwelling or building and reduction of any lead-contaminated dust or soil hazards. All of these strategies require

preparation; cleanup; post abatement clearance testing; record keeping; and, if applicable, reevaluation and on-going monitoring.

Deteriorated Paint - Paint that is peeling, flaking, chalking, scaling, or chipping ; paint that is over a defective or deteriorated substrate; or paint that is damaged in any manner such that a child can get paint from the damaged area. Deteriorated paint shall be classified as either in fair condition or poor condition.

Elevated blood lead level - A blood lead concentration as defined in Regulations of the State of Connecticut. A blood lead concentration equal to or greater than forty (40) micrograms per deciliter ($\mu\text{g}/\text{dl}$) as defined in OSHA Standard 1926.62.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking of substances containing lead-based paint.

Enclosure - The use of rigid, durable construction materials that are mechanically fastened to the substrate to act as a barrier between the lead-based paint and the environment.

Engineering Controls - Measures implemented at the work site to contain, control, and/or otherwise reduce worker exposure to, and environmental releases of lead dust and debris.

Evaluation - Risk assessment, paint inspection, reevaluation, investigation, clearance examination, or risk assessment screen.

Fixed Object - A unit of equipment or furniture in the work area which cannot, as determined by the State, be removed from the work area.

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

1. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
2. Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
3. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
4. Is not excluded from regulation as a hazardous waste.

Inspection - A surface-by surface investigation to determine the presence of lead-based paint (in some cases including dust and soil sampling) and a report of the results.

Inspector - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to (1) perform inspections to determine and report the presence of lead-based paint on a surface-by-surface basis through on-site testing, (2) report the findings of such an inspection, (3) collect environmental

samples for laboratory analysis, (4) perform clearance testing, and (5) document successful compliance with lead-based paint hazard control requirements or standards.

Intact Surface - A defect-free surface with no loose, peeling, chipping, or flaking paint. Painted surfaces must be free from crumbling, cracking or falling plaster and must not have holes in them. Intact surfaces must not be damaged in any way.

Interim Controls - A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include specialized cleaning, repairs, maintenance painting, temporary containment, and management and resident education programs. Interim controls also 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.

Lead Abatement Plan - A written plan that identifies the location of intact and defective lead-based paint and describes how defective lead-based surfaces will be abated and how the environment, health, and safety will be protected.

Lead-Based Paint - Paint or other surface coatings that contain lead equal to or greater than 1.0 milligrams of lead per square centimeter or greater than 0.5% by weight.

Lead-Based Paint Hazard - Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health. Lead-based paint hazards include for example, deteriorated lead-based paint, leaded dust levels above applicable standards, and bare leaded soil above applicable standards.

Lead-Based Paint Hazard Control - Activities to control and eliminate lead-based paint hazards, including interim controls, abatement, and complete abatement.

Lead-Based Paint Abatement Planner/ Designer - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 for planning and designing lead-based paint abatement projects.

Lead Consultant - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to perform as an inspector, risk assessor or planner/designer

Lead Control Area - An area where lead abatement operations are performed where airborne concentrations of lead dust exceed or can reasonably be expected to exceed the permissible exposure limit. The lead control area is isolated by physical boundaries from occupied areas to prevent the spread of lead dust, paint chips, debris, and unauthorized entry of personnel.

Lead-Free Dwelling - A lead-free dwelling contains no lead-based painted surfaces and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Lead Hazard Screen - A means of determining whether residences in good condition should have a full risk assessment. Also called a risk assessment screen.

Lead-Safe Dwelling - A lead-safe dwelling contains intact, or encapsulated lead-based paint and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Manifest - The shipping document (EPA Form 8700-22 or a comparable form required by the State or locality) used for identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transport from the point of generation to the point of treatment, storage, or disposal.

Paint Film Stabilization - The process of wet scraping, priming, and repainting surfaces coated with deteriorated lead-based paint; paint film stabilization includes cleanup and clearance.

Paint Removal - An abatement strategy that entails the removal of lead-based paint from surfaces. For lead hazard control work, this can mean using chemicals, heat guns below 700 degrees Fahrenheit, and certain contained abrasive methods. Open flame burning, open abrasive blasting, sand blasting, water blasting and extensive dry scraping are prohibited paint removal methods.

Permissible Exposure Limit (PEL) - Fifty (50) micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air averaged over an 8 hour period as determined by 29 CFR 1926.62.

Personal Monitoring - Sampling of lead concentrations within the breathing zone of a worker to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employee's work tasks.

Reevaluation - In lead hazard control work the combination of a visual assessment, and collection of environmental samples performed by a certified risk assessor to determine if a previously implemented lead-based paint hazard control measure is still effective and if the dwelling remains lead-safe.

Replacement - A strategy of abatement that entails removing components such as windows, doors, and trim that have lead painted surfaces and installing new or de-lead components free of lead-based paint.

Risk Assessment - A on-site investigation of a residential dwelling to discover any lead-based paint hazards. Risk assessments include an investigation of the age, history, management, and maintenance of the dwelling, and the number of children under age 6 and women of childbearing age who are residents; a visual assessment; limited environmental sampling (i.e., collection of dust wipe samples, soil samples, and deteriorated paint samples); and preparation of a report identifying acceptable abatement and interim control strategies based on specific conditions.

Risk Assessment Screen - A type of risk assessment performed only in buildings in good condition using fewer samples but more stringent evaluation criteria (standards) to determine lead hazards.

Inspector Risk Assessor - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health Sections 20-478-1 through 20-478-3 to (1) perform risk assessments, (2) identify acceptable abatement and interim control strategies for reducing identified lead-based paint hazards, (3) perform clearance testing and reevaluations, and (4) document the successful completion of lead-based paint hazard control activities.

Toxicity Characteristic Leaching Procedure (TCLP) - Toxicity characteristic leaching procedure utilizing EPA Test method SW-846, Method 1311 to determine whether waste can be classified as hazardous or construction waste for disposal purposes.

Visible Residue - Any paint debris, dust, or chips on surfaces within the work area where lead abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating lead dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous lead waste.

Wipe Test - A test used to determine the concentration of lead particles; used to determine whether clearance levels for lead abatement have been achieved. A wipe test assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of lead contained in that area.

X-ray Fluorescence (XRF) Analyzer - An analytical instrument which measures lead concentration of dried paint on surfaces or in a laboratory sample in milligrams per square centimeter (mg/cm²) using a radioactive source within the instrument. There are two types of XRF-analyzers commonly available which require distinct and different testing protocols - "direct read" and "spectrum analyzer".

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. State of Connecticut, Department of Public Health Regulations (DPH)

Section 19a-111-1 through 19a-111-11 - Lead Poisoning Prevention And Control Regulations.

Section 20-478-1 through 20-478-3 - Lead Licensure and Certification Regulations.
 2. State of Connecticut, Department of Environmental Protection (DEP)

Section 22a-209-1 through 22a-209-16 - Solid Waste Management Regulations.

Section 22a-449(c)-100 through 22a-449(c)110 and 22a-449(c)-11 - Hazardous Waste Management Regulations.
 3. Occupational Safety and Health Administration (OSHA)

24 CFR 35 - Lead Based Paint Poisoning Prevention.

29 CFR 1910.134 - Respiratory Protection.

29 CFR 1910.146 - Permit-Required Confined Spaces.

29 CFR 1926.21 - Safety Training.

29 CFR 1926.28 - Personal Protective Equipment.
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29 CFR 1926.55 - Gases, Vapors, Fumes, Dusts, and Mists.

29 CFR 1926.57 - Ventilation.

29 CFR 1926.59 - Hazard Communication.

29 CFR 1926.62 - Lead.

29 CFR 1926.103 - Respiratory Protection.

4. Environmental Protection Agency (EPA)

40 CFR 260 - Hazardous Waste Management Systems: General.

40 CFR 261 - Identification and Listing of Hazardous Waste.

40 CFR 262 - Generators of Hazardous Waste.

40 CFR 263 - Transporters of Hazardous Waste

40 CFR 264 - Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 268 - Land Disposal Restrictions

40 CFR 745 - Subpart F - Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards Upon Sale or Lease of Residential Property.

40 CFR 745 - Subpart L - Lead-Based Paint Activities.

40 CFR 745 - Subpart Q - State and Indian Tribal Programs.

5. Department of Transportation (DOT)

49 CFR 172 - Hazardous Materials Tables and Hazardous Materials Communications Regulations

49 CFR 178 - Shipping Container Specification

6. Department of Housing and Urban Development (HUD)

Lead-Based Paint: Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.

1.5 DOCUMENTATION

A. Submit the following documentation to ensure compliance with applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

- HEPA Vacuum Equipment
- Respirators
- Lead Specific Detergent
- Lead Encapsulating Materials
- Portable Shower Units and Hand Washing Facilities
- Chemical Removal Agents
- Neutralizers for Chemical Removal Agents
- MSDS for All Materials

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Blood Lead Level
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Lead Abatement Plan

1. Copies of all required approvals and permits for disposal and transport of hazardous lead-bearing waste including the HW identification number of the waste hauler.
 2. Documentation from a physician certifying that all employees who may be exposed to airborne lead dust in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.62. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants to which he/she may be exposed. Training certificates, licenses, respirator fit test certificate and medical records (including pre-abatement blood lead levels and medical clearance to wear a respirator) for each lead abatement worker shall be available.
 3. Documentation certifying that all employees have received training in the proper handling of materials that contain lead dust; understand the health implications and risks involved, including the illnesses possible from exposure to airborne lead dust fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of lead dust as related to health and respiratory equipment as indicated in 29 CFR 1926.62 on an initial and annual basis.
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4. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.62.
5. Qualifications of the laboratory and person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with 29 CFR 1926.62. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
6. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness and injury. Include any site specific information to address health and safety procedures unique to this project.
7. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of the continued effectiveness of the program; and other elements included in the standard.
8. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks, such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and contain information on how other contract employers will be informed about hazards their employees may encounter while working in the facility.
9. Written description of lead abatement activities planned detailing methods, equipment, engineering controls, crew size, employee job responsibilities, operating and maintenance procedures.

D. Records:

Worker Medical Records (including post-abatement blood-lead levels).
Worker Personal Air Sampling Results.
Certified Lead Waste Manifests.
TCLP Laboratory Results.

1.6 PERSONAL PROTECTION

- A. Prior to commencing work, instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment, including procedures unique to this project. A formal respiratory protection program must be implemented in accordance with 29 CFR 1926.62.
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- B. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.62. Provide appropriate respiratory protection equipment for each worker and ensure usage during potential lead dust exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements on the job whenever required for respirators in use.
- C. During the period of initial personal monitoring, personal exposure levels shall be presumed to be as specified in Table 1 with respiratory protection selected in compliance with Table 2. Following the initial personal monitoring period, select respirators using Table 2 and the personal monitoring data. Conducting a lead abatement activity without the use of a respirator is not permitted unless the personal monitoring data for that activity are all below the action level of 30 µg/cubic meter.

TABLE 1

<u>Activity</u>	<u>Presumed Exposure</u>
Removal of painted component	<50 µg/cubic meter
Manual demolition Manual scraping Manual sanding Chemical removal Manual wire brushing Encapsulation Cleanup of chips, dust, or contaminated soil Shrouded power sanding, grinding, wire brushing, or needle gun removal	<500 µg/cubic meter
Abrasive Blasting Welding Cutting, and Torch Burning	<2500 µg/cubic meter

TABLE 2

<u>Airborne Lead Dust Level</u>	<u>Required Respirator</u>
Not in excess of 500 µg/cubic meter(10xPEL)	Half-mask air-purifying respirator equipped with HEPA filters.
Not in excess of 2,500 µg/cubic meter(50xPEL)	Full face piece powered air- purifying respirator equipped with HEPA filters.

- D. Workers shall wear protective clothing in work areas where lead dust concentrations exceed permissible exposure limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing is disposed of as lead-contaminated waste. Launderable clothing must be handled and washed in accordance with 29 CFR 1926.62.
- E. Workers wearing half-mask respirators shall also wear safety glasses with side shields.
- F. Provide protective clothing impervious to caustic materials during chemical removal activity. Provide gloves of neoprene composition during chemical removal activity. Provide face shields when conducting chemical removal above eye level. Provide organic vapor cartridges in addition to HEPA cartridges when conducting chemical removal activity.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with lead shall be decontaminated or disposed of as lead waste.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints, shall be delivered to the job site with factory label indicating 6 mil.
 - B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
 - C. Protective clothing used during chemical removal operations shall be impervious to caustic materials. Gloves used during chemical removal shall be of neoprene composition with glove extenders.
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- D. Polyethylene disposable bags shall be six (6) mil and transparent in color.
- E. Detergent shall be a high phosphate content lead specific cleaning agent.
- F. Chemical paint removal agents shall not contain methylene chloride. Chemical removers used on masonry surfaces shall contain anti-stain formulation that inhibits discoloration of stone, granite, or brick. Chemical removers used on wood surfaces shall not raise or discolor the surface being abated.
- G. Chemical removal agent neutralizer shall be compatible with the substrate which they are applied to and the chemical stripper they are used in conjunction with.
- H. Encapsulants must appear on the State of Connecticut, Department of Public Health, Childhood Lead Poisoning Prevention Program Registry of Authorized Encapsulant Products. Only listed products are authorized for use in Connecticut by the Department of Public Health. Encapsulants are classified as cementitious or liquid. The project work order shall indicate the encapsulant type and location of application.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for lead removal:
- B. Air monitoring equipment shall be of the type and quantity required to monitor operations and conduct personnel exposure surveillance in accordance with OSHA requirements.
- C. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. One shower stall shall be provided for each eight workers.
- E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger.
- F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
- G. For manual scraping activities, Contractor shall supply each worker with multiple newly sharpened scrapers on a daily basis.
- H. Sanders, grinders, wire brushes and needle gun removal equipment shall be equipped with a HEPA filtered vacuum dust pick-up system.
- I. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the work area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR LEAD ABATEMENT

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the work area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1926.62 at each work area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the work area a worker decontamination enclosure consisting of equipment room, shower room, and clean room in series. Access between rooms in the worker decontamination enclosure shall be through double flap curtained openings. The shower room shall be of sufficient capacity to accommodate the lead abatement workers employed at the project. Supply warm water to showers. Provide one shower for each eight workers. The change room and wash facilities shall be equipped with suitable hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Shower and wash water shall be collected, filtered, and disposed of as specified in paragraph 3.16.
- C. Establish remote to the work area hand washing facilities. All workers shall wash prior to eating.
- D. No personnel shall be permitted to leave the work site or eat lunch unless first decontaminated by wet washing and HEPA vacuuming to remove all lead debris.
- E. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all lead debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
 - B. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of work area and occupied areas. Equip doors leading into the lead control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
 - C. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
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- D. Provide drop cloths to catch falling paint chips and chemical removal agents at interior work areas.
- E. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of work area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- F. Remove the building component or the LBP by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- G. Building components which have been removed shall be recycled where feasible.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. For dry waste place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. For liquid waste extend the end of the plastic a sufficient distance to contain the runoff and raise the edge of the sheets to trap liquid waste.
- D. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- E. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- F. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF LEAD WORK AREA FROM OCCUPIED AREAS

- A. Work area separation shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
- C. Do not impair all building exits simultaneously from any occupied building area.
- D. Shut all windows on the face of the building where lead paint removal is occurring. Seal all air conditioner intake grates and vents on the face of the building where lead paint removal is occurring.

3.6 CHEMICAL PAINT REMOVAL

- A. Apply chemical stripper in quantities and for duration's specified by manufacturer.
- B. Remove lead-based paint from surface down to bare substrate with no trace of residual pigment. Use sanding, hand scraping, and dental picks to supplement chemical methods as required to remove residual pigment.
- C. Apply neutralizer compatible with substrate and chemical agent to substrate following removal in accordance with manufacturer's instructions.
- D. Protect adjacent surfaces from damage by chemical removal methods.
- E. Maintain a portable eyewash station in the work area.

3.7 MECHANICAL PAINT REMOVAL

- A. Sanders, grinders, rotary wire brushes, or needle gun removers shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
 - B. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
 - C. Remove all lead based paint from surface down to bare substrate with no trace of residual pigment. Use chemical methods, hand scraping, and dental picks to supplement abrasive removal methods as required to remove residual pigment.
 - D. Protect adjacent surfaces from damage from abrasive removal techniques.
 - E. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to paint film stabilization or encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
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3.8 PROHIBITED PAINT REMOVAL METHODS

- A. The use of heat guns, or any blasting media, or power tool assisted grinding, sanding, cutting, or wire brushing without the use of HEPA vacuum dust collection systems to remove lead-based paint is prohibited.
- B. Welding or torch cutting of materials painted with lead-based paint is prohibited. Where cutting, welding, rivet busting, or torch cutting of materials is required, prior removal of the lead-based paint shall be performed in the affected area.
- C. Dry scraping.

3.9 SOIL REMOVAL

- A. Remove soil to a depth of 6 inches by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of paint chips are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all lead-based paint containing surfaces.
 - D. Enclosure materials shall be mechanically fastened to existing framing members. Caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.
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3.12 ENCAPSULATION

- A. Procedures for the application of encapsulation products shall be in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals.
- B. Application of encapsulants to friction or impact surfaces is prohibited.
- C. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
- D. Prior to application of encapsulants, perform the tape, X-cut tape and patch tests in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals to determine if the surface is suitable for encapsulation.
- E. Follow the encapsulant manufacturers printed application instructions.
- F. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62. This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove lead chips or dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Operational shower facilities, remote to the Lead Control Area, shall be provided by the contractor and maintained in working order such that any worker has the option of decontamination by showering. If air monitoring data by the contractor or Owner's inspector or risk assessor shows that employee exposure to airborne lead exceeds 50 µg/m³, the following mandatory showering conditions apply:
 - 1. Street clothes cannot be worn into the Lead Control Area and shall be stored in the change room. Workers shall wear disposable suits over clothing that stays on site in the change room, or disposable suits over nylon or Tyvek undergarments, or coveralls that are laundered on site.
 - 2. Street shoes cannot be worn into the Lead Control Area and shall be stored in the change room. Dedicated shoes that do not leave the Lead Control Area may be utilized. Work shoes covered by disposable booties may be utilized if the shoes are cleaned after each use and kept in the change room.
 - 3. Showers must be utilized.
- C. Ensure proper entry and exit procedures for all persons who enter and leave the Lead Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of paint chips and associated dust and debris. During clean-up, utilize rags and sponges wetted with lead-specific detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous lead-bearing waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 CLEARANCE

- A. A certified Inspector or Inspector Risk Assessor shall conduct all clearance testing inspections. Clearance dust sampling should be performed no sooner than 1 hour after completion of the final cleanup to permit the dust to settle.
- B. Visual Inspection Protocol: Visual inspection will verify the work has been completed and the area in which the work was performed does not contain visible dust.
- C. Dust Sampling Protocol: For interior abatement in facilities scheduled for reoccupancy where documentation that the work area has been adequately cleaned to meet CT DPH regulations Section 19a-111-4(e) is desired use the following testing protocol:
 - 1. Following the final visual inspection, a certified Inspector or Inspector Risk Assessor shall take lead wipe samples from the area that has undergone interior lead abatement activity.
 - 2. Following wipe analysis, if lead dust levels are in excess of the limits as set forth in the Regulations of Connecticut State Agencies, Section 19a-111-4.

The Contractor shall repeat HEPA vacuuming and wet-wiping the entire room. Repeat the testing and cleaning sequence until the standard for clearance has been achieved.

- D. For soil abatement or exterior abatement situations where documentation of soil decontamination is desired use the following testing protocol:
 - 1. For contaminated soil abatement areas a certified inspector or risk assessor shall take post-abatement soil samples (one (1) composite sample for every 500 square feet of abated soil area at randomly selected locations) and have the samples analyzed by atomic absorption for lead content. Samples shall be taken using a steel trowel to extract soil to a depth of four (4) inches. Three (3) randomly selected samples shall be taken from each 500 square foot area and the three (3) samples shall be mixed into one container for analysis.
 - 2. If any of the post-abatement soil samples exceed 2000 milligrams of lead per kilogram of soil analyze baseline soil samples to determine if the soil had a high lead level prior to the work.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous lead bearing material must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to leach lead at hazardous levels in excess of 5 mg/liter. The Contractor shall containerize and dispose of the following materials as hazardous lead waste at an EPA approved treatment, storage, and disposal facility:
1. Paint chips
 2. Paint dust
 3. Sludge from chemical stripping
 4. Dust from HEPA filters and from damp sweeping
 5. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 6. Disposable work clothes and respirator filters
 7. Contents of HEPA vacuums used on this project
 8. Polyethylene sheeting used during the course of chemical removal or heat gun removal
 9. All used duct tape
- C. Contractor shall transport the following materials generated during renovation activity to a scrap metal yard for recycling:
1. Any metal components painted with lead based paint
 2. Metallic lead components
- D. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
1. Polyethylene sheeting used in abatement activities other than chemical or heat gun removal
- E. Contractor shall collect the wash water generated by the worker shower, wash facilities, or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
1. 5 micron porosity in-line cartridge particulate filter followed by:
 2. Activated carbon filter in-line cartridge
- Hold the filtered water for testing by the State's Inspector or risk assessor prior to discharge to the sanitary sewer. The State's Inspector or risk assessor shall test the water and verify lead levels below 0.1 parts per million (ppm) and Ph between 6 and 8 prior to discharge. Water that fails the testing criteria shall be treated with sodium hydroxide, Ph adjusted, and retested. If the second test fails the 0.1 parts per million (ppm) of water test, Contractor shall filter waste water by reverse osmosis prior to testing and discharge to the sanitary sewer.
- F. All hazardous lead waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 29 CFR 1926.62 and 49 CFR 172 to identify the type of waste and the date the container was filled.
- G. The Contractor may not store containerized hazardous lead waste on the job site for in excess of 180 calendar days from the accumulation start date.
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- H. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- I. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

END OF SECTION 02 83 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the remediation of building components contaminated with mold and the abatement of hazardous materials. Remediation and abatement activities shall be performed by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of mold and hazardous materials, and the subsequent cleaning of the affected environment. Specific requirements for mold and hazardous materials remediation will be established by the Owner's Environmental Consultant. These requirements are to include, but are not limited to: containment and negative air requirements; specific work practices or methods of accomplishing remediation and establishment of the clearance standard for reoccupancy.
- B. The Owner will retain the services of an Environmental Hygienist for protection of its interests and those using the building. Monitoring will be conducted as deemed necessary.
- C. Restore all work areas and auxiliary areas utilized during remediation to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the Owner as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on mold and hazardous materials), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
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- B. A description of the scope of work will be attached to each individual project work order.
- C. The Contractor shall provide these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. In addition, the Contractor shall acquire professional training in mold abatement, and become familiar with technical and reference materials referenced in the State of Connecticut, Department of Public Health (DPH) “*CT Guidelines for Mold Abatement Contractors*”. This document refers readers to the most current version available of the *Institute for Inspection, Cleaning and Restoration Certification (IICRC), Standard and Reference Guide for Professional Mold Remediation, S520*, which provides a detailed discussion about the technical aspects of mold abatement.
- D. The Contractor shall provide these services in accordance with the guidelines established in the documents listed below, and any subsequent updated re-issues of the documents:
- Connecticut Guidelines for Mold Abatement Contractors, 2006, Connecticut Department of Public Health (DPH);
 - Standard and Reference Guide for Professional Mold Remediation, S520, December 2003, Institute for Inspection, Cleaning and Restoration Certification (IICRC) ;
 - Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health, 2006;
 - Mold Remediation in Schools and Commercial Buildings, March 2001, United States Environmental Protection Agency (US EPA);
 - Fungal Contamination in Buildings: A Guide to Recognition and Management, Health Canada, 1995;
 - The Industrial Hygienist's Guide to Indoor Air Quality Investigations, 1993 (AIHA);
 - Building Air Quality, A Guide for Building Owners and Facility Managers, 1991 (US EPA);
 - Bioaerosols: Assessment and Controls, 1999, American Conference of Governmental Industrial Hygienists (ACGIH);
 - Field Guide for the Determination of Biological Contaminants in Environmental Samples, 1996, American Industrial Hygiene Association (AIHA);
 - Complete School Guidance Document, DPH;
 - Ventilation for Acceptable Indoor Air Quality, ANSI/ASHRAE Standard 62-2001;
 - Indoor Air Quality – A Systems Approach, Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA);
 - IAQ Guidelines for Occupied Buildings Under Construction, SMACNA.
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1.3 DEFINITIONS

Accessible - A space easily accessed, and which can be entered or seen without demolition.

Competent Person - An individual who is capable of identifying existing and predictable mold and/or other hazardous materials in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.

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

DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.

DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.

Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking.

Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.

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

Exposed - Open to view.

Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.

Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.

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

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

- Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
- Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
- Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
- Is not excluded from regulation as a hazardous waste.

HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.

Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area.

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

Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.

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

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

Visible Residue - Any debris, dust, or chips on surfaces within the work area where abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous waste.

Wipe Test - A test used to determine the concentration of dust particles; used to determine whether clearance levels for mold and/or hazardous materials abatement have been achieved. A wipe test

assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of mold and/or hazardous materials contained in that area.

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

1.4 REFERENCES

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

1. Occupational Safety and Health Administration (OSHA)

29 CFR 1926.21 - Safety Training and Education.

29 CFR 1926.32 - Definitions.

29 CFR 1926.51 - Sanitation.

29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.

29 CFR 1926.59 - Hazard Communication.

29 CFR 1926.200 - Accident Prevention Signs and Tags.

29 CFR 1926.417 - Lockout and Tagging of Circuits.

2. American National Standards Institute (ANSI)

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

ANSI Z88.2 - Respiratory Protection.

3. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.

ASTM E 96 - Water Vapor Transmission of Materials.

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

4. Underwriters Laboratories, Inc. (UL)

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

1.5 DOCUMENTATION

A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

- Local Exhaust Equipment
- Respirators
- Pressure Differential Automatic Recording Instrument
- Polyethylene Sheeting
- Airless Sprayers
- MSDS for All Materials Delivered to the Site
- Biocides
- Cleaning Chemicals
- Encapsulating Materials
- HEPA Vacuum Equipment

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Mold and/or Other Hazardous Materials Abatement Plan

D. Records:

- Sign-in/out Logs
- Personal Air Sampling Results
- Waste Shipment Records
- Pressure Differential Recording Data
- NPE Inspection and Smoke Test Logs

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134. Provide appropriate respiratory protection for each worker and ensure usage during potential mold and/or other hazardous materials exposure whenever engineering and work practice controls are not adequate to prevent atmospheric contamination at the job site. Select respirators from among those approved as being acceptable for protection by the National Institute for Occupational Safety and Health (NIOSH). Provide an adequate supply of filter elements on the job whenever required for respirators in use.
- B. Provide dermal and respiratory protection for all workers to wear in the Work Areas. The selection of personal protective equipment depends on the anticipated exposure, types of microbial and/or hazardous materials contamination, activities to be completed and potential hazards of chemicals that may be used in the remediation process. Personal protective equipment can consist of: respirator, eye protection, disposable impervious coveralls (including hood and booties) with elastic wrists and ankles, foot protection, hand protection, head protection, and hearing protection. In accordance with 29 CFR 1910.32, each worker shall be provided with the necessary personal protective equipment to reduce the risk of exposure to chemical, physical, or biological hazards.
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1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with mold and/or hazardous waste shall be decontaminated or disposed of appropriately.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating six (6) mil.
- B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- C. Scrub brushes, disposable sponges and towels as appropriate for the work.
- D. Biocides shall be specific for the intended purpose of cleaning mold contamination from building components or materials.
- E. Containers must be impermeable and shall be both air and watertight.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for the work.
 - B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
 - C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
 - D. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Work Area.
 - E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
 - F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
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- G. Removal equipment (including, but not limited to sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust pick-up system.
- H. Other materials such as lumber, nails and hardware necessary to construct and dismantle the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR REMEDIATION

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the Work Area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1910.37 (egress means and exits) and OSHA 29 CFR 1910.145 (biological hazards, caution, and dangers) at each Work Area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.
- D. Containerize waste material removed daily. Do not allow debris to remain on the floor. Fill disposal containers as removal proceeds, seal filled containers.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the Work Area hand washing facilities. All workers shall wash prior to eating.
- C. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all mold and/or other hazardous material debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
 - B. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
 - C. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.
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- D. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- E. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the Work Areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of Work Area and occupied areas. Equip doors leading into the control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
- F. As indicated in the individual work order, occupied areas and/or building space not within control areas may be separated from abatement Work Areas by means of airtight barriers.
- G. Cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- H. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- I. Remove the building component by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- J. Building components which have been removed shall be recycled where feasible.
- K. Conspicuously label and maintain emergency and fire exits satisfactory to the Owner.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
- B. Place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- D. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- E. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF WORK AREA FROM OCCUPIED AREAS

- A. Work Area separation shall be as indicated in the individual work order.
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- B. As indicated in the individual work order, occupied areas and/or building space shall be separated from Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- C. Do not impair all building exits simultaneously from any occupied building area. Where normal exits have been blocked by the abatement work, provide temporary exit signs directing building occupants to the nearest available exit location.
- D. Shut all windows on the face of the building where abatement is occurring. Seal all air conditioner intake grates and vents on the face of the building where abatement is occurring.
- E. As indicated in the individual work order, create a pressure differential between the Work Area and occupied areas by the use of acceptable pressure differential equipment.

3.6 MECHANICAL MOLD AND/OR HAZARDOUS MATERIAL REMOVAL

- A. Remove building components or materials in accordance with the specific description of work to be accomplished. Methods for component removal shall be appropriate for the work and are to be performed in a manner to minimize the risk of contamination in other areas of the building.
- B. Removal equipment (including, but not limited to, sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
- C. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
- D. As indicated in the individual work order, remove all mold and/or hazardous materials from surface down to bare substrate with no trace of residual material. Use wet wiping, wet sponging, wet scraping, and wet brushing (with a nylon brush) to supplement abrasive removal methods as required to remove residual material (wire brushes are not permitted).
- E. Protect adjacent surfaces from damage from abrasive removal techniques.
- F. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
- G. During removal, spray the work area with water using airless spray equipment capable of providing a "mist" application to reduce airborne dust. Hose length shall be sufficient to reach all of the work area. Do not "flood" the area with hose type water supply equipment with the potential to create water releases from the work area.

3.7 PROHIBITED MOLD AND/OR HAZARDOUS MATERIAL REMOVAL METHODS

- A. Dry scraping.
- B. Wire brushes.

3.8 CLEANING OF CONTAMINATED BUILDING COMPONENTS OR MATERIALS

- A. Clean building components or materials in accordance with the specific description of work provided by the Owner Environmental Hygienist. Methods for cleaning shall be appropriate for the work to be performed.
- B. All surfaces from which mold and/or other hazardous materials have been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). Cleaning shall also include the use of HEPA filtered vacuum equipment
- C. Cleaning shall proceed in a manner such that dislodged materials will be collected on rags or by the HEPA vacuum equipment. Methods that agitate contamination are not permitted.
- D. Biological agents shall be used in strict accordance with the manufacturer's printed instructions. Biological agents may only be applied to clean or cleaned surfaces.

3.9 SOIL REMOVAL

- A. As indicated in the individual work order, remove soil to the indicated depth by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of hazardous materials are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose hazardous materials and appropriately wash down the surface. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all mold and/or hazardous-material containing surfaces.
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- D. Enclosure materials shall be mechanically fastened to existing framing members. As indicated in the individual work order, caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.

3.12 ENCAPSULATION

- A. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose mold and/or hazardous materials. Repair all substrate damage with an appropriate patching material.
- B. Follow the encapsulant manufacturers printed application instructions.
- C. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f). This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Ensure proper entry and exit procedures for all persons who enter and leave the Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of mold and/or hazardous material dust and debris. During clean-up, utilize rags and sponges wetted with detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 POST-REMEDIATION ASSESSMENT

- A. Specific requirements prior to reoccupancy of the remediated area will be established by the Owner Environmental Consultant.
 - B. The post-remediation assessment will include a visual inspection, bioaerosol sampling and ~~dust~~ wipe sampling. The extent of sampling and specific cleanliness requirements for each project will be established prior to remediation. Sampling requirements will be consistent with the level of contamination remediated.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management or other designated agency having jurisdiction over solid waste disposal and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to contain hazardous materials. The Contractor shall containerize and dispose of the following materials as hazardous waste at an EPA approved treatment, storage, and disposal facility:
 - 1. Dust from HEPA filters and from damp sweeping
 - 2. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 - 3. Disposable work clothes and respirator filters
 - 4. Contents of HEPA vacuums used on this project
 - 5. All used duct tape
- C. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
 - 1. Polyethylene sheeting used in abatement activities
- D. Contractor shall collect the wash water generated by the wash facilities or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
 - 1. 5 micron porosity in-line cartridge particulate filter followed by:
 - 2. Activated carbon filter in-line cartridge
- E. All hazardous waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 49 CFR 172 to identify the type of waste and the date the container was filled.
- F. The Contractor may not store containerized hazardous waste on the job site for in excess of 180 calendar days from the accumulation start date.
- G. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- H. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

3.18 REMOVAL OF HAZARDOUS MATERIALS

- A. Removal of fluorescent fixture components may require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.

- B. Removal of other materials identified during mold remediation work shall be accomplished in accordance with all applicable Federal and State regulations.

END OF SECTION 02 85 00

**EXHIBIT B-1
ASBESTOS**

HazPro								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
ASBESTOS REMOVAL								
AR-001	CLEAN-UP OF ACM DEBRIS BY HEPA VACUUMING		SF	\$0.15				
AR-002	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS (FULL CONTAINMENT - < 6" DIA)		LF	\$1.50				
AR-003	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - 6" - 12" DIA)		LF	\$2.50				
AR-004	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - >12" DIA)		LF	\$3.50				
AR-005	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - FIRST 25)		EA	\$25.00				
AR-006	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY BETWEEN 25-50)		EA	\$20.00				
AR-007	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY IN EXCESS OF 50)		EA	\$18.00				
AR-008	REMOVAL OF EQUIPMENT INSULATION		SF	\$3.50				
AR-009	REMOVAL OF HVAC DUCT INSULATION		SF	\$3.50				
AR-010	REMOVAL OF HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$2.50				
AR-011	REMOVAL OF RESILIENT FLOORING INCLUDING MASTIC		SF	\$1.00				
AR-012	REMOVAL OF RESILIENT FLOORING (NO MASTIC)		SF	\$0.75				
AR-013	REMOVAL OF SPRAYED ON FIREPROOFING		SF	\$3.00				
AR-014	REMOVAL OF PLASTER CEILING SYSTEM (INCLUDING BLACK IRON AND METAL LATH)		SF	\$2.50				
AR-015	REMOVAL OF ACOUSTIC OR METAL PAN CEILING SYSTEM (INCLUDING GRID)		SF	\$1.50				
AR-016	REMOVAL OF ACOUSTIC CEILING PANELS (CLEAN GRID FOR REUSE)		SF	\$1.25				
AR-017	REMOVAL OF ACOUSTIC PLASTER FINISH MATERIAL (SCRAPE)		SF	\$2.25				
AR-018	PATCH AND/OR SEAL DAMAGED INSULATION		SF	\$1.00				
AR-019	REMOVAL OF CONTAMINATED SOIL (2" DEPTH)		SF	\$1.35				
AR-020	REMOVAL OF TRANSITE MATERIAL		SF	\$0.85				
AR-021	REMOVAL OF ROOFING OR ROOF FLASHING MATERIAL		SF	\$1.25				
AR-022	REMOVAL OF UNDERGROUND PIPE OR PIPE INSULATION (INCLUDING HAND EXCAVATION)		LF	\$10.00				
AR-023	REMOVAL OF CARPET OVER RESILIENT FLOORING		SF	\$0.75				
AR-024	REMOVAL OF WALL BASE AND MASTIC		LF	\$0.75				
AR-025	REMOVAL OF DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$0.75				
AR-026	REMOVAL OF CMU WALL		SF	\$1.65				
AR-027	PREP WORK AREA		SF	\$1.00				
AR-028	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$1.00				
AR-029	SELECTIVE DEMOLITION TO ACCESS CONCEALED ACM		SF	\$1.00				
AR-030	REMOVAL OF FLOOR LEVELING MATERIAL		SF	\$0.75				

EXHIBIT B-1 ASBESTOS

HazPro								
MISCELLANEOUS ITEMS								
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$240.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$240.00				
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA					
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY					
MI-007	DISPOSAL OF ACM WASTE (INCLUDES TRANSPORTATION)	COST+10%	CY	\$55.00				
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY	\$400.00				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY	\$25.00				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	60				
MI-013	FIXED SCAFFOLDING	COST+10%	SF					
MI-014	EXCAVATION TO EXPOSE UNDERGROUND PIPE	COST+10%	CY					
MI-015	PROJECT NOTIFICATION AND FEES	COST+10%	EA					
MI-016	PROJECT BOND (3% OF CONTRACT)	COST+10%	EA					
REWORK ITEMS								
RW-001	REINSULATE PIPE 1" THICK FIBERGLAS ASJ		SF	\$2.50				
RW-002	REINSULATE PIPE 1 1/2" THICK FIBERGLAS ASJ		SF	\$3.00				
RW-003	REINSULATE PIPE 2" THICK FIBERGLAS ASJ		SF	\$4.00				
RW-004	REINSULATE PIPE FITTING 1" THICK FIBERGLAS ASJ		EA	\$4.00				
RW-005	REINSULATE PIPE FITTING 1 1/2" THICK FIBERGLAS ASJ		EA	\$5.00				
RW-006	REINSULATE PIPE FITTING 2" THICK FIBERGLAS ASJ		EA	\$6.00				
RW-007	REINSULATE MECHANICAL EQUIPMENT 3 PCF, 2" THICK		SF	\$3.00				
RW-008	REINSULATE HVAC DUCT SYSTEM (FLEXIBLE DUCT WRAP) 0.75 PCF, 1 1/2" THICK		SF	\$1.60				
RW-009	REINSULATE HVAC DUCT SYSTEM (RIGID BOARD) 3 PCF, 1 1/2" THICK		SF	\$2.75				
RW-010	REPLACE HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$8.00				
ESCALATION FACTORS								
EF-1	WORK SURFACES 10-20' HIGH		1.15					
EF-2	WORK SURFACES OVER 20' HIGH		1.30					
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)		1.30					
EF-4	EMERGENCY RESPONSE (<24 HOUR)		1.30					
EF-5	CONFINED SPACE WORK		1.15					
EF-6	REMOVAL OF MULTIPLE LAYERS OF RESILIENT FLOORING (EACH ADDITIONAL LAYER)		1.50					
EF-7	REMOVAL ON LIVE STEAM SYSTEM		1.25					
EF-8	EXTERIOR WORK		1.30					
			WORK ORDER TOTAL					

EXHIBIT B-2 LEAD

HazPro								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	Unit Cost \$0.00				
	<u>PAINT REMOVAL</u>							
SP-001	REMOVE LOOSE PAINT FROM WALLS OR CEILINGS (WET SCRAPING OR BRUSHING)		SF	\$0.75				
SP-002	STRIP PAINT FROM FLAT SURFACES		SF	\$2.80				
SP-003	STRIP PAINT FROM COLUMNS AND STRUCTURAL FRAMING MEMBERS		SF	\$3.50				
SP-004	STRIP PAINT FROM STAIR TREADS, RISERS AND STRINGERS		SF	\$5.00				
SP-005	STRIP PAINT FROM TRIM		LF	\$2.60				
SP-006	STRIP PAINT FROM DOORS (DOOR OPENING SIZE)		SF	\$4.35				
SP-007	STRIP PAINT FROM WINDOW (WINDOW SIZE)		SF	\$7.00				
SP-008	STRIP PAINT FROM RADIATOR		SF	\$8.75				
SP-009	STRIP PAINT FROM HANDRAIL		LF	\$7.00				
SP-010	STRIP PAINT FROM PIPING		SF	\$6.10				
SP-011	CLEAN-UP OF MATERIALS CONTAINING LEAD (DIRT, BUILDING DEBRIS, ETC.)		CF	\$2.50				
SP-012	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$0.50				
SP-013	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$1.00				
SP-014	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$3.50				
	<u>COMPONENT REPLACEMENT</u>							
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.35				
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.25				
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.50				
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.35				
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$0.85				
CR-006	REMOVE RADIATOR		SF	\$0.70				
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$7.00				
	<u>MISCELLANEOUS ITEMS</u>							
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$240.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$240.00				
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF	\$0.85				
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF	\$2.50				
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY	\$400.00				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY	\$25.00				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	\$60.00				

**EXHIBIT B-2
LEAD**

HazPro								
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF	\$0.35				
MI-012	ENCAPSULATION UTILIZING HEAVY BODIED REINFORCED COATING SYSTEM		SF	\$0.85				
MI-013	FIXED SCAFFOLDING	COST+10%	SF					
<u>REWORK ITEMS</u>								
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF	\$0.70				
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA					
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA					
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA					
RW-015	PAINT FLAT SURFACES (PRIMER + FINISH COAT)		SF	\$0.20				
RW-016	PAINT COLUMNS AND STRUCTURAL FRAMING MEMBERS (PRIMER + FINISH COAT)		SF	\$2.75				
RW-017	PAINT STAIR TREADS, RISERS AND STRINGERS (PRIMER + FINISH COAT)		SF	\$2.75				
RW-018	PAINT HANDRAIL (PRIMER + FINISH COAT)		LF	\$0.20				
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF	\$0.20				
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF	\$0.70				
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF	\$1.75				
RW-022	PAINT RADIATOR (PRIMER + FINISH COAT)		SF	\$2.75				
RW-023	PAINT PIPING (PRIMER + FINISH COAT)		LF	\$0.20				
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF	\$2.75				
RW-025	ASPHALT PAVING		SF	\$2.75				
<u>ESCALATION FACTORS</u>								
EF-1	WORK SURFACES 10-20' HIGH			1.15				
EF-2	WORK SURFACES OVER 20' HIGH			1.30				
EF-3	NON-REGULAR WORK HOURS (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30				
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30				
EF-5	CONFINED SPACE WORK			1.15				
EF-8	EXTERIOR WORK			1.30				
				WORK ORDER TOTAL				

EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS

HazPro								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
MOLD REMEDIATION								
IAQ-001	CLEANING AND HEPA VACUUMING OF CONTAMINATED COMPONENTS OR MATERIALS		SF	\$0.50				
IAQ-002	REMOVAL OF CONTAMINATED PIPE INSULATION		LF	\$0.50				
IAQ-003	REMOVAL OF CONTAMINATED BUILDING INSULATION		SF	\$0.50				
IAQ-004	REMOVAL OF CONTAMINATED HVAC DUCT OR EQUIPMENT INSULATION		SF	\$0.50				
IAQ-005	REMOVAL OF CONTAMINATED CARPET		SF	\$0.75				
IAQ-006	REMOVAL OF CONTAMINATED DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$0.75				
IAQ-007	REMOVAL OF CONTAMINATED PLASTER		SF	\$1.75				
IAQ-008	REMOVAL OF CONTAMINATED SUSPENDED CEILING PANELS		SF	\$0.50				
IAQ-009	PREP WORK AREA		SF	\$0.25				
IAQ-010	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$0.85				
IAQ-011	SELECTIVE DEMOLITION TO ACCESS CONTAMINATED COMPONENTS OR MATERIALS		SF	\$1.00				
OTHER HAZARDOUS MATERIALS ABATEMENT								
HM-001	REMOVE LOOSE PCB CONTAMINATED CAULK (WET SCRAPING OR BRUSHING)		LF	\$2.50				
HM-002	REMOVE PCB CONTAMINATED CAULK AND 6 INCHES OF BUILDING MATERIALS		LF	\$10.00				
HM-003	REMOVE PCB CONTAMINATED CAULK AND 12 INCHES OF BUILDING MATERIALS		LF	\$15.00				
HM-004	REMOVE INTACT PCB CONTAMINATED CAULK WITH NO REMOVAL OF BUILDING MATERIALS		LF	\$5.00				
HM-005	STRIP PAINT FROM FLAT SURFACES		SF	\$2.80				
HM-006	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$0.50				
HM-007	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$1.00				
HM-008	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$3.50				
COMPONENT REPLACEMENT								
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.35				
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.25				
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.50				
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.35				
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$0.85				
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$7.00				

**EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS**

HazPro									
MISCELLANEOUS ITEMS									
MI-001	MOBILIZATION (1 PER WORK AREA)		EA		\$240.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA		\$240.00				
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF		\$0.85				
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF		\$2.50				
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA						
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY						
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY		\$400.00				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY		\$25.00				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR		\$60.00				
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF		\$0.35				
MI-013	FIXED SCAFFOLDING	COST+10%	SF						
REWORK ITEMS									
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF		\$0.70				
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA						
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA						
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA						
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF		\$0.20				
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF		\$0.70				
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF		\$1.75				
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF		\$2.75				
ESCALATION FACTORS									
EF-1	WORK SURFACES 10-20' HIGH			1.15					
EF-2	WORK SURFACES OVER 20' HIGH			1.30					
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30					
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30					
EF-5	CONFINED SPACE WORK			1.15					
EF-8	EXTERIOR WORK			1.30					
					WORK ORDER TOTAL				

EXHIBIT C

SEEC FORM 11

NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION AND SOLICITATION BAN

This notice is provided under the authority of Connecticut General Statutes 9-612(g)(2), as amended by P.A. 07-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined below):

Campaign Contribution and Solicitation Ban

No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee;

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

Duty to Inform

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

Penalties for Violations

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—\$2000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of \$2000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or \$5000 in fines, or both.

Contract Consequences

Contributions made or solicited in violation of the above prohibitions may result, in the case of a state contractor, in the contract being voided.

Contributions made or solicited in violation of the above prohibitions, in the case of a prospective state contractor, shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State will not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information and the entire text of P.A 07-1 may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to “State Contractor Contribution Ban.”

Definitions:

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision

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exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan or a loan to an individual for other than commercial purposes.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

CONTRACT

10PSX0238

Between

THE STATE OF CONNECTICUT

Acting by its

DEPARTMENT OF ADMINISTRATIVE SERVICES

AND

Manafort Brothers Inc.

FOR

ASBESTOS, LEAD AND MOLD ABATEMENT SERVICES

December 17, 2010

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This Contract (the “Contract”) is made as of the 17th day of December, in the year 2010, by and between, Manafort Brothers Inc. (the “Contractor,”) with a principal place of business at 414 New Britain Ave., acting by Michael Tarsi, its Vice President of Engineering and the State of Connecticut, Department of Administrative Services (“DAS”), with a principal place of business at 165 Capitol Ave, Hartford, Connecticut 06106-1659, acting by Paul Greco, its Contract Specialist, in accordance with Sections 4a-2 and 4a-51 of the Connecticut General Statutes.

Now therefore, in consideration of these presents, and for other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the Contractor and the State agree as follows:

1. Definitions. Unless otherwise indicated, the following terms shall have the following corresponding definitions:
 - (a) Cancellation: An end to the Contract effected pursuant to a right which the Contract creates due to a breach.
 - (b) Claims: All actions, suits, claims, demands, investigations and proceedings of any kind, open, pending or threatened, whether mature, unmatured, contingent, known or unknown, at law or in equity, in any forum.
 - (c) Client Agency: State of Connecticut, CT Department of Public Works, Using Agency Government Agency, Not for Profit Agency
 - (d) Contract: The agreement, as of its effective date, between the Proposer and the State for any or all Goods or Services at the Proposal price.
 - (e) Contractor: A person or entity who submits a Proposal and who executes a Contract.
 - (f) Contractor Parties: A Contractor’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.
 - (g) Day: All calendar days other than Saturdays, Sundays and days designated as national or State of Connecticut holidays upon which banks in Connecticut are closed.
 - (h) Expiration: An end to the Contract due to the completion in full of the mutual performances of the parties or due to the Contract’s term being completed.
 - (i) Force Majeure: Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has occurred, including, but not limited to, labor troubles unrelated to the Contractor, failure of or inadequate permanent power, unavoidable casualties, fire not caused by the Contractor, extraordinary weather conditions, disasters, riots, acts of God, insurrection or war.
 - (j) Goods: For purposes of the Contract, all things which are movable at the time that the Contract is effective and which include, without limiting this definition, supplies, materials and equipment, as specified in the Request for Proposals and set forth in Exhibit A.
 - (k) Goods or Services: Goods, Services or both, as specified in the Request for Proposals and set forth in Exhibit A.

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- (l) Proposal: A Proposer’s submittal in response to a Request for Proposals.
 - (m) Proposer Parties: A Proposer’s members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Proposer is in privity of oral or written contract and the Proposer intends for such other person or entity to Perform under the Contract in any capacity.
 - (n) Records: All working papers and such other information and materials as may have been accumulated by the Contractor in performing the Contract, including but not limited to, documents, data, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.
 - (o) Request for Proposals: A State request inviting proposals for Goods or Services. This Contract shall be governed by the statutes, regulations and procedures of the State of Connecticut, Department of Administrative Services.
 - (p) Services: The performance of labor or work, as specified in the Request for Proposals and set forth in Exhibit A.
 - (q) State: The State of Connecticut, including DAS, the Client Agency and any office, department, board, council, commission, institution or other agency of the State.
 - (r) Termination: An end to the Contract effected pursuant to a right which the Contract creates, other than for a breach.
 - (s) Title: all ownership, title, licenses, rights and interest, including, but not limited to, perpetual use, of and to the Goods or Services.
2. Term of Contract; Contract Extension. The Contract will be in effect from February 1, 2011 through January 31, 2016. The parties may extend this Contract, prior to Termination, Expiration or Cancellation, one or more times for a combined total period not to exceed the complete length of the original term, but only in accordance with the section in this Contract concerning Contract Amendments.
3. Description of Goods or Services. The Contractor shall perform as set forth in Exhibit A. For purposes of this Contract, to perform and the performance in Exhibit A is referred to as “Perform” and the “Performance.”
4. Price Schedule, Payment Terms and Billing, and Price Adjustments.
- (a) Price Schedule: Price Schedule under this Contract is set forth in Exhibit B.
 - (b) Payment Terms and Billing: Payment shall be made only after the Client Agency receives and accepts the Goods or Services and after it receives a properly completed invoice. Unless otherwise specified in the Contract, payment for all accepted Goods or Services shall be due within forty-five (45) days after acceptance of the Goods or Services, or thirty (30) days if the Contractor is a certified small contractor or minority business enterprise as defined in Conn. Gen. Stat. § 4a-60g. The Contractor shall submit an invoice to the Client Agency for the Performance. The invoice shall include detailed information for Goods or Services, delivered and performed, as applicable, and accepted. Any late payment charges shall be calculated in accordance with the Connecticut General Statutes.

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- (c) If applicable to and during the term of this Contract, the Price Schedule will be adjusted to reflect any increase in the minimum wage rate that may occur, as mandated by state law. The Price Schedule will not be adjusted until the Contractor provides documentation, in the form of certified payroll or other documentation acceptable to the State, substantiating the increase in minimum wage rate.
- (d) Price Adjustments: Prices for the Goods or Services listed in Exhibit B shall remain unchanged for twelve (12) months following the effective date of the Contract. The Contractor shall have the right to request a price adjustment only during the thirty (30) days immediately preceding the annual anniversary dates of the effective date of the Contract during the term of the Contract. During this thirty (30) day period, the Contractor may submit a request in writing to DAS for a price adjustment that is consistent with and relative to price changes originating with and compelled by manufacturer and/or market trends and which changes are outside of the Contractor's control. The Contractor must fully document its request, attaching to the request, without limitation, such manufacturer and market data, as support the requested adjustment. DAS may, in its sole discretion, approve or disapprove the requested adjustment, in whole or in part. Any approved adjustment shall be final and shall remain unchanged until the next annual anniversary date of the effective date of the Contract.

The Contractor shall submit all requests in accordance with Section #35. Notice. A request made to the Client Agency shall not be valid and the parties shall treat it as if the Contractor had not made the request at all. A request made to the Client Agency shall not be considered timely and shall not toll or extend the running of the thirty (30) days. The right of the Contractor to request a particular price adjustment shall lapse upon the expiration of the applicable thirty (30) days. If the Contractor fails to make a timely request, then the price shall remain unchanged from the previous year and shall continue through the next succeeding twelve (12) months and until the second annual anniversary of the effective date of the Contract. If approved, price adjustments shall become effective ten (10) days after the date of the approval. The Contractor shall honor any purchase orders issued prior to the effective date of the approval at the price in effect at the time of the issuance of the purchase order.

5. Rejected Items; Abandonment.

- (a) The Contractor may deliver, cause to be delivered, or, in any other way, bring or cause to be brought, to any State premises or other destination, Goods, as samples or otherwise, and other supplies, materials, equipment or other tangible personal property. The State may, by written notice and in accordance with the terms and conditions of the Contract, direct the Contractor to remove any or all such Goods ("the "Rejected Goods") and any or all other supplies, materials, equipment or other tangible personal property (collectively, the "Contractor Property") from and out of State premises and any other location which the State manages, leases or controls. The Contractor shall remove the Rejected Goods and the Contractor Property in accordance with the terms and conditions of the written notice. Failure to remove the Rejected Goods or the Contractor Property in accordance with the terms and conditions of the written notice shall mean, for itself and all Contractor Parties and Proposer Parties, that:

- (1) they have voluntarily, intentionally, unconditionally, unequivocally and absolutely abandoned and left unclaimed the Rejected Goods and Contractor Property and relinquished all ownership, title, licenses, rights, possession and interest of, in and to (collectively, "Title") the Rejected Goods and Contractor Property with the specific and express intent of (A) terminating all of their Title to the Rejected Goods and Contractor Property, (B) vesting Title to the Rejected Goods and Contractor Property in the State of Connecticut and (C) not ever reclaiming Title or any future rights of any type in and to the Rejected Goods and Contractor Property;

- (2) there is no ignorance, inadvertence or unawareness to mitigate against the intent to abandon the Rejected Goods or Contractor Property;
 - (3) they vest authority, without any further act required on their part or the State's part, in the Client Agency and the State to use or dispose of the Rejected Goods and Contractor Property, in the State's sole discretion, as if the Rejected Goods and Contractor Property were the State's own property and in accordance with law, without incurring any liability or obligation to the Contractor or any other party;
 - (4) if the State incurs any costs or expenses in connection with disposing of the Rejected Goods and Contractor Property, including, but not limited to, advertising, moving or storing the Rejected Goods and Contractor Property, auction and other activities, the State shall invoice the Contractor for all such cost and expenses and the Contractor shall reimburse the State no later than thirty (30) days after the date of invoice; and
 - (5) they do remise, release and forever discharge the State and its employees, departments, commissions, boards, bureaus, agencies, instrumentalities or political subdivisions and their respective successors, heirs, executors and assigns (collectively, the "State and Its Agents") of and from all Claims which they and their respective successors or assigns, jointly or severally, ever had, now have or will have against the State and Its Agents arising from the use or disposition of the Rejected Goods and Contractor Property.
- (b) The Contractor shall secure from each Contractor Party or Proposer Party, as appropriate, such document or instrument as necessary or appropriate as will vest in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to give full effect to all of the terms and conditions of this section. The Contractor shall provide, no later than fifteen (15) days after receiving a request from the State, such information as the State may require to evidence, in the State's sole determination, compliance with this section.
6. **Order and Delivery.** The Contract shall bind the Contractor to furnish and deliver the Goods or Services in accordance with Exhibit A and at the prices set forth in Exhibit B. Subject to the sections in this Contract concerning Force Majeure, Termination, Cancellation Expiration and Open Market Purchases, the Contract shall bind the Client Agency to order the Goods or Services from the Contractor, and to pay for the accepted Goods or Services in accordance with Exhibit B.
 7. **Contract Amendments.** No amendment to or modification or other alteration of the Contract, including extensions, shall be valid or binding upon the parties unless made in writing, signed by the parties and, if applicable, approved by the Connecticut Attorney General.
 8. **Assignment.** The Contractor shall not assign any of its rights or obligations under the Contract, voluntarily or otherwise, in any manner without the prior written consent of DAS. DAS may void any purported assignment in violation of this section and declare the Contractor in breach of Contract. Any Cancellation by DAS for a breach is without prejudice to DAS's or the State's rights or possible Claims.
 9. **Termination, Cancellation and Expiration.**
 - (a) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may Terminate the Contract whenever DAS makes a written determination that such Termination is in the best interests of the State. DAS shall notify the Contractor in writing of Termination pursuant to this section, which notice shall specify the effective date of Termination and the extent to which the Contractor must complete Performance under the

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Contract prior to such date. The Contractor is not entitled to receive and the State is not obligated to tender to the Contractor any payments or reimbursements for anticipated or lost profits.

- (b) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may, after making a written determination that the Contractor has breached the Contract, Cancel the Contract in accordance with the provisions in the Breach section of this Contract.
- (c) DAS shall send the notice of Termination or Cancellation via certified mail, return receipt requested, to the Contractor at the most current address which the Contractor has furnished to DAS for purposes of correspondence, or by hand delivery. Upon receiving such notice from DAS, the Contractor shall immediately discontinue all services affected in accordance with the notice, undertake all commercially reasonable efforts to mitigate any losses or damages, and deliver to the Client Agency all Records. The Records are deemed to be the property of the Client Agency and the Contractor shall deliver them to the Client Agency no later than thirty (30) days after the Termination, Cancellation or Expiration of the Contract or fifteen (15) days after the Contractor receives a written request from DAS for the Records. The Contractor shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, ASCII or .TXT.
- (d) Upon receipt of a written notice of Termination or Cancellation from DAS, the Contractor shall cease operations as directed by DAS in the notice, and take all actions that are necessary or appropriate, or that DAS may reasonably direct, for the protection and preservation of the Goods and any other property. Except for any work which DAS directs the Contractor to Perform in the notice prior to the effective date of Termination or Cancellation, and except as otherwise provided in the notice, the Contractor shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments.
- (e) To the extent that the Client Agency has issued a purchase order prior to the notice of Termination and the Contractor has begun Performance against that purchase order in good faith, the Client Agency shall, within forty-five (45) days of having received an invoice from the Contractor for such Performance, pay or reimburse the Contractor for its Performance rendered and accepted by the Client Agency in accordance with Exhibit A. In addition, the Client Agency shall also pay or reimburse the Contractor for all actual and reasonable costs incurred after Termination in completing those portions of the Performance which the notice required the Contractor to complete. Upon and as requested by the Client Agency or DAS and after consent of the Contractor's subcontractors, if any, and if their consent is required, the Contractor shall (1) assign to the Client Agency, or any replacement contractor which the Client Agency or DAS designates, all subcontracts, purchase orders and other commitments, (2) deliver to the Client Agency all Records and other information pertaining to its Performance, and (3) remove from State premises, whether leased or owned, all such equipment, waste material and rubbish related to its Performance, all as the Client Agency or DAS may request.
- (f) For breach or violation of any of the provisions in the section concerning Representations and Warranties, DAS may Cancel the Contract in accordance with its terms and revoke any consents to assignments given as if the assignments had never been requested or consented to, without liability to the Contractor or Contractor Parties or any third party.
- (g) Upon Termination, Cancellation or Expiration of the Contract, all rights and obligations shall be null and void, so that no party shall have any further rights or obligations to any other party, except with respect to the sections which survive Termination, Cancellation or Expiration of the Contract. All representations, warranties, agreements and rights of the parties under the Contract shall survive such Termination, Cancellation or Expiration to the

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extent not otherwise limited in the Contract and without each one of them having to be specifically mentioned in the Contract.

(h) Termination or Cancellation of the Contract pursuant to this section shall not be deemed to be a breach of contract by DAS.

10. Cost Modifications. The parties may agree to a reduction in the cost of the Contract at any time during which the Contract is in effect. Without intending to impose a limitation on the nature of the reduction, the reduction may be to hourly, staffing or unit costs, the total cost of the Contract or the reduction may take such other form as the State deems to be necessary or appropriate.

11. Breach. If either party breaches the Contract in any respect, the non-breaching party shall provide written notice of such breach to the breaching party and afford the breaching party an opportunity to cure the breach within ten (10) days from the date that the breaching party receives such notice. Any other time provided for in the notice shall trump such ten (10) days. Such right to cure period shall be extended if the non-breaching party is satisfied that the breaching party is making a good faith effort to cure but the nature of the breach is such that it cannot be cured within the right to cure period. The notice may include an effective Contract Cancellation date if the breach is not cured by the stated date and, unless otherwise modified by the non-breaching party in writing prior to the Cancellation date, no further action shall be required of any party to effect the Cancellation as of the stated date. If the notice does not set forth an effective Contract Cancellation date, then the non-breaching party may Cancel the Contract by giving the breaching party no less than twenty four (24) hours' prior written notice. If DAS believes that the Contractor has not performed according to the Contract, the Client Agency may withhold payment in whole or in part pending resolution of the Performance issue, provided that DAS notifies the Contractor in writing prior to the date that the payment would have been due in accordance with Exhibit B.

12. Waiver.

(a) No waiver of any breach of the Contract shall be interpreted or deemed to be a waiver of any other or subsequent breach. All remedies afforded in the Contract shall be taken and construed as cumulative, that is, in addition to every other remedy provided in the Contract or at law or in equity.

(b) A party's failure to insist on strict performance of any provision of the Contract shall only be deemed to be a waiver of rights and remedies concerning that specific instance of Performance and shall not be deemed to be a waiver of any subsequent rights, remedies or breach.

13. Open Market Purchases. Except to the extent that the Contractor is performing within a right to cure period, failure of the Contractor to Perform within the time specified in the Contract, or failure to replace rejected or substandard Goods or fulfill unperformed Services when so requested and as the Contract provides or allows, constitutes a breach of the Contract and as a remedy for such breach, such failure shall constitute authority for DAS, if it deems it to be necessary or appropriate in its sole discretion, to Cancel the Contract and/or to purchase on the open market, Goods or Services to replace those which have been rejected, not delivered, or not performed. The Client Agency shall invoice the Contractor for all such purchases to the extent that they exceed the costs and expenses in Exhibit B and the Contractor shall pay the Client Agency's invoice immediately after receiving the invoice. If DAS does not Cancel the Contract, the Client Agency will deduct such open market purchases from the Contract quantities. However, if the Client Agency deems it to be in the best interest of the State, the Client Agency may accept and use the Goods or Services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Client Agency.

14. Purchase Orders.

- (a) The Contract itself is not an authorization for the Contractor to ship Goods or begin Performance in any way. The Contractor may begin Performance only after it has received a duly issued purchase order against the Contract for Performance.
- (b) The Client Agency shall issue a purchase order against the Contract directly to the Contractor and to no other party.
- (c) All purchase orders shall be in written or electronic form, bear the Contract number (if any) and comply with all other State and Client Agency requirements, particularly the Client Agency's requirements concerning procurement. Purchase orders issued in compliance with such requirements shall be deemed to be duly issued.
- (d) A Contractor making delivery without a duly issued purchase order in accordance with this section does so at the Contractor's own risk.
- (e) The Client Agency may, in its sole discretion, deliver to the Contractor any or all duly issued purchase orders via electronic means only, such that the Client Agency shall not have any additional obligation to deliver to the Contractor a "hard copy" of the purchase order or a copy bearing any hand-written signature or other "original" marking.

15. Indemnification.

- (a) The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or Contractor Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Proposal or any Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance of the Contract.
- (b) The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any Contractor Parties. The State shall give the Contractor reasonable notice of any such Claims.
- (c) The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the Claims.
- (d) The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall name the State as an additional insured on the policy and shall provide a Certificate of Insurance to DAS, except that the Contractor shall not provide a copy to DAS if the Client Agency is the State Department of Transportation, prior to the effective date of the Contract. The

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Contractor shall not begin Performance until the delivery of the Certificate of Insurance to DAS. Upon request of the Client Agency, the Contractor shall provide a Certificate of Insurance to the Client Agency.

- (e) The rights provided in this section for the benefit of the State shall encompass the recovery of attorneys' and other professionals' fees expended in pursuing a Claim against a third party.
- (f) This section shall survive the Termination, Cancellation or Expiration of the Contract, and shall not be limited by reason of any insurance coverage.

16. Forum and Choice of Law. The Contract shall be deemed to have been made in the City of Hartford, State of Connecticut. Both Parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

17. Contractor Guaranties. Contractor shall:

- (a) Perform fully under the Contract;
- (b) Guarantee the Goods or Services against defective material or workmanship and to repair any damage or marring occasioned in transit or, at the Client Agency's option, replace them;
- (c) Furnish adequate protection from damage for all work and to repair damage of any kind, for which its workers are responsible, to the premises, Goods, the Contractor's work or that of Contractor Parties;
- (d) With respect to the provision of Services, pay for all permits, licenses and fees and give all required or appropriate notices;
- (e) Adhere to all Contractual provisions ensuring the confidentiality of Records that the Contractor has access to and are exempt from disclosure under the State's Freedom of Information Act or other applicable law; and
- (f) Neither disclaim, exclude nor modify the implied warranties of fitness for a particular purpose or of merchantability.

18. Implied Warranties. DAS does not disclaim, exclude or modify the implied warranty of fitness for a particular purpose or the warranty of merchantability.

19. Goods, Standards and Appurtenances. Any Goods delivered must be standard new Goods, latest model, except as otherwise specifically stated in the Contract. Remanufactured, refurbished or reconditioned equipment may be accepted but only to the extent allowed under the Contract. Where the Contract does not specifically list or describe any part or nominal appurtenances of equipment for the Goods, it shall be understood that the Contractor shall deliver such parts and appurtenances as are usually provided with the manufacturer's stock model.

20. Delivery.

- (a) Delivery shall be made as ordered and in accordance with the Contract. Unless otherwise specified in the Contract, delivery shall be to a loading dock or receiving platform. The Contractor or Contractor's shipping designee shall be responsible for removal of Goods from the carrier and placement on the Client Agency loading dock or receiving platform. The receiving personnel of the Client Agency are not required to assist in this process. The decision of DAS as to reasonable compliance with delivery terms shall be final and binding. The burden of proof of proper receipt of the order shall rest with the Contractor.
- (b) In order for the time of delivery to be extended, the Client Agency must first approve a request for extension from the time specified in the Contract, such extension applying only to the particular item or shipment.
- (c) Goods shall be securely and properly packed for shipment, according to accepted standard commercial practice, without extra charge for packing cases, baling or sacks. The containers shall remain the property of the Client Agency unless otherwise stated in the Proposal.
- (d) All risk of loss and damage to the Goods transfers to the Client Agency upon Title vesting in the Client Agency.

21. Goods Inspection. The Client Agency shall determine the manner and prescribe the inspection of all Goods and the tests of all samples submitted to determine whether they comply with all of the specifications in the Contract. If any Goods fail in any way to meet the specifications in the Contract, the Client Agency may, in its sole discretion, either reject it and owe nothing or accept it and pay for it on an adjusted price basis, depending on the degree to which the Goods meet the specifications. Any decision pertaining to any such failure or rejection shall be final and binding.

22. Setoff. In addition to all other remedies that DAS may have, the State, in its sole discretion, may setoff (1) any costs or expenses that the State incurs resulting from the Contractor's unexcused nonperformance under the Contract and under any other agreement or arrangement that the Contractor has with the State and (2) any other amounts that are due or may become due from the State to the Contractor, against amounts otherwise due or that may become due to the Contractor under the Contract, or under any other agreement or arrangement that the Contractor has with the State. The State's right of setoff shall not be deemed to be the State's exclusive remedy for the Contractor's or Contractor Parties' breach of the Contract, all of which shall survive any setoffs by the State.

23. Force Majeure. The State and the Contractor shall not be excused from their obligation to Perform in accordance with the Contract except in the case of Force Majeure events and as otherwise provided for in the Contract. In the case of any such exception, the nonperforming party shall give immediate written notice to the other, explaining the cause and probable duration of any such nonperformance.

24. Advertising. The Contractor shall not refer to sales to the State for advertising or promotional purposes, including, but not limited to, posting any material or data on the Internet, without DAS's prior written approval.

25. Americans With Disabilities Act. The Contractor shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Contract. DAS may Cancel the Contract if the Contractor fails to comply with the Act.

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26. Representations and Warranties. The Contractor, and the Proposer, as appropriate, represent and warrant to DAS for itself, Contractor Parties and Proposer Parties, as appropriate, that:

- (a) if they are entities, they are duly and validly existing under the laws of their respective states of organization and authorized to conduct business in the State of Connecticut in the manner contemplated by the Contract. Further, as appropriate, they have taken all necessary action to authorize the execution, delivery and Performance of the Proposal and the Contract and have the power and authority to execute, deliver and Perform their obligations under the Contract;
- (b) they will comply with all applicable State and Federal laws and municipal ordinances in satisfying their obligations to the State under and pursuant to the Contract, including, but not limited to (1) Connecticut General Statutes Title 1, Chapter 10, concerning the State's Codes of Ethics and (2) Title 4a concerning State purchasing, including, but not limited to 22a-194a concerning the use of polystyrene foam;
- (c) the execution, delivery and Performance of the Contract will not violate, be in conflict with, result in a breach of or constitute (with or without due notice and/or lapse of time) a default under any of the following, as applicable: (1) any provision of law; (2) any order of any court or the State; or (3) any indenture, agreement, document or other instrument to which it is a party or by which it may be bound;
- (d) they are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any governmental entity;
- (e) as applicable, they have not, within the three years preceding the Contract, in any of their current or former jobs, been convicted of, or had a civil judgment rendered against them or against any person who would Perform under the Contract, for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a transaction or contract with any governmental entity. This includes, but is not limited to, violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (f) they are not presently indicted for or otherwise criminally or civilly charged by any governmental entity with commission of any of the offenses listed above;
- (g) they have not within the three years preceding the Contract had one or more contracts with any governmental entity Cancelled;
- (h) they have not employed or retained any entity or person, other than a bona fide employee working solely for them, to solicit or secure the Contract and that they have not paid or agreed to pay any entity or person, other than a bona fide employee working solely for them, any fee, commission, percentage, brokerage fee, gifts, or any other consideration contingent upon or resulting from the award or making of the Contract or any assignments made in accordance with the terms of the Contract;
- (i) to the best of their knowledge, there are no Claims involving the Proposer, Proposer Parties, Contractor or Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract;
- (j) they shall disclose, to the best of their knowledge, to DAS in writing any Claims involving them that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully

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under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. For purposes of the Contractor's obligation to disclose any Claims to DAS, the ten (10) Days in the section of this Contract concerning Disclosure of Contractor Parties Litigation shall run consecutively with the ten (10) Days provided for in this representation and warranty;

- (k) their participation in the Request for Proposals process is not a conflict of interest or a breach of ethics under the provisions of Title 1, Chapter 10 of the Connecticut General Statutes concerning the State's Code of Ethics;
- (l) the Proposal was not made in connection or concert with any other person, entity or Proposer, including any affiliate (as defined in the Tangible Personal Property section of this Contract) of the Proposer, submitting a Proposal for the same Goods or Services, and is in all respects fair and without collusion or fraud;
- (m) they are able to Perform under the Contract using their own resources or the resources of a party who is not a Proposer;
- (n) the Contractor shall obtain in a written contract all of the representations and warranties in this section from any Contractor Parties and to require that provision to be included in any contracts and purchase orders with Contractor Parties;
- (o) they have paid all applicable workers' compensation second injury fund assessments concerning all previous work done in Connecticut;
- (p) they have a record of compliance with Occupational Health and Safety Administration regulations without any unabated, willful or serious violations;
- (q) they owe no unemployment compensation contributions;
- (r) they are not delinquent in the payment of any taxes owed, or, that they have filed a sales tax security bond, and they have, if and as applicable, filed for motor carrier road tax stickers and have paid all outstanding road taxes;
- (s) all of their vehicles have current registrations and, unless such vehicles are no longer in service, they shall not allow any such registrations to lapse;
- (t) each Contractor Party has vested in the Contractor plenary authority to bind the Contractor Parties and Proposer Parties to the full extent necessary or appropriate to ensure full compliance with and Performance in accordance with all of the terms and conditions of the Contract and that all appropriate parties shall also provide to DAS, no later than fifteen (15) days after receiving a request from DAS, such information as DAS may require to evidence, in DAS's sole determination, compliance with this section;
- (u) except to the extent modified or abrogated in the Contract, all Title shall pass to the Client Agency upon complete installation, testing and acceptance of the Goods or Services and payment by the Client Agency;
- (v) if either party Terminates or Cancels the Contract, for any reason, they shall relinquish to the Client Agency all Title to the Goods delivered, accepted and paid for (except to the extent any invoiced amount is disputed) by the Client Agency;
- (w) with regard to third party products provided with the Goods, they shall transfer all licenses which they are permitted to transfer in accordance with the applicable third party license;

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- (x) they shall not copyright, register, distribute or claim any rights in or to the Goods after the effective date of the Contract without DAS's prior written consent;
- (y) they either own or have the authority to use all Title of and to the Goods, and that such Title is not the subject of any encumbrances, liens or claims of ownership by any third party;
- (z) the Goods do not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (aa) the Client Agency's use of any Goods shall not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (bb) if they procure any Goods, they shall sub-license such Goods and that the Client Agency shall be afforded the full benefits of any manufacturer or subcontractor licenses for the use of the Goods; and
- (cc) they shall assign or otherwise transfer to the Client Agency, or afford the Client Agency the full benefits of any manufacturer's warranty for the Goods, to the extent that such warranties are assignable or otherwise transferable to the Client Agency.

27. Representations and Warranties Concerning Motor Vehicles. If in the course of Performance or in any other way related to the Contract the Contractor at any time uses or operates "motor vehicles," as that term is defined by Conn. Gen. Stat. §14-1(53) (including, but not limited to such services as snow plowing, sanding, hauling or delivery of materials, freight or merchandise, or the transportation of passengers), the Contractor, and the Proposer, as appropriate, represent and warrant for itself, the Contractor Parties and Proposer Parties, as appropriate, that:

- (a) It is the owner of record or lessee of record of each such motor vehicle used in the Performance of the Contract, and each such motor vehicle is duly registered with the Connecticut Department of Motor Vehicles ("ConnDMV") in accordance with the provisions of Chapter 246 of the Connecticut General Statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV, for any reason or cause. If such motor vehicle is not registered with ConnDMV, then it shall be duly registered with another state or commonwealth in accordance with such other state's or commonwealth's applicable statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by such other state or commonwealth for any reason or cause.
- (b) Each such motor vehicle shall be fully insured in accordance with the provisions of Sections 14-12b, 14-112 and 38a-371 of the Connecticut General Statutes, as amended, in the amounts required by the said sections or in such higher amounts as have been specified by ConnDMV as a condition for the award of the Contract, or in accordance with all substantially similar provisions imposed by the law of the jurisdiction where the motor vehicle is registered.
- (c) Each Contractor Party who uses or operates a motor vehicle at any time in the Performance of the Contract shall have and maintain a motor vehicle operator's license or commercial driver's license of the appropriate class for the motor vehicle being used or operated. Each such license shall bear the endorsement or endorsements required by the provisions of Section 14-36a of the Connecticut General Statutes, as amended, to operate such motor vehicle, or required by substantially similar provisions imposed by the law of another jurisdiction in which the operator is licensed to operate such motor vehicle. The license shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV or such other jurisdiction for any reason or cause.

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- (d) Each motor vehicle shall be in full compliance with all of the terms and conditions of all provisions of the Connecticut General Statutes and regulations, or those of the jurisdiction where the motor vehicle is registered, pertaining to the mechanical condition, equipment, marking and operation of motor vehicles of such type, class and weight, including, but not limited to, requirements for motor vehicles having a gross vehicle weight rating of 18,000 pounds or more or motor vehicles otherwise described by the provisions of Conn. Gen. Stat. § 14-163c(a) and all applicable provisions of the Federal Motor Carrier Safety Regulations, as set forth in Title 49, Parts 382 to 399, inclusive, of the Code of Federal Regulations.
28. Disclosure of Contractor Parties Litigation. The Contractor shall require that all Contractor Parties, as appropriate, disclose to the Contractor, to the best of their knowledge, any Claims involving the Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. Disclosure shall be in writing.
29. Entirety of Contract. The Contract is the entire agreement between the parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the parties, whether written or oral. The Contract has been entered into after full investigation, neither party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Contract.
30. Exhibits. All exhibits referred to in and attached to this Contract are incorporated in this Contract by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.
31. Executive Orders. The Contract is subject to the provisions of Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms, Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17th, 2006, concerning procurement of cleaning products and services, Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.
32. Non-discrimination. References in this section to "contract" shall mean this Contract and references to "contractor" shall mean the Contractor.
- (a) The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes:
- (1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut. The contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it

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- is shown by such contractor that such disability prevents performance of the work involved;
- (2) the contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission;
 - (3) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;
 - (4) the contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f;
 - (5) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor as relate to the provisions of this section and section 46a-56.
- (b) If the contract is a public works contract, the contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project.
- (c) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons:
- (1) Who are active in the daily affairs of the enterprise,
 - (2) who have the power to direct the management and policies of the enterprise and
 - (3) who are members of a minority, as such term is defined in subsection (a) of section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements.
- (d) Determination of the contractor's good faith efforts shall include but shall not be limited to the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (e) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.
- (f) The contractor shall include the provisions of sections (a) and (b) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted

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by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(g) The following subsections are set forth here as required by section 4a-60a of the Connecticut General Statutes:

(1) The contractor agrees and warrants that in the performance of the contract such contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or of the state of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

(2) the contractor agrees to provide each labor union or representative of workers with which such contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(3) the contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said commission pursuant to section 46a-56;

(4) the contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the contractor which relate to the provisions of this section and section 46a-56.

(h) The contractor shall include the provisions of section (g) above in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the state and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the commission. The contractor shall take such action with respect to any such subcontract or purchase order as the commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with section 46a-56; provided, if such contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the commission, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(i) For the purposes of this entire Non-Discrimination section, "contract" includes any extension or modification of the contract, "contractor" includes any successors or assigns of the contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders. For the purposes of this section, "contract" does not include a contract where each contractor is

1. a political subdivision of the state, including, but not limited to, a municipality,

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2. a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120,
 3. any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267,
 4. the federal government,
 5. a foreign government, or
 6. an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).
33. Tangible Personal Property. The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:
- (a) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
 - (b) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
 - (c) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
 - (d) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
 - (e) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of the Act.

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34. **Whistleblowing.** This Agreement is subject to the provisions of §4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Agreement. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.
35. **Notice.** All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Contract (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is placed in the U.S. mail, first class and postage pre-paid, return receipt requested or placed with a recognized, overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

If to DAS:

State of Connecticut, Department of Administrative Services
165 Capitol Ave, 5th Floor South
Hartford, CT 06106-1659
Attention: Paul Greco

If to the Contractor:

Manafort Brothers Inc.
414 New Britain Ave.
Plainville, CT 06062
Attn. Justin A. Manafort , Sr.

36. **Insurance.** Before commencing Performance, the Contractor shall obtain and maintain at its own cost and expense for the duration of the Contract, the following insurance as described in (a) through (h) below. Contractor shall assume any and all deductibles in the described insurance policies. The Contractor's insurers shall have no right of recovery or subrogation against the State and the described Contractor's insurance shall be primary coverage. Any failure to comply with the claim reporting provisions of the policy shall not affect coverage provided to the State.

(a) Reserved

- (b) Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. Coverage shall include, Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the

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general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit.

- (c) **Automobile Liability:** \$1,000,000 combined single limit per accident for bodily injury. Coverage extends to owned, hired and non-owned automobiles. If the vendor/contractor does not own an automobile, but one is used in the execution of the contract, then only hired and non-owned coverage is required. If a vehicle is not used in the execution of the contract then automobile coverage is not required.
- (d) **Workers' Compensation and Employers Liability:** Statutory coverage in compliance with the Compensation laws of the State of Connecticut. Coverage shall include Employer's Liability with minimum limits of \$100,000 each accident, \$500,000 Disease – Policy limit, \$100,000 each employee.
- (e) Reserved
- (f) **Umbrella Liability:** Excess/umbrella liability insurance may be included to meet minimum requirements. Umbrella coverage must indicate the existing underlying insurance coverage.
- (g) **Claims Made:** Not acceptable with the exception of Professional Liability when specified.
- (h) Reserved
- 37. **Headings.** The headings given to the sections in the Contract are inserted only for convenience and are in no way to be construed as part of the Contract or as a limitation of the scope of the particular section to which the heading refers.
- 38. **Number and Gender.** Whenever the context so requires, the plural or singular shall include each other and the use of any gender shall include all genders.
- 39. **Parties.** To the extent that any Contractor Party or Proposer Party is to participate or Perform in any way, directly or indirectly in connection with the Proposal or the Contract, any reference in the Request for Proposals and the Contract to "Contractor" or "Proposer" shall also be deemed to include "Contractor Parties" or "Proposer Parties," respectively, as if such reference had originally specifically included "Contractor Parties" or "Proposer Parties," since it is the parties' intent for the terms "Contractor Parties" and "Proposer Parties" to be vested with the same respective rights and obligations as the terms "Contractor" and "Proposer."
- 40. **Contractor Changes.** The Contractor shall notify DAS in writing no later than ten (10) Days from the effective date of any change in:
 - a) its certificate of incorporation or other organizational document;
 - b) more than a controlling interest in the ownership of the Contractor; or
 - c) the individual(s) in charge of the Performance.

This change shall not relieve the Contractor of any responsibility for the accuracy and completeness of the Performance. DAS, after receiving written notice by the Contractor of any such change, may require such agreements, releases and other instruments evidencing, to DAS's satisfaction, that any individuals retiring or otherwise separating from the Contractor have been compensated in full or that provision has been made for compensation in full, for all work performed under terms of the Contract. The Contractor shall deliver such documents to DAS in accordance with the terms of DAS's written request. DAS may also require, and the Contractor shall deliver, a financial statement showing that solvency of the

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Contractor is maintained. The death of any Contractor Party, as applicable, shall not release the Contractor from the obligation to Perform under the Contract; the surviving Contractor Parties, as appropriate, must continue to Perform under the Contract until Performance is fully completed.

41. Further Assurances. The parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other party which are not inconsistent with the provisions of this Contract and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Contract, in order to give full effect to the Contract and to carry out the intent of the Contract.
42. Audit and Inspection of Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents. Requests for any audit or inspection shall be in writing, at least ten (10) Days prior to the requested date. All audits and inspections shall be at the State's expense. The State may request an audit or inspection at any time during the Contract term and for three (3) years from Termination, Cancellation or Expiration of the Contract. The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.
43. Background Checks. The State may require that the Contractor and Contractor Parties undergo criminal background checks as provided for in the State of Connecticut Department of Public Safety Administration and Operations Manual or such other State document as governs procedures for background checks. The Contractor and Contractor Parties shall cooperate fully as necessary or reasonably requested with the State and its agents in connection with such background checks.
44. Continued Performance. The Contractor and Contractor Parties shall continue to Perform their obligations under the Contract while any dispute concerning the Contract is being resolved.
45. Working and Labor Synergies. The Contractor shall be responsible for maintaining a tranquil working relationship between the Contractor work force, the Contractor Parties and their work force, State employees, and any other contractors present at the work site. The Contractor shall quickly resolve all labor disputes which result from the Contractor's or Contractor Parties' presence at the work site, or other action under their control. Labor disputes shall not be deemed to be sufficient cause to allow the Contractor to make any claim for additional compensation for cost, expenses or any other loss or damage, nor shall those disputes be deemed to be sufficient reason to relieve the Contractor from any of its obligations under the Contract.
46. Contractor Responsibility.
 - (a) The Contractor shall be responsible for the entire Performance under the Contract regardless of whether the Contractor itself performs. The Contractor shall be the sole point of contact concerning the management of the Contract, including Performance and payment issues. The Contractor is solely and completely responsible for adherence by the Contractor Parties to all applicable provisions of the Contract.
 - (b) The Contractor shall exercise all reasonable care to avoid damage to the State's property or to property being made ready for the State's use, and to all property adjacent to any work site. The Contractor shall promptly report any damage, regardless of cause, to the State.

47. Severability. If any term or provision of the Contract or its application to any person, entity or circumstance shall, to any extent, be held to be invalid or unenforceable, the remainder of the Contract or the application of such term or provision shall not be affected as to persons, entities or circumstances other than those as to whom or to which it is held to be invalid or unenforceable. Each remaining term and provision of the Contract shall be valid and enforced to the fullest extent possible by law.
48. Confidential Information. The State will afford due regard to the Proposer's and Contractor's request for the protection of proprietary or confidential information which the State receives. However, all materials associated with the Proposal and the Contract are subject to the terms of the Connecticut Freedom of Information Act ("FOIA") and all corresponding rules, regulations and interpretations. In making such a request, the Proposer or Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the vendor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Proposer or Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract, especially including the Proposal, the Records and the specifications, conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Proposer or Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking said documentation as CONFIDENTIAL, DAS will endeavor to keep said information confidential to the extent permitted by law. DAS, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. The Contractor shall have the burden of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall DAS or the State have any liability for the disclosure of any documents or information in its possession which the State or DAS believes are required to be disclosed pursuant to the FOIA or other requirements of law.
49. Interpretation. The Contract contains numerous references to statutes and regulations. For purposes of interpretation, conflict resolution and otherwise, the content of those statutes and regulations shall govern over the content of the reference in the Contract to those statutes and regulations.
50. Cross-Default.
- (a) If the Contractor or Contractor Parties breach, default or in any way fail to Perform satisfactorily under the Contract, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat any such event as a breach, default or failure to perform under any or all other agreements or arrangements ("Other Agreements") that the Contractor or Contractor Parties have with DAS. Accordingly, DAS may then exercise at its sole option any and all of its rights or remedies provided for in the Contract or Other Agreements, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS, as if the Contractor or Contractor Parties had suffered a breach, default or failure to perform under the Other Agreements.
- (b) If the Contractor or Contractor Parties breach, default or in any way fail to perform satisfactorily under any or all Other Agreements with DAS or the State, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat

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any such event as a breach, default or failure to Perform under the Contract. Accordingly, the State may then exercise at its sole option any and all of its rights or remedies provided for in the Other Agreements or the Contract, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS or the State, as if the Contractor or Contractor Parties had suffered a breach, default or failure to Perform under the Contract.

51. Disclosure of Records. The Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this section, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.
52. Summary of State Ethics Laws. Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.
53. Sovereign Immunity. The parties acknowledge and agree that nothing in the Request for Proposals or the Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.
54. Time of the Essence. Time is of the essence with respect to all provisions of this Agreement that specify a time for performance; provided, however, that this provision shall not be construed to limit or deprive a party of the benefits of any grace or use period allowed in this Agreement.
55. Reserved
56. Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Ban. With regard to a State contract as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this submission in response to the State's solicitation expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising prospective state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See Exhibit C, SEEC Form 11.
57. Health Care Portability and Accountability Act of 1996 ("HIPAA").
 - (a) If the Contractor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business

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Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

- (b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and
- (c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter “Department”) is a “covered entity” as that term is defined in 45 C.F.R. § 160.103; and
- (d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of “individually identifiable health information,” as that term is defined in 45 C.F.R. § 160.103; and
- (e) The Contractor is a “business associate” of the Department, as that term is defined in 45 C.F.R. § 160.103; and
- (f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.
- (g) Definitions.
 - (1) “Breach” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1)).’
 - (2) “Business Associate” shall mean the Contractor.
 - (3) “Covered Entity” shall mean the Department of the State of Connecticut named on page 1 of this Contract.
 - (4) “Designated Record Set” shall have the same meaning as the term “designated record set” in 45 C.F.R. § 164.501.
 - (5) “Electronic Health Record” shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5)).
 - (6) “Individual” shall have the same meaning as the term “individual” in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).
 - (7) “Privacy Rule” shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and part 164, subparts A and E.
 - (8) “Protected Health Information” or “PHI” shall have the same meaning as the term “protected health information” in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.
 - (9) “Required by Law” shall have the same meaning as the term “required by law” in 45 C.F.R. § 164.103.

- (10) “Secretary” shall mean the Secretary of the Department of Health and Human Services or his designee.
- (11) “More stringent” shall have the same meaning as the term “more stringent” in 45 C.F.R. § 160.202.
- (12) “This Section of the Contract” refers to the HIPAA Provisions stated herein, in their entirety.
- (13) “Security Incident” shall have the same meaning as the term “security incident” in 45 C.F.R. § 164.304.
- (14) “Security Rule” shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and part 164, subpart A and C.
- (15) “Unsecured protected health information” shall have the same meaning as the term as defined in § 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

- (1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.
- (2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.
- (3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.
- (4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.
- (5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.
- (6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.
- (7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.
- (8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

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- (9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.
- (10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees that at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.
- (12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.
- (13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.
- (14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.
- (15) Business Associate agrees that it shall not directly or indirectly receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations
- (16) Obligations in the Event of a Breach
 - (A) The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. § 17932(b) and the provisions of this section of the contract.
 - (B) Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of

HITECH (42 U.S.C. § 17932(g)). A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.

(C) The Business Associate agrees to include in the notification to the Covered Entity at least the following information:

1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.
2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).
3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.
4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.
5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and contact information for said official.

(D) Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

(E) Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

- (1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions.

- (A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.
- (B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.
- (C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

- (1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.
- (2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.
- (3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

- (1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.
- (2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

- (A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or
 - (B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or
 - (C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.
- (3) Effect of Termination.
- (A) Except as provided in (1)(2) above, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.
 - (B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

- (1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.
- (2) Amendment. The Parties agree to take such action as is necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.
- (3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.
- (4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.
- (5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.
- (6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's

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own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

- (7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

58. Encryption of Data.

- (a) Contractor and Contractor Parties, at its own expense, shall keep and maintain in an encrypted state any and all electronically stored data now or hereafter in its possession or control located on non-state owned or managed devices that the State, in accordance with its existing state policies classifies as confidential or restricted. The method of encryption shall be compliant with the State of Connecticut Enterprise Wide Technical Architecture (EWTA). This shall be a continuing obligation for compliance with the EWTA standard as it may be amended or supplemented from time to time.
- (b) In the event of a breach of security or loss of State data, the Contractor and Contractor Parties shall notify the Client Agency which owns the data, DAS, the Connecticut Department of Information Technology and the Connecticut Office of the Attorney General as soon as practical but no later than 24 hours after the discovery or reason to believe such breach or loss that such data has been compromised through breach or loss.

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IN WITNESS WHEREOF, the parties have executed this Contract by their duly authorized representatives with full knowledge of and agreement with its terms and conditions.

Manafort Brothers, Inc.

STATE OF CONNECTICUT
Department of Administrative Services

By: _____

By: _____

Michael Tarsi

Carol Wilson

Print or Type Name

Print or Type Name

Title: V.P. of Engineering

Title: DAS Procurement Director

Date: _____

Date:

Contract 10PSX0238 Exhibit A

Asbestos, Lead, Mold, and Other Hazardous
Materials Abatement and Removal Services for
Department of Public Works, All Using State
Agencies and Political Sub Divisions, Schools and
Not for Profits

CT Department of Administrative Services



Scope of Services

This Contract is for Asbestos, Lead, Mold, and Other Hazardous Materials Abatement and Removal work detailed in Exhibit(s) A for a contract term of five (5) years.

It is understood that this contract is subject to statutory authorization and available funding. The State will only enter into contract with Contractor(s) who will be required to assume full responsibility for services provided by the contract. This contract is for the abatement of asbestos-containing materials, lead, mold, and other hazardous materials by persons who are knowledgeable, qualified and trained in the removal, treatment, handling and disposal of asbestos-containing material, lead, mold, and other hazardous materials and the subsequent cleaning of the affected environment. Certain services provided under these contracts may require firms and individuals to be certified or licensed by governmental or industry trade organizations.

- There may be situations in which services and equipment go beyond the actual requirements listed. In such situations the State may approve work, and accept and pay for the added services and equipment. Unit rates must be approved by the using agency prior to any additional work.
- Certain projects, depending on size, scope, and complexity, may be bid separately at the discretion of the using agency.

All work to be performed by the contractor shall comply with, as a minimum, the Connecticut State Building Code as adopted pursuant to CGS 29-252, as amended; and the Connecticut Fire Safety Code as adopted pursuant to CGS 29-292, as amended.

The year of the code governing the Contractors work shall be the current code which has been adopted as per the above Connecticut General Statutes on the start date of the project.

Product and/or Service Specifications

Service Specifications

Required Service Specifications can be found in Exhibits A-1, A-2, A-3, A-4, A-5 and A-6.

Pricing

Awarded pricing is found in Exhibit B-1, B-2, B-3 and Exhibit B-4

This is a firm fixed price contract. No additional markup will be allowed to perform any work listed in the Exhibit B proposal sheets with rental equipment, subcontracted labor, or materials under this contract. Markup for materials and outside services not listed will not exceed 10%.

The contractor shall not charge for equipment items not listed in the Proposal Schedule without prior written approval from the Using Agency and the CT DAS Procurement Services Representative.

Requests for approval of supplemental unit prices shall be made in writing to the Using Agency and the CT DAS Procurement Services Representative and shall be accompanied by such additional information as the Using Agency may require to enable evaluation of the contractor's request.

If applicable, the contractor(s) shall be required to pay for all permits, licenses, and fees, and to give all notices and comply with all laws, ordinances, rules and regulations of the State, city or town in which any required services are to be performed. The using Agency will reimburse the contractor for obtained permits or license costs provided that the contractor provide a receipt, proof and copy of the required permit or license to the DPW office designation referenced below or appropriate Using agency designation. No mark-up to these fees will be allowed.

Environmental Analyst, CT DPW Technical Services, 165 Capitol Ave., Hartford, CT 06106, Rm. # 275.

Price Schedule Exhibits B1, B2 and B3

Awarded Prices represent unit cost for commodities and/or services per unit of measure performed per project type. The rental rates for all equipment are to be computed at the job site only. Pricing will not include trip, travel time, delivery time charges, or any other miscellaneous charges pertaining to the rental of equipment.

The using agency's representatives will monitor the use of all labor and equipment. If the using agency's representatives determine that equipment is not being utilized, such equipment will not be paid for while remaining idle.

The using agency **will not pay** for tools of the trade which includes but are not limited to the following:

- reusable hand and small tools (e.g., screwdrivers, hammers, garden hoses)
- reusable protective clothing
- computer equipment and software including all costs relating to use of such equipment

- communication equipment, including but not limited to regular and cellular telephones, including all costs relating to the use of such equipment
- consumable supplies/equipment
- cost of routine cleaning of equipment
- monitoring equipment, e.g., PIDs and LEL/O2 Meters

Exhibit B-4

Utilized for item offering(s) other than scheduled items found on schedules B1, B2 & B3

Mandatory Extension to State, Government, Municipal or Not for Profit Entities

Awarded Contractors are required to offer and extend this contract (including same pricing, terms and conditions) to Political Sub-Divisions of the State (Towns and Municipalities), Schools, and Not-For-Profit Organizations.

When a Political Sub-Division, School, and/or Not-For-Profit Organization utilizes this contract all references to the “State” are hereby replaced with the Name of the Using Sub-Division, School, or the name of the Not-For-Profit Organization.

Motor Carrier Safety Review

If the performance of the Contract requires the use and operation of any commercial motor vehicle, as defined in section 14-1 of the Connecticut General Statutes, or other motor vehicle with a gross vehicle weight rating (GVWR) of 18,000 pounds or more, each proposer will be the subject of an evaluation, conducted by the Connecticut Department of Motor Vehicles (CTDMV) of its motor carrier safety fitness. The primary factor in the evaluation is the current SAFESTAT score, calculated by the U.S. Federal Motor Carrier Safety Administration (FMCSA) in accordance with the provisions of Title 49, Section 385.1, et seq., of the Code of Federal Regulations.

To be deemed qualified, the proposer must have an overall SAFESTAT category rating of “D” or better, on the date of evaluation. In addition, the proposer’s driver and vehicle out-of-service rates will be consulted. The rates are determined by the number of out-of-service violations cited to the motor carrier in the course of all official, reported vehicle and/or driver inspections conducted during the preceding thirty (30) months. To be deemed qualified, the proposer must not have either a vehicle or driver out-of-service rate, by percentage of out-of-service violations per the total number of inspections reported, that is more than twice the national average. In addition, the proposer must have a current federal safety management practices rating of “Satisfactory,” as defined in 49 CFR section 385.3, as amended.

Further information concerning the motor carrier safety evaluation, to which a proposer is subject, may be obtained from CTDMV at:

<http://www.ct.gov/dmv/cwp/view.asp?a=798&q=413206&dmvPNavCtr=#49068>.

All official inspection and rating data that is used in the performance of each evaluation is available to any motor carrier through the federal SAFESTAT website, at <http://www.ai.volpe.dot.gov/>.

Quantities and/or Usages

Quantities and/or usages only and in no way represent a commitment and/or intent to purchase. Actual quantities may vary and will be identified on individual purchase orders issued by the requesting Agency.

Subcontractors

Proposer(s) must provide the majority of the services described in the specifications.

The Using Agency must approve any and all subcontractors utilized by the successful proposer prior to any such subcontractor commencing any work. Proposers acknowledge by the act of submitting a proposal that any work provided under the contract is work conducted on behalf of the State and that the Commissioner of the Using Agency or his/her designee may communicate directly with any subcontractor as the State deems to be necessary or appropriate. It is also understood that the successful proposer shall be responsible for all payment of fees charged by the subcontractor(s). A performance evaluation of any subcontractor shall be provided promptly by the successful proposer to the Using Agency upon request.

Unless otherwise directed by the Using Agency, the contractor shall furnish a minimum of three quotes for goods or subcontracted services having a value in excess of ten thousand dollars (\$10,000). Subcontractor markup shall not exceed 10%.

The Contractor(s) shall be responsible for all work performed on any project, all work performed by his subcontractors, and the performance of all equipment installed. In addition, any work done or materials used without inspection by an agency representative may be ordered exposed for examination and testing, and restored at the Contractor's expense. If found unacceptable, the work shall be removed and replaced at the Contractor's expense. The Contractor(s) is responsible for all work, equipment, and materials for any of their subcontractors.

Whenever the contractor(s) intends to purchase goods or services from a subcontractor or supplier (at any tier) in which the contractor(s) has a financial interest, the contractor(s) shall inform the Using Agency of the nature and extent of his interest in advance in writing. The Using Agency shall have the right to accept or reject such subcontractor or supplier as it deems appropriate.

Contract Period

The contract shall be in effect for a period of five (5) years.

The State reserves the right to extend a subsequent contract for a period or periods of up to the full original contract term or parts thereof.

Extensions will be considered based upon the performance of the Contractor and the amount of work in progress at the end of the initial contract term. In the event the contract period expires prior to completion of any on-going projects, the State will require the Contractor to complete these projects as dictated by the purchase order issued by the using agency.

Change of address

In the event the contractor moves or updates contact information, it is the responsibility of the contractor to advise Procurement Services of such changes in writing. The State will not be held responsible for payments or purchase orders delayed due to the lack of routing caused by the lack of notification on the contractor's part. Change of address or telephone updates must be forwarded to: Department of Administrative Services, Procurement Services, 165 Capitol Avenue, Hartford, CT 06106.

Contract Use

No work shall be performed by an awarded contractor prior to the issuance of a duly authorized purchase order by the Using Agency.

Agency Implementation

The scope of this contract includes services on a standard or specialized basis. The contract user will select a contractor according to the procedures set forth below.

Standard Contract Use

The contract user will request a work plan and cost estimate based on awarded rates for required services from all awarded contractors. Contractors will then be required to submit a work plan and cost estimate that will accomplish the work task requested by the contract user. The contract user will evaluate each of the proposals and authorize the selected contractor to proceed. The contract user may provide comments or other conditions to revise the selected contractor's work plan.

Specialized Contract Use

The contract user will request a detailed work plan and cost estimate from a specific contractor deemed to be most qualified and consistent to the initial selection of the award. Following evaluation of submitted plan(s) the State may select a contractor determined by factors that include special expertise, past performance, project knowledge, time sensitivity, or other factors determined by the State.

In both the Standard and Specialized use of the contract the Using Agency will select the contractor with the most advantageous, responsive, and lowest project cost based on review of all work plans and cost estimates.

Purchase Orders

Purchase orders will be issued by the contract user for the services related to this Contract. Contractors are cautioned not to perform services without receiving a purchase order number. The contractor is not guaranteed any work by the issuance of the contract or purchase order. The State shall pay only for services requested and performed to the satisfaction of the State invoiced correctly under a valid purchase order.

Prevailing Wage Regulations:

Contractors must include a Contractors' Wage Certification Form when returning their bid submission. This form certifies that they are willing to pay wages in accordance with the current wages and policies established by the Connecticut Labor Department, OR Federal Labor Department. Prevailing wage shall be paid as follows:

Federally Funded Work: Any purchase order issued and funded by federal funds shall be paid in accordance with Federal Prevailing Wage Scales. This will be designated on the purchase order and will be detailed at the pre-construction meeting.

State Funded Work: State funded purchase orders exceeding \$100,000.00 (initial purchase order amount) shall be paid in accordance with State Prevailing Wage Scales. State funded purchase orders below \$100,000.00 (initial purchase order amount) shall be paid in accordance with Non-Prevailing Wage Scales.

In the case where both sets of wage rates are applicable, the higher rate shall prevail.

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the abatement of asbestos-containing materials by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site at all times and an Asbestos Abatement Site Supervisor during asbestos abatement work. This person must comply with applicable Federal, State and Local regulations that mandate work practices, and be capable of performing the work of this contract.
- B. The Asbestos Contractor shall be licensed by the State of Connecticut in accordance with State of Connecticut Regulations, Sections 20-440-1 through 9 and 20-441. Should any portion of the work be subcontracted, the subcontractor must also be licensed in accordance with these regulations. Site supervisors and workers shall be certified in accordance with Sections 20-437 and 20-438 of the Connecticut General Statutes and Section 20-440-5 of the Regulations of Connecticut State Agencies. The licensing and certification requirements are available from the Environmental Health Services Division, Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- C. The Owner will retain the services of a Project Monitor for protection of its interests and those using the building. Abatement monitoring will be conducted as deemed necessary.
- D. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- E. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- F. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. Accessible - A space easily accessed, and which can be entered or seen without demolition.
- B. Agency - The authoritative force, usually at the state level, or their representative.
- C. AHERA – Asbestos Hazard Emergency Response Act - U. S. EPA regulation 40 CFR Part 763 under Section 203 of Title II of the Toxic Substances Control Act (TSCA), 15 U.S.C. 2643. This rule mandates inspections, accreditation of persons involved with asbestos, and final air clearances following abatement in public and private schools, and public and commercial buildings.
- D. Alternative Work Practice (AWP) - State of Connecticut Department of Public Health (DPH) approved deviation from Asbestos Standards (Sections 19a-332a-1 to 19a-332a-16 inclusive). Alternative Work Practice methods may be used if pre-approved by DPH or with the approval of DPH, the Design Consultant and State's Project Monitor when not pre-approved. Pre-approved Alternative Work Practice methods are included in Appendix A of this specification. Approval of alternative work practice procedures shall not relieve the Contractor from any codes, regulations or standards required by this specification.
- E. Asbestos Abatement Site Supervisor – Any individual who is employed or engaged by an asbestos contractor to supervise an asbestos abatement project.
- F. Asbestos-Containing Waste Materials - Mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.
- G. Asbestos Control Area - An area where asbestos abatement operations are performed which is isolated by physical boundaries, which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris. Two examples of an Asbestos Control Area are a "full containment" and a "glove-bag."
- H. Authorized Asbestos Disposal Facility - A location approved by the Connecticut Department of Environmental Protection for handling and disposing of asbestos waste or by an equivalent regulatory agency if the material is disposed of outside the State of Connecticut.
- I. Category I Non-Friable Asbestos-Containing Material (ACM) - Asbestos-containing packing, gaskets, resilient floor coverings and asphalt roofing products containing more than 1 percent

asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

- J. Category II Non-Friable ACM - Any material, excluding Category I non-friable ACM, containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- K. Class I Asbestos Work - Activities involving the removal of TSI and surfacing ACM and PACM.
- L. Class II Asbestos Work - Activities involving the removal of ACM, which is not thermal system insulation or surfacing material. This includes, but is not limited to the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic.
- M. Class III Asbestos Work - Repair and maintenance operations, where ACM, including thermal system and surfacing material, is likely to be disturbed.
- N. Class IV Asbestos Work - Maintenance and custodial activities during which employees contact ACM and PACM and activities to clean up waste and debris containing ACM and PACM.
- O. Competent Person - In addition to the definition in 29 CFR 1926.32(f), one who is capable of identifying existing asbestos hazards in the work place and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition for Class I and Class II work who is specially trained in a training course which meet the criteria of 40 CFR 763 (Appendix C to Subpart E - Asbestos Model Accreditation Plan).
- P. Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.
- Q. Critical Barrier - A layer of six (6) mil polyethylene sheeting taped securely over windows, doorways, diffusers, grilles and any other openings between the Work Area and uncontaminated areas outside of the Work Area, including the outside of the building.
- R. Demolition - The wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.
- S. DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.
- T. DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.
- U. Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

- V. Encapsulation - The treatment of asbestos-containing materials to prevent the release of fibers as the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material and binds its components together (penetrating encapsulant).
- W. Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.
- X. Equipment Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled transfer of materials and equipment into or out of the Work Area, typically consisting of a Washroom and a Holding Area.
- Y. Exposed - Open to view.
- Z. Fiber - A particulate form of asbestos five microns or longer, with a length-to-diameter ratio of at least 3 to 1.
- AA. Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.
- BB. Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.
- CC. Fixed Object - A piece of equipment or furniture in the Work Area, which cannot be removed from the Work Area, as, determined by the State.
- DD. Friable Asbestos-Containing Material (ACM) - Material containing more than one percent asbestos which has been applied on ceilings, walls, structural members, piping, duct work, or any other part of a building, which when dry may be crumbled, pulverized or reduced to powder by hand pressure. The term includes non-friable asbestos-containing material after such previously non-friable material becomes damaged to the extent that when dry it may be crumbled, pulverized or reduced to powder by hand pressure.
- EE. Friable Asbestos-Containing Building Material (ACBM) - Any friable ACM that is in or on interior structural members or other parts of a school or public or commercial building.
- FF. Glove-Bag Technique - A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contaminated work area. Information on glove-bag installation, equipment and supplies, and work practices is contained in 29 CFR 1926.1101. The glove-bag assembly is a manufactured or fabricated device consisting of a glove-bag (typically constructed of six (6) mil polyethylene or polyvinyl chloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glove-bag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. This technique requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- GG. HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of trapping and retaining asbestos

fibers. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

- HH. Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.
- II. Inspection - An activity undertaken in a school building, or a public or commercial building, to determine the presence or location, or to assess the condition of, friable or non-friable ACBM or suspected ACBM, whether by visual or physical examination, or by collecting samples of such materials.
- JJ. Lock-down - The procedure of spraying polyethylene sheeting and building materials with an encapsulant type sealant to seal in non-visible asbestos-containing residue.
- KK. Major Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of more than 3 square or 3 linear feet of friable ACBM.
- LL. Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area. This procedure requires AWP application and may only be used if pre-approved by DPH or with the approval of the Design Consultant, State's Project Monitor and DPH when not pre-approved.
- MM. Minor Fiber Release Episode - Any uncontrolled or unintentional disturbance of ACBM, resulting in a visible emission, which involves the falling or dislodging of 3 square or linear feet or less of friable ACBM.
- NN. Movable Object - A piece of equipment or furniture in the Work Area, which can be removed from the Work Area, as, determined by the State.
- OO. Negative Initial Exposure Assessment - A demonstration by the employer which complies with the criteria in 29 CFR 1926.1101(f)(2)(iii) that employee exposure during an operation is expected to be consistently below the PEL.
- PP. Non-Friable Asbestos-Containing Material - Material containing more than 1 percent asbestos as determined using the method specified in Appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy, that when dry cannot be crumbled, pulverized or reduced to powder by hand pressure.
- QQ. Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.
- RR. Permissible Exposure Limits (PELS) - (1) Time-weighted Average Limit (TWA). The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 0.1 fiber per cubic centimeter (f/cc) of air as an eight (8) hour time-weighted average (TWA). (2) Excursion Limit. The employer shall ensure that no employee is exposed to an airborne concentration of asbestos in excess of 1.0 fiber per cubic centimeter of air (1 f/cc) as averaged over a sampling period of thirty (30) minutes.

- SS. Pre-Clean - The process of cleaning an area before asbestos abatement activities begin to ensure all dust and debris in the area considered asbestos containing are properly contained and disposed of. This increases the likelihood the area will pass aggressive air sampling clearance requirements after asbestos-containing materials have been removed.
- TT. Presumed Asbestos-Containing Material - Thermal system insulation and surfacing material found in buildings constructed no later than 1980. The designation of PACM may be rebutted pursuant to 29 CFR 1926.1101 paragraph (k)(5).
- UU. Project Monitor - The certified and licensed individual contracted or employed by the building owner or contractor to supervise and/or conduct air monitoring and analysis schemes. This individual is responsible for recognition of technical deficiencies in procedures during both planning and on-site phases of an abatement project. Requirements for Project Monitor are defined in the Connecticut Department of Public Health Regulations (Sections 20-440-1 to 20-440-9 and 20-441). In addition to these requirements, this person shall be listed in the American Industrial Hygiene Association's Asbestos Analysts Registry.
- VV. Regulated Area - Area established by the employer to demarcate areas where Class I, II and III work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; a work area within which airborne concentrations of asbestos exceed or there is a reasonable possibility they may exceed the PEL.
- WW. Regulated Asbestos-Containing Material (RACM) - (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
- XX. Renovation - Altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting members are wrecked or taken out are demolition.
- YY. Repair - Overhauling, rebuilding, reconstructing or reconditioning of structures or substrates where asbestos, tremolite, anthophyllite or actinolite is present.
- ZZ. Response Action - A method including removal, encapsulation, enclosure, repair and operation and maintenance that protect human health and the environment from friable ACBM.
- AAA. Small-Scale, Short Duration (SSSD) - Tasks such as but not limited to:
1. Removal of asbestos containing insulation on pipes.
 2. Removal of small quantities of asbestos-containing insulation on beams or above ceilings.
 3. Replacement of an asbestos-containing gasket on a valve.
 4. Installation or removal of a small section of drywall.
 5. Installation of electrical conduits through or proximate to asbestos-containing materials.
 6. Removal of small quantities of ACM only if required in the performance of another maintenance activity not intended as asbestos abatement.

7. Removal of asbestos containing thermal system insulation not to exceed amounts greater than those which can be contained in a single glove-bag.
 8. Minor repairs to damaged thermal system insulation, which do not require removal.
 9. Repairs to a piece of asbestos-containing wallboard.
 10. Repairs involving encapsulation, enclosure, or removal, to small amounts of friable ACM only if required in the performance of emergency or routine maintenance activity and not intended solely as asbestos abatement. Such work may not exceed amounts greater than those may, which can be contained in a single prefabricated mini-enclosure. Such an enclosure shall conform spatially and geometrically to the localized work area, in order to perform its intended containment function.
- BBB. Spot Repair – Any asbestos abatement performed within a facility involving not more than three (3) linear feet or three (3) square feet of asbestos-containing material.
- CCC. Unfinished Space - Space used for storage, utilities or work area where appearance is not a factor. Examples of an unfinished space include crawlspace; pipe tunnel and similar spaces.
- DDD. Visible Emissions - Any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.
- EEE. Visible Residue - Any debris or dust on surfaces in areas within the Work Area where asbestos abatement has taken place and which is visible to the unaided eye. All visible residue is assumed to contain asbestos.
- FFF. Waste Generator - Any owner or operator of a source whose act or process produces asbestos-containing waste material.
- GGG. Waste Shipment Record - The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
- HHH. Wet Cleaning - The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools, which have been dampened with water, and afterwards thoroughly decontaminated or disposed of, as asbestos-contaminated waste.
- III. Work Area - Specific area or location where the actual work is being performed or such other area of a facility, which the Commissioner determines, may be hazardous to public health because of such asbestos abatement.
- JJJ. Worker Decontamination Enclosure System - The portion of a Decontamination Enclosure System designed for controlled passage of workers and authorized visitors, typically consisting of a Clean Room, a Shower Room and an Equipment Room.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. Occupational Safety and Health Administration (OSHA)
 - 29 CFR 1910.1001 - Asbestos, Tremolite, Anthophyllite, and Actinolite.
 - 29 CFR 1926.21 - Safety Training and Education.
 - 29 CFR 1926.32 - Definitions.
 - 29 CFR 1926.51 - Sanitation.
 - 29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.
 - 29 CFR 1926.59 - Hazard Communication.
 - 29 CFR 1926.62 – Lead Exposure in Construction.
 - 29 CFR 1926.200 - Accident Prevention Signs and Tags.
 - 29 CFR 1926.417 - Lockout and Tagging of Circuits.
 - 29 CFR 1926.1101 - Asbestos.
 2. Environmental Protection Agency (EPA)
 - 40 CFR 61, Subpart M - National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule.
 - 40 CFR 763, Subpart E - Asbestos School Hazard Emergency Response Act (ASHERA).
 - 40 CFR 763, Subpart G - Worker Protection Rule.
 - 40 CFR 763, Appendix C to Subpart E - Asbestos Model Accreditation Plan (MAP).
 3. State of Connecticut, Department of Public Health Regulations (DPH)
 - Section 19a-332a-1 through 19a-332a-16 - Standards for Asbestos Abatement.
 - Section 19a-333-1 through 19a-333-13 - Asbestos-Containing Materials in Schools Regulations.
 - Section 19a-332e-1 through 19a-332a-8 – Civil Penalties for Violation of Asbestos Abatement Laws.
 - Section 20-440-1 through 20-440-9 - Licensure and Training Requirements for Persons Engaged in Asbestos Abatement and Asbestos Consultation Services.

Section 20-441 – Refresher Training.

4. American National Standards Institute (ANSI)

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

ANSI Z88.2 - Respiratory Protection.

5. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.

ASTM E 96 - Water Vapor Transmission of Materials.

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

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

ASTM E 1368 - Visual Inspection of Asbestos Abatement Projects.

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

6. Underwriters Laboratories, Inc. (UL)

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

1.5 DOCUMENTATION

A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

1. Local Exhaust Equipment
2. Vacuum Equipment
3. Respirators
4. Pressure Differential Automatic Recording Instrument
5. Surfactant
6. Chemical Encapsulant
7. Polyethylene Sheeting
8. Airless Sprayers
9. Portable Shower Units
10. Adhesive Removal Chemicals
11. MSDS for All Materials Delivered to the Site
12. Letters of Compatibility for Encapsulants and Over coating Materials

C. Statements:

1. State Notification
2. Worker Medical Certification
3. Worker Training Certification
4. Worker Respirator Fit Testing
5. OSHA Laboratory Certification
6. Contractor's Project Monitor Certification
7. Landfill Approval
8. Safety Plan
9. Respirator Protection Plan
 - a. Initial Exposure Assessment
 - b. Copies of all required notifications, approvals and permits for the removal, disposal and transport asbestos-containing or contaminated materials.
 - c. Documentation from a physician certifying that all employees who may be exposed to airborne asbestos in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.1101. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants which to which he/she may be exposed
 - d. Documentation certifying that all employees have received training in the proper handling of materials that contain asbestos; understand the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.
 - e. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.1101.
 - f. Qualifications of the person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
 - g. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. Include any site-specific information to address health and safety procedures unique to this project.
 - h. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of

the continued effectiveness of the program; and other elements included in the standard.

- i. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross-referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and, contain information on how other contract employees will be informed about hazards their employees may encounter while working in the facility.
- j. Demonstrate that employee's exposure will be below the PEL's. For Class I asbestos work until the employer conducts exposure monitoring and documents that employees on that job will not be exposed in excess of the PEL's, or otherwise makes a negative exposure assessment, the employer shall presume that employees are exposed in excess of the TWA and excursion limit.

D. Records:

1. Sign-in/out Logs
2. Personal Air Sampling Results
3. Waste Shipment Records
4. Pressure Differential Recording Data
5. NPE Inspection and Smoke Test Logs
6. Rental Equipment Statements
 - a. When rental equipment is to be used in removal areas or to transport waste materials, submit a copy of written notification provided to the rental company informing them of the nature of use of the rented equipment

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.1101. Provide appropriate respiratory protection for each worker and ensure usage during potential asbestos exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements for respirators in use.
- B. Minimum respiratory protection shall be as follows:

Airborne concentration of asbestos,
or conditions of use.

Required Respirator

Not in excess of 10 f/cc
(100 x PEL)

Any powered air purifying
respirator equipped with
high efficiency filters
or any supplied-air respirator

	operated in continuous flow mode.
Not in excess of 100 f/cc (1000 x PEL)	Full face piece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (>1000 x PEL) or unknown concentration	Full face piece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

- a. Respirators assigned for higher airborne fiber concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.
 - b. A high-efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 microns in diameter or larger.
- C. Provide and require all workers to wear protective clothing in Work Areas where asbestos fiber concentrations exceed permissible limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing remains in the Equipment Room for reuse or disposal of as contaminated waste.
- D. Ensure that all workers and authorized persons enter and leave the Asbestos Control Area through the Worker Decontamination Enclosure System.

1.7 EQUIPMENT REMOVAL PROCEDURE

- A. Clean surfaces of contaminated containers and equipment thoroughly by vacuuming with HEPA filtered equipment and wet wiping before moving such items into the Equipment Decontamination Enclosure System for final cleaning and removal to uncontaminated areas. Ensure that personnel do not leave the Asbestos Control Area through the Equipment Decontamination Enclosure System.

1.8 SEQUENCE OF WORK

- A. Proceed in accordance with the sequence of work as mutually agreed upon with the Owner. Work shall be divided into convenient Work Areas, each of which is to be completed as a separate unit. The following sequence of work shall be used for the asbestos abatement work:
 1. A visual inspection of the Work Area to determine pre-existing damage to facility components.
 2. Release of floor area (Phase) to the Contractor.
 3. All temporary utilities required for the project shall be on site and operational prior to the initiation of asbestos work.

4. Removal of all movable objects from the Work Area undergoing abatement by the Contractor.
5. Abatement of all asbestos-containing materials by the Contractor.
6. Air sampling by the Owner's Project Monitor for reoccupancy.
7. Rework activities as specified in other sections of this specification.
8. Cleanup by the Contractor. Work Areas must be returned to their original condition or better.

1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with asbestos shall be decontaminated or disposed of as asbestos waste.

1.10 SCHOOL IN SESSION (SIS) REQUIREMENTS – GRADES K-12

- A. No asbestos removal activities are permitted during regular school hours.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2006-33.
- C. The abatement contractor shall provide the documentation included in paragraph 1.5.C to the Asbestos Project Designer 30 days prior to start of asbestos removal activities in each work area for submission in DPH SIS requests. No asbestos removal is permitted in an occupied school facility until approved by DPH.
- D. The Owners project monitor will conduct daily air sampling at prescribed locations throughout the project. Samples will be collected and read via phase contrast microscopy (PCM) twice per shift. All air samples in occupied areas shall be analyzed at the site prior to the end of the shift, by an analyst currently listed on the AIHA Asbestos Analysts registry and the Connecticut DPH Laboratory Certification Program. The results of the analysis of all samples shall be made available prior to return of students on the next day following the date of collection of the samples.
- E. If during asbestos abatement activities, any air sample analyzed by PCM is either overloaded with particulate or exceeds 0.010 f/cc or the background level, whichever is higher, the sample shall be analyzed by the NIOSH 7402 Transmission Electron Microscopy (TEM) method. Results of the analysis of the TEM samples shall be submitted to the DPH, the appropriate local Department of Health Agency and the Connecticut Technical High School System.
- F. If any air sample analyzed by NIOSH 7402 TEM method is either overloaded with particulate and cannot be analyzed or, if upon analysis the sample fiber concentration exceeds 0.005 f/cc, the area outside the established asbestos work area will be considered contaminated with asbestos. The Project Designer shall conduct an assessment of the contamination and the asbestos contractor shall re-establish engineering controls, isolation barriers, abatement work practices, etc. and clean the affected area. An area of the school evacuated due to air sampling data as described above shall not be occupied until: i) the area is cleaned via wet wipe techniques using amended water and HEPA vacuum procedures by the asbestos contractor; and ii) air sampling and analysis of the area satisfies the DPH criteria for re-occupancy.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating four (4) or six (6) mil.
- B. Polyethylene disposable bags shall be six (6) mil with pre-printed label. Disposable bags shall be [transparent] [opaque].
- C. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- D. Surfactant (wetting agent) shall consist of fifty (50) percent polyoxyethylene ether and fifty (50) percent polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration one (1) ounce surfactant to five (5) gallons of water or as directed by the manufacturer.
- E. Containers must be impermeable and shall be both air and watertight. Containers shall be labeled in accordance with OSHA Standard 29 CFR 1926.1101 and EPA 40 CFR Part 61.152 as appropriate.
- F. Labels and signs shall conform to OSHA Standard 29 CFR 1926.1101.
- G. Encapsulant shall be bridging or penetrating type which has been approved by the Design Consultant. Usage shall be in accordance with manufacturer's printed technical data. Encapsulant must be compatible with new materials being installed. Encapsulant may be clear or white.
- H. Glove-bag assembly shall be manufactured of six (6) mil transparent polyethylene or PVC with two (2) inward projecting long sleeve gloves, an internal pouch for tools, and an attached labeled receptacle for waste.
- I. Mastic removal chemicals shall be low odor, non-citrus based. Flash point shall be in excess of 140 deg. F.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for asbestos removal.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. Showers shall be equipped with hot and cold or warm running water. One shower stall shall be provided for each eight workers.

- E. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Asbestos Control Area.
- F. Pressure differential automatic recording instrument shall be provided to ensure exhaust air filtration devices provide the minimum pressure differential required between the Work Area and occupied areas of the facility.
- G. Spray equipment shall be capable of mixing wetting agent with water and capable of generating sufficient pressure and volume. Hose length shall be sufficient to reach all of the Asbestos Control Area.
- H. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
- I. Mechanical mastic removal equipment shall be suitable for the application.
- J. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule.
- K. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR ASBESTOS ABATEMENT

- A. A Competent Person and Asbestos Abatement Site Supervisor shall be on the job at all times to ensure the establishment and maintenance of the NPE and proper work practices are followed through completion of the project.
- B. Containerize asbestos-containing waste material removed daily. Do not allow ACM to remain on the floor overnight, allowing it to dry out. Fill disposal containers (six (6) mil polyethylene bags or fiber drums) as removal proceeds, seal filled containers, and apply caution labels and clean containers before removal to wash area. Bags shall be securely sealed to prevent accidental opening and leakage by taping in gooseneck fashion. Bags may be placed in drums for staging and transportation to the disposal site. Bags shall be decontaminated by wet cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops. Vinyl asbestos tile removed shall be bagged and placed in clean drums and sealed with locking ring tops. Wet clean each container thoroughly before moving to a holding area or to the waste storage container.
- C. If at any time during asbestos removal, should the Project Monitor suspect contamination of areas outside the Work Area, the Contractor shall stop all abatement work and take steps to decontaminate these areas and eliminate causes of such contamination. Unprotected individuals shall be prohibited from entering contaminated areas until air sampling and visual inspections determine decontamination.

3.2 PREPARATION OF WORK AREA ENCLOSURE SYSTEM

- A. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
- B. Post warning signs meeting the specifications of OSHA 29 CFR 1910.1001 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area. Additional signs may require posting following construction of work place enclosure barriers.
- C. Utilize engineering controls and personnel protective equipment while installing enclosures and supports when asbestos-containing materials may be disturbed.
- D. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.

- E. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- F. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the building. Seal all vents.
- G. Pre-clean movable objects within the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate and remove such objects from Work Areas to a temporary location.
- H. Pre-clean fixed objects within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with six (6) mil polyethylene sheeting sealed with tape. Objects which must remain in the Work Area and which require special ventilation or enclosure include electrical equipment, pumps, compressors, control panels, meter equipment.
- I. Clean the proposed Work Areas using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.
- J. Seal off all windows, doorways, skylights, ducts, grilles, diffusers, and any other openings between the Work Area and the uncontaminated areas outside of the Work Area with critical barriers. Doorways and corridors, which will not be used for passage during work, must be sealed with fixed critical barriers.
- K. Conspicuously label and maintain emergency and fire exits from the Asbestos Control Area satisfactory to the Owner.

3.3 WORKER DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, a Worker Decontamination Enclosure System consisting of Equipment Room, Shower Room and Clean Room in series. Access to the Work Area shall only be through this enclosure.
- B. Access between rooms in the Worker Decontamination Enclosure System shall be through double flap-curtained openings (air locks). Other effective designs are permissible. The Clean Room, Shower Room and Equipment Room located within the Worker Decontamination Enclosure, shall be completely sealed ensuring sole source of airflow into the Asbestos Control Area originates from the outside-uncontaminated areas.
- C. The Clean Room shall be adequately sized to accommodate workers and shall be equipped with a suitable number of hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Changing areas of the Clean Room shall be suitably screened from areas occupied by the public.
- D. The Shower Room shall be of sufficient capacity to accommodate the number of workers. Supply warm water to showers. Provide one shower for each eight workers. No worker or other person shall leave an Asbestos Control Area without showering.

3.4 EQUIPMENT DECONTAMINATION ENCLOSURE SYSTEM

- A. Establish contiguous to the Work Area, an Equipment Decontamination Enclosure System consisting of two (2) totally enclosed chambers divided by a double flap curtained opening. Other effective designs are permissible. This enclosure must be constructed to ensure that no personnel enter or exit through this unit.

3.5 SEPARATION OF WORK AREAS FROM OCCUPIED AREAS

- A. Occupied areas and/or building space not within the Asbestos Control Area shall be separated from asbestos abatement Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- B. Do not impair required building exits from any occupied building area. Where normal exits have been blocked by the asbestos work, provide temporary exit signs directing building occupants to the nearest available exit location.
- C. Create a pressure differential in the range of 0.02 to 0.04 inches of water column between the Work Area and occupied areas by the use of acceptable pressure differential equipment. Provide a sufficient quantity of units to exhaust the volume of air within the Asbestos Control Area a minimum of four times per hour. Continuously monitor the pressure differential between the Work Area and occupied areas utilizing recording type equipment to ensure exhaust air filtration equipment maintains a minimum pressure differential of 0.02 inches of water column.

3.6 REMOVAL OF FRIABLE ASBESTOS MATERIAL

- A. Remove friable materials identified in accordance with the specific description of work to be accomplished.
- B. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first, with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints.
- C. Removal of existing suspended ceilings, fluorescent light fixtures, and other ceiling mounted items that interfere with asbestos abatement shall be accomplished after engineering controls have been established. Fluorescent fixture components require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all

applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.

- D. Where non-ACM thermal systems insulation exists within the Work Area, decontaminate and protect non-ACM insulation material with two (2) layers of six (6)-mil polyethylene sheeting, or remove as asbestos contaminated.
- E. Spray friable materials with amended water, using airless spray equipment capable of providing a "mist" application to reduce the release of fibers during the removal operation. In order to maintain indoor asbestos concentrations at a minimum, remove the wet asbestos in manageable sections. Materials shall not be allowed to dry out. Material drop shall not exceed 8 feet. For heights up to 15 feet, provide inclined chutes or scaffolding to intercept drop. For heights, exceeding 15 feet provide enclosed dust-proof chutes.
- F. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.7 REMOVAL OF NON-FRIABLE RESILIENT FLOORING AND ASSOCIATED MASTIC

- A. Resilient flooring shall be removed by approved methods, which minimize the release of asbestos fibers. Mastic may be removed by hand methods utilizing solvents or by mechanical means. Precaution shall be taken to prevent the leakage of contaminated liquids containing solvents to other areas of the building. Take immediate steps to clean up leaks and prevent future occurrences of the leak. Solvents shall be used in strict accordance with the manufacturer's written recommendations. Mechanical equipment may be used to remove flooring mastic. Ensure surfaces have been adequately wetted to prevent dust emissions prior to operation of mechanical mastic removal equipment.

3.8 REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Non-friable miscellaneous materials shall be removed by approved methods, which minimize the release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap ACM in 6-mil polyethylene sheeting and remove for disposal.

3.9 INTACT REMOVAL OF NON-FRIABLE MISCELLANEOUS MATERIAL

- A. Intact removal of non-friable asbestos-containing materials shall be accomplished by approved methods without release of asbestos fibers. Materials shall be wetted with amended water prior to removal. Double wrap removed ACM in 6-mil polyethylene sheeting and remove for disposal.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter DEH #2003-10.

3.10 REMOVAL OF CONTAMINATED EARTH

- A. Remove all ACM gross debris and visible contamination from the top of soil. Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Polyethylene shall be applied alternately to floors and walls. Cover floors first with a layer of six- (6) mil polyethylene sheeting, so that polyethylene extends at least twelve (12) inches up on walls. Cover walls with a layer of four- (4) mil polyethylene sheeting to twelve (12) inches beyond the wall floor intersection, thus overlapping the floor material by a minimum of twenty-four (24) inches. Repeat the process for the second layer of polyethylene. There shall be no seams in the plastic sheet at wall-to-floor joints. Perform removal of ACM from all surfaces containing asbestos in the crawl space. After successful completion of a visual inspection, remove the polyethylene sheeting and place in disposal containers. Any debris which may have leaked behind the inner layer shall be removed by HEPA vacuuming. Remove soil to a depth of 2-inches, or to a depth as required by the Project Manager to remove ACM contamination. Apply a lock-down encapsulant to all surfaces within the Work Area from which asbestos has been removed.

3.11 REMOVAL OF EXTERIOR UNDERGROUND PIPE AND CONDUIT SYSTEM INTACT

- A. After excavating, to expose the top of the underground pipe system, remove by hand, earth from the sides of the pipe without disturbing the exterior. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. At locations where the pipe systems are to be cut into sections, and where the sections are to be lifted, remove earth from the entire perimeter of the pipe conduit. Construct the NPE and establish a negative pressure differential between the Work Area and the exterior. Construct the containment of adequate size to remove a minimum of two linear feet of outer casing and underlying insulation prior to disturbing ACM. Utilize locations where field joints have been made during pipe system installation to the extent feasible. Remove the ACM casing and pipe insulation materials from around steam piping. Once the area has passed clearance testing and all controls established by this section have been removed cut the piping and remove the section from the trench using slings which will not damage the casing. Double wrap sections of pipe in 6-mil polyethylene sheeting and place in the waste storage container or transport vehicle.

3.12 REMOVAL OF EXTERIOR UNDERGROUND PIPE INSULATION

- A. After excavating to expose the top of the underground pipe system, remove by hand earth from the sides of the pipe without disturbing the insulation. Construct a Negative Pressure Enclosure (NPE) system suitable for exterior service utilizing wood frame and plywood construction. Provide exhaust air filtration equipment to create a minimum of four air changes per hour and establish a negative pressure differential between the Work Area and the exterior of between 0.02 and 0.04 inches of water column. Remove pipe and conduit system containing ACM in sections cut to the maximum length feasible. After excavating to expose the top of the pipe system, remove by hand earth from the sides of the pipe. Construct the NPE along the entire section of piping between manholes, and establish a negative pressure differential between the

Work Area and the exterior. Remove the pipe insulation and all asbestos-containing material, including contaminated earth from around piping as ACM.

3.13 REMOVAL OF WINDOWS FROM BUILDING EXTERIOR

- A. Cover floor surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 5-feet from walls. Cover ground surfaces with polyethylene sheeting sealed with tape. Polyethylene shall extend a minimum of 10-feet from building exterior. Install polyethylene sheet over the inside of the window opening and seal with tape.
- B. The windows are to be removed from the opening by hand methods to minimize damage, wrapped in two (2) layers of 6-mil polyethylene sheeting and taken off-site by the contractor for final cleaning prior to disposal and recycling. After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible residue (wire brushes are not permitted). During this work, the surfaces being cleaned shall be kept wet.

3.14 ALTERNATIVE WORK PRACTICE (AWP) PROCEDURES

- A. The procedures described in this specification are to be utilized at all times. Alternative work practice methods may be used if pre-approved by DPH. Should the Contractor desire to use alternative work practice procedures, which have not been pre-approved by DPH, submit in writing a description of the proposed methods to DPH, Design Consultant, and Owner's Project Monitor for approval.
- B. Alternative work practice (AWP) procedures shall provide equivalent or greater protection than the procedures that they replace. A DPH licensed asbestos project designer must submit in writing a description of the proposed methods to the Design Consultant for review. If the procedure is acceptable to the Design Consultant, an AWP application may then be forwarded to DPH for approval. Failure to secure AWP acceptance or approval shall not be a basis of a claim for additional compensation.
- C. The Contractor shall be responsible for all fees associated with filing Alternative Work Practice (AWP) applications, which have not been pre-approved. AWP applications must be submitted by Connecticut DPH licensed Project Designers.

3.15 CLEAN-UP PROCEDURE

- A. Remove and containerize all visible accumulations of asbestos-containing and/or asbestos-contaminated debris which may have splattered or collected on the polyethylene wall covering. Carefully remove the cleaned outer layer of polyethylene from the walls, fold inward as material is being removed, and place in disposal containers. Any debris, which may have leaked behind the outer layer, shall be removed by HEPA vacuuming and/or wet cleaning.
- B. Remove contamination from the exteriors of the negative air machines, scaffolding, ladders, extension cords, hoses and other equipment inside the Work Area. Cleaning may be accomplished by brushing, HEPA vacuuming and/or wet cleaning.
- C. The Owner's Project Monitor shall conduct a thorough visual inspection utilizing a high-intensity flashlight, with the containment barriers in place, to detect visible accumulations of

dust or bulk asbestos-containing materials remaining in the Work Area. Should dust, debris or residue be detected, the Contractor shall repeat the cleaning, at the Contractor's expense, until the area is in compliance. The visual inspection will detect incomplete work, damage caused by the abatement activity, and inadequate clean up of the work site.

- D. Once the area has been re-cleaned, any equipment, tools or materials not required for completion of the work, shall be removed from the Work Area. Negative air filtration devices shall remain in place and operating for the remainder of the clean-up operation.
- E. Wet wipe the walls beginning at the point farthest away from the negative air filtration units using cotton rags or lint free paper towels. Rags and towels shall be disposed of after each use. Workers should avoid the use of dirty rags to insure proper cleaning of surfaces. Mop the entire floor with a clean mop head and amended water. Water shall be changed frequently. Waste water shall be filtered using best available technology and dumped down an approved drain.
- F. A visual inspection of the Work Area by the licensed Project Monitor shall be conducted. Evidence of asbestos contamination identified during the inspection will necessitate further cleaning as heretofore specified. The area shall be re-cleaned at the Contractors expense until the Standard of Cleanliness is achieved.
- G. Upon successful completion of the visual inspection, the Contractor shall encapsulate all abated surfaces.
- H. Once the lock-down encapsulant has sufficiently dried, air sampling for reoccupancy clearance shall be undertaken using aggressive sampling techniques. Analysis of clearance samples shall follow State of Connecticut Regulations, Section 19a-332a-12. Areas, which do not comply, shall continue to be cleaned by and at the Contractors expense, until the specified Standard of Cleaning is achieved as evidenced by results of air testing. When the Work Area passes the reoccupancy clearance, controls established by this specification may be removed.
- I. During breakdown of containment carefully remove the polyethylene barriers. Fold inward as the material is being removed, and place in leak-tight containers. Any debris which may have fallen behind the polyethylene sheeting shall be removed by HEPA vacuuming and/or wet cleaning. Remove all remaining polyethylene, including critical barriers, and Decontamination Enclosure Systems leaving negative air filtration devices in operation. HEPA vacuum and/or wet wipe any visible residue, which is uncovered during this process.

3.16 REOCCUPANCY CLEARANCE AIR SAMPLING

- A. Reoccupancy clearance air sampling will be conducted by the Project Monitor in accordance with the reoccupancy clearance criteria as set forth in the Regulations of Connecticut State Agencies, Section 19a-332a-12 or Section 19a-333-7 as applicable.
- B. Asbestos removal shall be conducted in accordance with applicable DPH regulations and DPH Circular Letter EHS #2010-48.
- C. Post-abatement clearance air monitoring requirements are as follows:
 - 1. Air sampling will not begin until at least 12 hours after wet cleaning has been completed and no visible water or condensation remain.

2. Sampling equipment will be placed at random around the Work Area. If the Work Area contains the number of rooms equivalent to the number of required samples based on floor area, a sampler shall be placed in each room. When the number of rooms is greater than the number of samples, a representative number of rooms will be selected.
3. The representative samplers placed outside the Work Area but within the building will be located to avoid any air that might escape through the isolation barriers and will be approximately 50 feet from the entrance to the Work Area, and 25 feet from the isolation barriers.
4. The following aggressive air sampling procedures will be used within the Work Area during all air clearance monitoring:
 - a. Before starting the sampling pumps, direct the exhaust from forced air equipment (such as a 1 horsepower leaf blower) against all walls, ceilings, floors, ledges and other surfaces in the Work Area. This should take at least 5 minutes per 1000 SF of floor area.
 - b. Place a 20-inch fan in the center of the room. (Use one fan per 10,000 cubic feet of room space.) Place the fan on slow speed and point it toward the ceiling.
 - c. Start the sampling pumps and sample for the required time.
 - d. Turn off the pump and then the fan(s) when sampling is complete.
5. Air volumes taken for clearance sampling shall be sufficient to accurately determine (to a 95 percent probability) fiber concentrations to 0.010 f/cc of air.
6. Each homogeneous Work Area, which does not meet the clearance criteria, shall be thoroughly recleaned using HEPA vacuuming and/or wet cleaning, with the negative pressure ventilation system in operation. New samples shall be collected in the Work Area as described above. The process shall be repeated until the Work Area passes the test, with the cost of repeat sampling being borne entirely by the Contractor.
7. For an asbestos abatement project with more than one homogeneous Work Area, the release criterion shall be applied independently to each Work Area.

- D. Continuous air sampling during construction will be conducted by the State's Project Monitor. Reoccupancy clearance testing will be in accordance with State of Connecticut DPH requirements. For window removal, a final visual inspection is to be performed to determine successful completion of all work associated with removal of windows

3.17 CONTRACTOR RESPONSIBILITY

- A. Conduct air sampling, as necessary, to assure that workers are using appropriate respiratory protection in accordance with OSHA Standard 1926.1101. Perform monitoring to determine accurately the airborne concentrations of asbestos to which employees may be exposed. Determinations of employee exposure shall be made from breathing zone air samples that are representative of the 8-hour TWA and 30-minute short-term exposures of each employee. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours of receipt of results, and shall be available for review until the job is complete.

3.18 DISPOSAL OF ASBESTOS

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.

- B. Disposal approval shall be obtained prior to commencement of asbestos removal.
- C. Warning signs must be attached to vehicles used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- D. Waste removal dumpsters and cargo areas of transport vehicles shall be lined with a layer of six (6) mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first, and shall be extended up sidewalls 12-inches. Wall sheeting shall overlap floor sheeting 24-inches and tape into place.
- E. A copy of the completed Waste Shipment Record shall be provided to the Owner.

3.19 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, resecure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, fire alarm systems and sound systems.

3.20 ACTION CRITERIA

- A. If air samples collected outside of the Work Area during abatement activities indicate airborne fiber concentrations greater than original background levels or greater than 0.010 f/cc, as determined by Phase Contrast Microscopy, whichever is larger, an examination of the Work Area perimeter shall be conducted and the integrity of barriers shall be restored. Cleanup of surfaces outside the Work Area using HEPA vacuum equipment or wet cleaning techniques shall be done prior to resuming abatement activities.

END OF SECTION 02 82 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work under this Section shall include furnishing all labor, materials and equipment necessary to install flexible connections at equipment connections to fixed ductwork following removal of existing flexible connections and successful air clearance test results.
- B. Contractor shall verify all locations where flexible connections are to be removed and replaced.

1.2 SUBMITTALS

- A. Contractor shall submit manufacturer's complete product data and installation instructions with list of materials, locations, and thickness for each use.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Closely woven, 30 oz. UL approved glass fabric, double coated with neoprene.
- B. Fire retardant, waterproof, air tight, resistant to acids and grease, capable of withstanding temperatures up to 250 degrees F.
- C. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install new flexible duct connections following manufacturer's instructions and in accordance with Fig. 3-5 of the SMACNA Low Pressure Duct Standards.
- B. Seal all ductwork where dismantled using duct sealing tape and mastic. The Contractor shall repair all ductwork that is buckled, misaligned, or damaged as a result of this work at no additional cost to the Owner.

END OF SECTION 23 33 00

PART 1 - GENERAL**1.1 DESCRIPTION OF WORK**

- A. The work included under this section shall include furnishing all labor, materials and equipment necessary to insulate or re insulate all (including presently un-insulated but previously insulated) mechanical systems indicated.
- B. Insulation requirements shall be in accordance with the current edition of ASHRAE 90.1. Insulation shall consist of replacement with a non-asbestos-containing material of the thickness and type as specified herein.
- C. Installation of insulation materials shall include but is not limited to the following:
 - 1. Low Pressure Steam Piping.
 - 2. Steam Condensate Piping.
 - 3. Roof Drains.
 - 4. Domestic Cold Water Piping.
 - 5. Domestic Hot Water Piping.
 - 6. Chilled Water Piping.
 - 7. Hot Water Heating Supply and Return Piping.
 - 8. Mechanical Equipment.
 - 9. HVAC Equipment.
 - 10. HVAC Ductwork.
 - 11. Boiler Breeching

1.2 REFERENCES

- A. ASHRAE 90.1 – Energy Standards for Buildings Except Low-rise Residential Buildings.
- B. ASTM C547 - Mineral Fiber Preformed Pipe Insulation.
- C. ASTM C612 – Mineral Fiber Block and Board Thermal Insulation.
- D. ASTM E84 - Surface Burning Characteristics of Building Materials.
- E. ASTM E96 - Water Vapor Transmission of Materials.
- F. NFPA 255 - Surface Burning Characteristics of Building Materials.
- G. UL 723 - Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Submit manufacturer's technical product data and installation instructions for each insulation material and device proposed for use with a list of materials, locations and thickness for each use.
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1.4 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E84, NFPA 255, and UL 723.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- B. Store insulation in original wrapping and protect from weather and construction traffic.
- C. Protect insulation against dirt, water, chemical, and mechanical damage.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastic, and insulation cements.
- B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 - PRODUCTS**2.1 GENERAL**

- A. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84.

2.2 GLASS FIBER PIPING INSULATION

- A. Fiberglass piping insulation shall conform to ASTM C547 and shall be pre-molded sectional rigid molded with a "k" of 0.24 at 75 degrees F mean temperature, thickness as specified in the Piping Insulation Thickness table. Insulation shall be jacketed with an double pressure-sensitive adhesive ASJ vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.3 GLASS FIBER FITTING INSULATION

- A. Insulation for fittings, flanges, and valves shall be remolded PVC fitting covers with fiberglass insulation inserts of the same thickness and conductivity as used on adjacent piping. Maximum service temperature 450 degrees F. (insert, 150 degrees F PVC). PVC fitting covers shall be 30 mil.

2.4 DUCT INSULATION

- A. Flexible fiberglass duct insulation shall conform to ASTM C553 with 1 pcf density, with a "k" of 0.28 at 75 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a water vapor permeance of 0.02 perms (maximum). Maximum service temperature 250 degrees
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- B. Rigid fiberglass duct insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 1-1/2" thick. Insulation shall be jacketed with an FSK vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.5 EQUIPMENT INSULATION

- A. Rigid fiberglass equipment insulation shall conform to ASTM C612 with 6 pcf density, with a "k" of 0.40 at 200 degrees F mean temperature, 2" thick. Insulation shall be jacketed with an ASJ vapor retarder jacket having a permeance of 0.02 perms (maximum). Maximum service temperature 450 degrees F.

2.6 BOILER BREECHING INSULATION

- A. Mineral rock wool conforming to ASTM C612 class 3, density 3.0 pounds pcf. Maximum service temperature 1200 degrees F.

2.7 ADHESIVES, SEALANTS, AND COATING COMPOUNDS

- A. Vapor barrier coating shall conform to MIL-A-3316, Class 1.

2.8 ANCHOR PINS

- A. Anchor pins and speed washers as recommended by the insulation manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials. Notify Agency if any leaks have been identified during construction activities prior to re-insulation.
- B. Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

- A. Insulation thickness shall be in accordance with the current edition of ASHRAE 90.1. The insulation thickness identified in the insulation schedule is meant only as a guide and it is the responsibility of the contractor to comply with applicable codes at the time of the work.
- B. Fiberglass Insulation:
1. Install materials in accordance with manufacturer's instructions. Secure seams with pressure sensitive tape closure and butt joints with minimum 3-inch (76 mm) wide tape of same material as vapor barrier jacket.
 2. On exposed piping, locate insulation and cover seams in least visible locations.
 3. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations.
 4. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections and expansion joints.
 5. Apply vapor barrier coating to all exposed ends of insulation.
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- C. Insulation thicknesses for hot water systems are for systems operating to 200 F. LP steam is for temps from 200 to 250 F (15 psig). MP steam is for temps from 251 to 350 F (15 to 125 psig). HP steam is for temps from 351 and above (125 psig and above) Condensate is assuming maximum temp of 200 F.

3.3 INSULATION SCHEDULE

Per 2006 International Energy Conservation Code:

PIPING SYSTEM	PIPE SIZE (Inch)	THICKNESS (Inch)
Domestic Cold Water	All	1"
Domestic Hot Water	Up to 2"	1"
Domestic Hot Water	2 1/2" to 8"	2"
Domestic Hot Water Recirculating	All	1"
Horizontal Roof Drains	Up to 6"	1"
Horizontal Roof Drains	8" and over	1 1/2"
Hot Water Supply and Return	Up to 1 1/2"	1"
Hot Water Supply and Return	1 1/2" and over	2"
Low Pressure Steam(up to 15 psig)	Up to 2"	1 1/2"
Low Pressure Steam(up to 15 psig)	2 1/2" to 6"	3"
Low Pressure Steam(up to 15 psig)	8" and over	3 1/2"
Medium Pressure Steam(15 to 120 psig)	Up to 1"	2"
Medium Pressure Steam(15 to 120 psig)	1 1/4" to 4"	2 1/2"
Medium Pressure Steam(15 to 120 psig)	5" to 8"	3 1/2"
High Pressure Steam(125 psig and above)	Up to 2"	2 1/2"
High Pressure Steam(125 psig and above)	2 1/2" to 4"	3"
High Pressure Steam(125 psig and above)	5" to 8"	3 1/2"
Steam Condensate (Gravity and Pumped)	All	1 1/2"
Condensate Drain (copper pipe only)	All	1/2"
Flash Tank	All	3"
Chilled Water (40 F to 55 F)	Up to 1 1/2"	1"
Chilled Water (40 F to 55 F)	1 1/2" and over	1 1/2"
Hot Water Storage Tank	All	2"
Other Heating Equipment	All	2"
Boiler Breeching	All	3"

END OF SECTION 23 07 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall be the removal of asbestos-containing roofing materials by persons who are knowledgeable, qualified, licensed, and trained in the removal, treatment, handling and disposal of asbestos-containing roofing material, and the subsequent cleaning of the affected environment. The Contractor shall have a Competent Person in control on the job site with authority to take prompt corrective measures at all times during roofing removal work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract.
- B. The Owner may retain the services of a Project Monitor for protection of its interests and those using the building. Area air sampling and visual inspection to ensure proper clean up of the work area will be conducted as deemed necessary.
- C. Deviations from the Specification require the written approval of the State of Connecticut.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for asbestos), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
- B. A description of the scope of work will be attached to each individual project work order.

1.3 DEFINITIONS

- A. AGENCY - The authoritative force, usually at the state level, or their representative.
- B. ASBESTOS-CONTAINING MATERIAL (ACM) – Any material containing more than one percent asbestos.
- C. COMPETENT PERSON – In addition to the definition in 29 CFR 1926.32(f), one who is in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f); in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation plan (40 CFR Part 763) for Supervisor, or its equivalent.
- D. HIGH-EFFICIENCY PARTICULATE AIR (HEPA) - A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles 0.3 microns in diameter.
- E. LEAK-TIGHT - Solids or liquids cannot escape or spill out. It also means dust-tight.

- F. REGULATED AREA - Area established by the Competent Person to demarcate areas where airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the Permissible Exposure Limit (PEL).
- G. NON-FRIABLE REGULATED ASBESTOS-CONTAINING MATERIAL - Means any material containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section I, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
- H. REGULATED ASBESTOS-CONTAINING MATERIAL (RACM) – means (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
 - 1. Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1101-Asbestos
 - 2. Environmental Protection Agency (EPA) 40 CFR 61, Subpart M-National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule. 40 CFR 763, Appendix C to Subpart E – Asbestos Model Accreditation Plan (MAP)
 - 3. State of Connecticut, Department of Public Health Regulations (DPH) Sections 19a-332a-1 Through 19a-332a-16 – Standards for Asbestos Abatement

1.5 SUBMITTALS AND NOTICES

- A. Prior to commencement of asbestos abatement work, submit to the A/E and Construction Coordinator and receive approval and/or acknowledgement of following:
 - 1. State notifications (when applicable)
 - 2. Asbestos worker medical clearance to wear a respirator documentation
 - 3. Asbestos worker & Competent Person training documentation
 - 4. Asbestos worker respiratory fit testing documentation
- B. Within 35 days following the date the asbestos waste trailer leaves the job site, submit to the A/E and DPW Construction Coordinator:
 - 1. Waste shipment record for disposal of asbestos roofing material

1.6 PERSONNEL PROTECTION

- A. Provide and require all workers to wear protective clothing and half face respirators when present in the Regulated Area established by the Competent Person.

1.7 WORKER TRAINING REQUIREMENTS

- A. Training for the Competent Person, Supervisor, and Workers shall meet the requirements of Federal and State regulations.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Polyethylene sheeting and disposal bags shall be six (6) mil.
- B. Labels and signs shall conform to applicable regulations.

2.2 TOOLS AND EQUIPMENT

- A. Air monitoring equipment of the type and quantity required to monitor operations and conduct personnel exposure surveillance per OSHA requirements.
- B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
- C. Waste Containers shall be lined with 2 layers of 6 mil polyethylene sheeting and 1 layer of polypropylene burlap.

PART 3 - EXECUTION

3.1 PREPARATION OF WORK AREA

- A. Post warning signs meeting the specifications of OSHA 29 CFR 1910 and 29 CFR 1926.1101 at each Regulated Area. In addition, signs shall be posted at all approaches to Regulated Areas so that an employee may read the sign and take the necessary protective steps before entering the area.
- B. Prior to start of work, and as needed during the job, the Competent Person shall inspect the work site and determine whether the roofing material is non-friable asbestos containing material and will likely remain non-friable asbestos containing material during removal activities.
- C. Shut down and seal (with duct tape and 6-mil. poly sheeting) windows & roof level heating and ventilation air intakes that are in position to entrain dust or vapors from the roofing activities. Coordinate shut down of mechanical systems with Owner personnel. Where intake shutdown is

not feasible (as determined by Owner), supply and install horizontal or vertical extensions to relocate the opening of the air intake outside or above the regulated area so as not to entrain dust and vapor emissions from the roofing and re-roofing activity.

3.2 ASBESTOS-CONTAINING ROOFING MATERIAL REMOVAL

- A. All work shall be performed in accordance with OSHA Construction Industry Standard (29 CFR 1926.1101) and EPA NESPAP Standard (40 CFR 61) and applicable State of Connecticut Regulations.
- B. A Competent Person shall be on the job at all times to ensure proper work practices throughout the project.
- C. The Contractor shall utilize methods which do not sand, grind, cut or abrade the asbestos-containing roofing material. Should roofing materials be identified as regulated asbestos-containing material additional federal and state regulations shall apply.
- D. Pick up or HEPA vacuum asbestos-containing roofing debris from non-intact roofs prior to removal of the roofing. Bag debris for disposal.
- E. Utilize wet methods to remove asbestos-containing roofing materials unless such wet methods are not feasible or will create safety hazards, as determined and documented in writing by the competent person.
- F. HEPA vacuum asbestos-containing dust and debris left after the removal of asbestos-containing roofing. Where asbestos-containing built-up roofing is removed, HEPA vacuum the roof decking following roofing removal. Bag dust and debris for disposal.
- G. Remove asbestos-containing flashings and associated cements or mastics using manual methods (such as axe, knife, or shovel). Do not saw, sand, abrade or grind these materials.
- H. Asbestos-containing roofing material shall be carried or passed to the ground by hand or lowered to the ground by crane or hoist. Do not drop or throw asbestos-containing roofing material to the ground or into the dumpster. Transfer lowered asbestos-containing roofing material to the leak tight disposal dumpster carefully so as not to disperse dust.

3.3 DISPOSAL OF ASBESTOS-CONTAINING ROOFING MATERIAL

- A. Disposal of asbestos-containing and/or asbestos contaminated material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the Office of Solid Waste Management, Department of Environmental Protection, State of Connecticut, or other designated agency having jurisdiction over solid waste disposal.
- B. Asbestos warning signs must be attached to containers used to transport asbestos-containing waste. Warning signs shall be posted during loading and unloading of disposal containers. The signs must be posted so that they are plainly visible.
- C. Label containers of asbestos-containing waste material or wrapped asbestos-containing waste material using warning labels specified by OSHA 29 CFR 1926.1101. Label Asbestos-

containing waste material destined for off-site transport with the name of the waste generator and the location where the waste was generated.

3.4 CONTRACTOR PERSONAL AIR MONITORING RESPONSIBILITY

- A. Conduct air sampling to assure that workers are using appropriate respiratory protection in accordance with OSHA Construction Industry Standard 1926.1101. Documentation of air sampling results must be recorded at the work site within twenty-four (24) hours and shall be available for review until the job is complete.
- B. Produce a written initial asbestos exposure assessment prior to starting asbestos roofing removal work in compliance with OSHA Standard 1926.1101. Keep the exposure assessment on site for review by all concerned parties.

END OF SECTION 07 08 00

PART 1 - GENERAL

1.1 SCOPE

- A. Contractor shall meet the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3, and shall have a Competent Person in control on the job site at all times during work. This person must comply with applicable Federal, State and Local regulations which mandate work practices, and be capable of performing the work of this contract. The work specified herein shall be the performance of activities to control and eliminate lead-based paint hazards. These activities include; interim controls, abatement, and encapsulation of various materials containing or covered by lead-based paint
- B. The Owner will retain the services of a certified Inspector or Inspector Risk Assessor to monitor the work.
- C. Restore all work areas and auxiliary areas utilized during abatement to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor at no additional expense to the State. The Contractor is responsible for protecting all objects remaining in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all notifications, approvals and permits required.
 - 2. Provide, erect, and maintain all staging, planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all removed materials and debris shall become the property of the Contractor and shall be removed from the premises. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the State as to the storage location.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the State at no cost to the State.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on lead), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications.
 - B. The lead abatement work shall include the removal of lead-based paint, encapsulation of lead-based painted surfaces or stripping of building components containing lead-based paint as specified.
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- C. A project work order description shall be attached to each individual order identifying the scope of work and specific methods and procedures to be followed.
- D. For work that will disturb more than 6 square feet of interior lead based paint or more than 25 square feet of exterior lead based paint in a “child-occupied” structure, the following shall apply: The Contractor shall be certified under the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008. The Contractor shall follow specific work practice requirements of the RRP rule to prevent lead contamination during renovation, repair, and painting projects that disturb LBP in homes, child care facilities, and schools built before 1978. The Contractor shall have at least one “Certified Renovator” assigned to jobs where LBP is disturbed. **Note:** A child-occupied structure is one where a child under the age of 6 resides, including private residences, day care centers, and schools.

1.3 DEFINITIONS

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 soil with a durable covering such as asphalt.

Action Level - Employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) calculated as an eight hour time weighted average.

Abrasive Removal - A method of abatement that entails the removal of lead-based paint using mechanical removal equipment fitted with a high efficiency particulate air (HEPA) dust collection system.

Atomic Absorption Spectrophotometer (AA) - An instrument which measures the lead content in parts per million (ppm) using a lead source lamp and a flame capable of measuring the absorbed energy and converting it to concentration.

Biological Monitoring - The analysis of a person's blood to determine the level of lead contamination in the body.

Certified Renovator – An individual who is approved to carry out remodeling work practices described in the terms of the Lead, Renovation, Repair, & Painting (RRP) rule issued by the United States Environmental Protection Agency on April 22, 2008.

Chemical Removal - A method of abatement which entails the removal of lead-based paint using caustic or solvent based chemical paint strippers.

Competent Person - An individual who is capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Complete Abatement - Abatement of all lead-based paint inside or outside a dwelling or building and reduction of any lead-contaminated dust or soil hazards. All of these strategies require

preparation; cleanup; post abatement clearance testing; record keeping; and, if applicable, reevaluation and on-going monitoring.

Deteriorated Paint - Paint that is peeling, flaking, chalking, scaling, or chipping ; paint that is over a defective or deteriorated substrate; or paint that is damaged in any manner such that a child can get paint from the damaged area. Deteriorated paint shall be classified as either in fair condition or poor condition.

Elevated blood lead level - A blood lead concentration as defined in Regulations of the State of Connecticut. A blood lead concentration equal to or greater than forty (40) micrograms per deciliter ($\mu\text{g}/\text{dl}$) as defined in OSHA Standard 1926.62.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking of substances containing lead-based paint.

Enclosure - The use of rigid, durable construction materials that are mechanically fastened to the substrate to act as a barrier between the lead-based paint and the environment.

Engineering Controls - Measures implemented at the work site to contain, control, and/or otherwise reduce worker exposure to, and environmental releases of lead dust and debris.

Evaluation - Risk assessment, paint inspection, reevaluation, investigation, clearance examination, or risk assessment screen.

Fixed Object - A unit of equipment or furniture in the work area which cannot, as determined by the State, be removed from the work area.

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

1. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
2. Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
3. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
4. Is not excluded from regulation as a hazardous waste.

Inspection - A surface-by surface investigation to determine the presence of lead-based paint (in some cases including dust and soil sampling) and a report of the results.

Inspector - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to (1) perform inspections to determine and report the presence of lead-based paint on a surface-by-surface basis through on-site testing, (2) report the findings of such an inspection, (3) collect environmental

samples for laboratory analysis, (4) perform clearance testing, and (5) document successful compliance with lead-based paint hazard control requirements or standards.

Intact Surface - A defect-free surface with no loose, peeling, chipping, or flaking paint. Painted surfaces must be free from crumbling, cracking or falling plaster and must not have holes in them. Intact surfaces must not be damaged in any way.

Interim Controls - A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include specialized cleaning, repairs, maintenance painting, temporary containment, and management and resident education programs. Interim controls also 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.

Lead Abatement Plan - A written plan that identifies the location of intact and defective lead-based paint and describes how defective lead-based surfaces will be abated and how the environment, health, and safety will be protected.

Lead-Based Paint - Paint or other surface coatings that contain lead equal to or greater than 1.0 milligrams of lead per square centimeter or greater than 0.5% by weight.

Lead-Based Paint Hazard - Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health. Lead-based paint hazards include for example, deteriorated lead-based paint, leaded dust levels above applicable standards, and bare leaded soil above applicable standards.

Lead-Based Paint Hazard Control - Activities to control and eliminate lead-based paint hazards, including interim controls, abatement, and complete abatement.

Lead-Based Paint Abatement Planner/ Designer - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 for planning and designing lead-based paint abatement projects.

Lead Consultant - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health, Sections 20-478-1 through 20-478-3 to perform as an inspector, risk assessor or planner/designer

Lead Control Area - An area where lead abatement operations are performed where airborne concentrations of lead dust exceed or can reasonably be expected to exceed the permissible exposure limit. The lead control area is isolated by physical boundaries from occupied areas to prevent the spread of lead dust, paint chips, debris, and unauthorized entry of personnel.

Lead-Free Dwelling - A lead-free dwelling contains no lead-based painted surfaces and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Lead Hazard Screen - A means of determining whether residences in good condition should have a full risk assessment. Also called a risk assessment screen.

Lead-Safe Dwelling - A lead-safe dwelling contains intact, or encapsulated lead-based paint and has interior dust and exterior soil lead levels below the applicable CT DPH, HUD and EPA standards.

Manifest - The shipping document (EPA Form 8700-22 or a comparable form required by the State or locality) used for identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transport from the point of generation to the point of treatment, storage, or disposal.

Paint Film Stabilization - The process of wet scraping, priming, and repainting surfaces coated with deteriorated lead-based paint; paint film stabilization includes cleanup and clearance.

Paint Removal - An abatement strategy that entails the removal of lead-based paint from surfaces. For lead hazard control work, this can mean using chemicals, heat guns below 700 degrees Fahrenheit, and certain contained abrasive methods. Open flame burning, open abrasive blasting, sand blasting, water blasting and extensive dry scraping are prohibited paint removal methods.

Permissible Exposure Limit (PEL) - Fifty (50) micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air averaged over an 8 hour period as determined by 29 CFR 1926.62.

Personal Monitoring - Sampling of lead concentrations within the breathing zone of a worker to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62. Samples shall be representative of the employee's work tasks.

Reevaluation - In lead hazard control work the combination of a visual assessment, and collection of environmental samples performed by a certified risk assessor to determine if a previously implemented lead-based paint hazard control measure is still effective and if the dwelling remains lead-safe.

Replacement - A strategy of abatement that entails removing components such as windows, doors, and trim that have lead painted surfaces and installing new or de-lead components free of lead-based paint.

Risk Assessment - A on-site investigation of a residential dwelling to discover any lead-based paint hazards. Risk assessments include an investigation of the age, history, management, and maintenance of the dwelling, and the number of children under age 6 and women of childbearing age who are residents; a visual assessment; limited environmental sampling (i.e., collection of dust wipe samples, soil samples, and deteriorated paint samples); and preparation of a report identifying acceptable abatement and interim control strategies based on specific conditions.

Risk Assessment Screen - A type of risk assessment performed only in buildings in good condition using fewer samples but more stringent evaluation criteria (standards) to determine lead hazards.

Inspector Risk Assessor - An individual who meets the licensing and certification requirements of the State of Connecticut, Department of Public Health Sections 20-478-1 through 20-478-3 to (1) perform risk assessments, (2) identify acceptable abatement and interim control strategies for reducing identified lead-based paint hazards, (3) perform clearance testing and reevaluations, and (4) document the successful completion of lead-based paint hazard control activities.

Toxicity Characteristic Leaching Procedure (TCLP) - Toxicity characteristic leaching procedure utilizing EPA Test method SW-846, Method 1311 to determine whether waste can be classified as hazardous or construction waste for disposal purposes.

Visible Residue - Any paint debris, dust, or chips on surfaces within the work area where lead abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating lead dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous lead waste.

Wipe Test - A test used to determine the concentration of lead particles; used to determine whether clearance levels for lead abatement have been achieved. A wipe test assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of lead contained in that area.

X-ray Fluorescence (XRF) Analyzer - An analytical instrument which measures lead concentration of dried paint on surfaces or in a laboratory sample in milligrams per square centimeter (mg/cm²) using a radioactive source within the instrument. There are two types of XRF-analyzers commonly available which require distinct and different testing protocols - "direct read" and "spectrum analyzer".

1.4 REFERENCES

- A. The current issue of each document shall govern. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.
1. State of Connecticut, Department of Public Health Regulations (DPH)

Section 19a-111-1 through 19a-111-11 - Lead Poisoning Prevention And Control Regulations.

Section 20-478-1 through 20-478-3 - Lead Licensure and Certification Regulations.
 2. State of Connecticut, Department of Environmental Protection (DEP)

Section 22a-209-1 through 22a-209-16 - Solid Waste Management Regulations.

Section 22a-449(c)-100 through 22a-449(c)110 and 22a-449(c)-11 - Hazardous Waste Management Regulations.
 3. Occupational Safety and Health Administration (OSHA)

24 CFR 35 - Lead Based Paint Poisoning Prevention.

29 CFR 1910.134 - Respiratory Protection.

29 CFR 1910.146 - Permit-Required Confined Spaces.

29 CFR 1926.21 - Safety Training.

29 CFR 1926.28 - Personal Protective Equipment.
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29 CFR 1926.55 - Gases, Vapors, Fumes, Dusts, and Mists.

29 CFR 1926.57 - Ventilation.

29 CFR 1926.59 - Hazard Communication.

29 CFR 1926.62 - Lead.

29 CFR 1926.103 - Respiratory Protection.

4. Environmental Protection Agency (EPA)

40 CFR 260 - Hazardous Waste Management Systems: General.

40 CFR 261 - Identification and Listing of Hazardous Waste.

40 CFR 262 - Generators of Hazardous Waste.

40 CFR 263 - Transporters of Hazardous Waste

40 CFR 264 - Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 265 - Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

40 CFR 268 - Land Disposal Restrictions

40 CFR 745 - Subpart F - Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards Upon Sale or Lease of Residential Property.

40 CFR 745 - Subpart L - Lead-Based Paint Activities.

40 CFR 745 - Subpart Q - State and Indian Tribal Programs.

5. Department of Transportation (DOT)

49 CFR 172 - Hazardous Materials Tables and Hazardous Materials Communications Regulations

49 CFR 178 - Shipping Container Specification

6. Department of Housing and Urban Development (HUD)

Lead-Based Paint: Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.

1.5 DOCUMENTATION

A. Submit the following documentation to ensure compliance with applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

- HEPA Vacuum Equipment
- Respirators
- Lead Specific Detergent
- Lead Encapsulating Materials
- Portable Shower Units and Hand Washing Facilities
- Chemical Removal Agents
- Neutralizers for Chemical Removal Agents
- MSDS for All Materials

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Blood Lead Level
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Lead Abatement Plan

1. Copies of all required approvals and permits for disposal and transport of hazardous lead-bearing waste including the HW identification number of the waste hauler.
 2. Documentation from a physician certifying that all employees who may be exposed to airborne lead dust in excess of the background level have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health affects. In addition, document that personnel have received medical monitoring required in 29 CFR 1926.62. They shall also be informed of the specific types of respirators the employee shall be required to wear and the work he/she will be required to perform as well as special work place conditions such as high temperature, high humidity and chemical contaminants to which he/she may be exposed. Training certificates, licenses, respirator fit test certificate and medical records (including pre-abatement blood lead levels and medical clearance to wear a respirator) for each lead abatement worker shall be available.
 3. Documentation certifying that all employees have received training in the proper handling of materials that contain lead dust; understand the health implications and risks involved, including the illnesses possible from exposure to airborne lead dust fibers; understands the use and limits of respiratory equipment to be used; and understands the results of monitoring of airborne quantities of lead dust as related to health and respiratory equipment as indicated in 29 CFR 1926.62 on an initial and annual basis.
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4. Documentation of respiratory fit testing for all employees who must enter the Work Area. This fit testing shall be in accordance with qualitative procedures as detailed in 29 CFR 1926.62.
5. Qualifications of the laboratory and person proposed for air sampling to assure workers are using appropriate respiratory protection in accordance with 29 CFR 1926.62. The Project Monitor shall be licensed by Connecticut DPH. Include the name and address of the testing laboratory proposed to perform air monitoring on behalf of the Contractor, along with their NIOSH PAT Program I.D. number.
6. Establish and supervise in accordance with 29 CFR 1926.21, a program for the education and training of workers in the recognition, avoidance and prevention of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness and injury. Include any site specific information to address health and safety procedures unique to this project.
7. Establish a written Respiratory Protection Plan in accordance with 29 CFR 1910.134. This plan shall establish procedures governing the selection and use of respirators and shall include such information as training in the proper use of respirators; medical examination of workers to determine whether or not they may be assigned an activity where respiratory protection is required; training in proper use and limitations of respirators; respirator fit testing; regular inspection and evaluation of the continued effectiveness of the program; and other elements included in the standard.
8. Establish a written Hazard Communication Plan in accordance with 29 CFR 1910.1200(e) and 29 CFR 1926.59(e). This plan shall establish procedures describing how the facility will comply with the standard; describe how MSDS's will be obtained and made available for each hazardous chemical used in the work area; describe how information and training will be provided to employees; include a list of all toxic chemicals known to be present in the work place, cross referenced to the MSDS file; explain how workers will be informed of hazards connected with non-routine tasks, such as dealing with accidental spills and leaks; explain how workers will be informed of hazards associated with chemicals contained in unlabeled pipes; and contain information on how other contract employers will be informed about hazards their employees may encounter while working in the facility.
9. Written description of lead abatement activities planned detailing methods, equipment, engineering controls, crew size, employee job responsibilities, operating and maintenance procedures.

D. Records:

Worker Medical Records (including post-abatement blood-lead levels).
Worker Personal Air Sampling Results.
Certified Lead Waste Manifests.
TCLP Laboratory Results.

1.6 PERSONAL PROTECTION

- A. Prior to commencing work, instruct all workers in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment, including procedures unique to this project. A formal respiratory protection program must be implemented in accordance with 29 CFR 1926.62.
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- B. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134 and 29 CFR 1926.62. Provide appropriate respiratory protection equipment for each worker and ensure usage during potential lead dust exposure. Select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Provide an adequate supply of filter elements on the job whenever required for respirators in use.
- C. During the period of initial personal monitoring, personal exposure levels shall be presumed to be as specified in Table 1 with respiratory protection selected in compliance with Table 2. Following the initial personal monitoring period, select respirators using Table 2 and the personal monitoring data. Conducting a lead abatement activity without the use of a respirator is not permitted unless the personal monitoring data for that activity are all below the action level of 30 µg/cubic meter.

TABLE 1

<u>Activity</u>	<u>Presumed Exposure</u>
Removal of painted component	<50 µg/cubic meter
Manual demolition Manual scraping Manual sanding Chemical removal Manual wire brushing Encapsulation Cleanup of chips, dust, or contaminated soil Shrouded power sanding, grinding, wire brushing, or needle gun removal	<500 µg/cubic meter
Abrasive Blasting Welding Cutting, and Torch Burning	<2500 µg/cubic meter

TABLE 2

<u>Airborne Lead Dust Level</u>	<u>Required Respirator</u>
Not in excess of 500 µg/cubic meter(10xPEL)	Half-mask air-purifying respirator equipped with HEPA filters.
Not in excess of 2,500 µg/cubic meter(50xPEL)	Full face piece powered air- purifying respirator equipped with HEPA filters.

- D. Workers shall wear protective clothing in work areas where lead dust concentrations exceed permissible exposure limits established by OSHA. Protective clothing shall include impervious coveralls with elastic wrists and ankles, head covering, gloves and foot coverings. Ensure all contaminated protective clothing is disposed of as lead-contaminated waste. Launderable clothing must be handled and washed in accordance with 29 CFR 1926.62.
- E. Workers wearing half-mask respirators shall also wear safety glasses with side shields.
- F. Provide protective clothing impervious to caustic materials during chemical removal activity. Provide gloves of neoprene composition during chemical removal activity. Provide face shields when conducting chemical removal above eye level. Provide organic vapor cartridges in addition to HEPA cartridges when conducting chemical removal activity.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with lead shall be decontaminated or disposed of as lead waste.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints, shall be delivered to the job site with factory label indicating 6 mil.
 - B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finished or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
 - C. Protective clothing used during chemical removal operations shall be impervious to caustic materials. Gloves used during chemical removal shall be of neoprene composition with glove extenders.
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- D. Polyethylene disposable bags shall be six (6) mil and transparent in color.
- E. Detergent shall be a high phosphate content lead specific cleaning agent.
- F. Chemical paint removal agents shall not contain methylene chloride. Chemical removers used on masonry surfaces shall contain anti-stain formulation that inhibits discoloration of stone, granite, or brick. Chemical removers used on wood surfaces shall not raise or discolor the surface being abated.
- G. Chemical removal agent neutralizer shall be compatible with the substrate which they are applied to and the chemical stripper they are used in conjunction with.
- H. Encapsulants must appear on the State of Connecticut, Department of Public Health, Childhood Lead Poisoning Prevention Program Registry of Authorized Encapsulant Products. Only listed products are authorized for use in Connecticut by the Department of Public Health. Encapsulants are classified as cementitious or liquid. The project work order shall indicate the encapsulant type and location of application.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for lead removal:
- B. Air monitoring equipment shall be of the type and quantity required to monitor operations and conduct personnel exposure surveillance in accordance with OSHA requirements.
- C. Electrical equipment, protective devices and power cables shall conform to all applicable codes.
- D. Shower stalls and plumbing shall include sufficient hose length and drain system or an acceptable alternate. One shower stall shall be provided for each eight workers.
- E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of three micrometers in diameter or larger.
- F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
- G. For manual scraping activities, Contractor shall supply each worker with multiple newly sharpened scrapers on a daily basis.
- H. Sanders, grinders, wire brushes and needle gun removal equipment shall be equipped with a HEPA filtered vacuum dust pick-up system.
- I. Other materials such as lumber, nails and hardware necessary to construct and dismantle the decontamination enclosures and the barriers that isolate the work area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR LEAD ABATEMENT

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the work area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1926.62 at each work area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the work area a worker decontamination enclosure consisting of equipment room, shower room, and clean room in series. Access between rooms in the worker decontamination enclosure shall be through double flap curtained openings. The shower room shall be of sufficient capacity to accommodate the lead abatement workers employed at the project. Supply warm water to showers. Provide one shower for each eight workers. The change room and wash facilities shall be equipped with suitable hooks, lockers, shelves, etc., for workers to store personal articles and clothing. Shower and wash water shall be collected, filtered, and disposed of as specified in paragraph 3.16.
- C. Establish remote to the work area hand washing facilities. All workers shall wash prior to eating.
- D. No personnel shall be permitted to leave the work site or eat lunch unless first decontaminated by wet washing and HEPA vacuuming to remove all lead debris.
- E. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all lead debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
 - B. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the work areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of work area and occupied areas. Equip doors leading into the lead control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
 - C. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
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- D. Provide drop cloths to catch falling paint chips and chemical removal agents at interior work areas.
- E. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of work area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- F. Remove the building component or the LBP by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- G. Building components which have been removed shall be recycled where feasible.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work area preparation level shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. For dry waste place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. For liquid waste extend the end of the plastic a sufficient distance to contain the runoff and raise the edge of the sheets to trap liquid waste.
- D. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- E. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- F. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF LEAD WORK AREA FROM OCCUPIED AREAS

- A. Work area separation shall be as indicated in the individual work order. These levels correspond to tables 8.1, 8.2 and 8.3 of the HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.
- B. Occupied areas and/or building space not within lead control areas shall be separated from lead abatement work areas by means of airtight barriers.
- C. Do not impair all building exits simultaneously from any occupied building area.
- D. Shut all windows on the face of the building where lead paint removal is occurring. Seal all air conditioner intake grates and vents on the face of the building where lead paint removal is occurring.

3.6 CHEMICAL PAINT REMOVAL

- A. Apply chemical stripper in quantities and for duration's specified by manufacturer.
- B. Remove lead-based paint from surface down to bare substrate with no trace of residual pigment. Use sanding, hand scraping, and dental picks to supplement chemical methods as required to remove residual pigment.
- C. Apply neutralizer compatible with substrate and chemical agent to substrate following removal in accordance with manufacturer's instructions.
- D. Protect adjacent surfaces from damage by chemical removal methods.
- E. Maintain a portable eyewash station in the work area.

3.7 MECHANICAL PAINT REMOVAL

- A. Sanders, grinders, rotary wire brushes, or needle gun removers shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
 - B. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
 - C. Remove all lead based paint from surface down to bare substrate with no trace of residual pigment. Use chemical methods, hand scraping, and dental picks to supplement abrasive removal methods as required to remove residual pigment.
 - D. Protect adjacent surfaces from damage from abrasive removal techniques.
 - E. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to paint film stabilization or encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
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3.8 PROHIBITED PAINT REMOVAL METHODS

- A. The use of heat guns, or any blasting media, or power tool assisted grinding, sanding, cutting, or wire brushing without the use of HEPA vacuum dust collection systems to remove lead-based paint is prohibited.
- B. Welding or torch cutting of materials painted with lead-based paint is prohibited. Where cutting, welding, rivet busting, or torch cutting of materials is required, prior removal of the lead-based paint shall be performed in the affected area.
- C. Dry scraping.

3.9 SOIL REMOVAL

- A. Remove soil to a depth of 6 inches by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of paint chips are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all lead-based paint containing surfaces.
 - D. Enclosure materials shall be mechanically fastened to existing framing members. Caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.
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3.12 ENCAPSULATION

- A. Procedures for the application of encapsulation products shall be in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals.
- B. Application of encapsulants to friction or impact surfaces is prohibited.
- C. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose or peeling paint and wash down the surface with a lead specific detergent. Repair all substrate damage with an appropriate patching material.
- D. Prior to application of encapsulants, perform the tape, X-cut tape and patch tests in accordance with CT DPH guidance document Information on Applying Liquid Encapsulants to Interior Surfaces for Property Owners and Lead Professionals to determine if the surface is suitable for encapsulation.
- E. Follow the encapsulant manufacturers printed application instructions.
- F. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f) and 29 CFR 1926.62. This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove lead chips or dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Operational shower facilities, remote to the Lead Control Area, shall be provided by the contractor and maintained in working order such that any worker has the option of decontamination by showering. If air monitoring data by the contractor or Owner's inspector or risk assessor shows that employee exposure to airborne lead exceeds 50 µg/m³, the following mandatory showering conditions apply:
 - 1. Street clothes cannot be worn into the Lead Control Area and shall be stored in the change room. Workers shall wear disposable suits over clothing that stays on site in the change room, or disposable suits over nylon or Tyvek undergarments, or coveralls that are laundered on site.
 - 2. Street shoes cannot be worn into the Lead Control Area and shall be stored in the change room. Dedicated shoes that do not leave the Lead Control Area may be utilized. Work shoes covered by disposable booties may be utilized if the shoes are cleaned after each use and kept in the change room.
 - 3. Showers must be utilized.
- C. Ensure proper entry and exit procedures for all persons who enter and leave the Lead Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of paint chips and associated dust and debris. During clean-up, utilize rags and sponges wetted with lead-specific detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous lead-bearing waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 CLEARANCE

- A. A certified Inspector or Inspector Risk Assessor shall conduct all clearance testing inspections. Clearance dust sampling should be performed no sooner than 1 hour after completion of the final cleanup to permit the dust to settle.
- B. Visual Inspection Protocol: Visual inspection will verify the work has been completed and the area in which the work was performed does not contain visible dust.
- C. Dust Sampling Protocol: For interior abatement in facilities scheduled for reoccupancy where documentation that the work area has been adequately cleaned to meet CT DPH regulations Section 19a-111-4(e) is desired use the following testing protocol:
 - 1. Following the final visual inspection, a certified Inspector or Inspector Risk Assessor shall take lead wipe samples from the area that has undergone interior lead abatement activity.
 - 2. Following wipe analysis, if lead dust levels are in excess of the limits as set forth in the Regulations of Connecticut State Agencies, Section 19a-111-4.

The Contractor shall repeat HEPA vacuuming and wet-wiping the entire room. Repeat the testing and cleaning sequence until the standard for clearance has been achieved.

- D. For soil abatement or exterior abatement situations where documentation of soil decontamination is desired use the following testing protocol:
 - 1. For contaminated soil abatement areas a certified inspector or risk assessor shall take post-abatement soil samples (one (1) composite sample for every 500 square feet of abated soil area at randomly selected locations) and have the samples analyzed by atomic absorption for lead content. Samples shall be taken using a steel trowel to extract soil to a depth of four (4) inches. Three (3) randomly selected samples shall be taken from each 500 square foot area and the three (3) samples shall be mixed into one container for analysis.
 - 2. If any of the post-abatement soil samples exceed 2000 milligrams of lead per kilogram of soil analyze baseline soil samples to determine if the soil had a high lead level prior to the work.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous lead bearing material must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to leach lead at hazardous levels in excess of 5 mg/liter. The Contractor shall containerize and dispose of the following materials as hazardous lead waste at an EPA approved treatment, storage, and disposal facility:
1. Paint chips
 2. Paint dust
 3. Sludge from chemical stripping
 4. Dust from HEPA filters and from damp sweeping
 5. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 6. Disposable work clothes and respirator filters
 7. Contents of HEPA vacuums used on this project
 8. Polyethylene sheeting used during the course of chemical removal or heat gun removal
 9. All used duct tape
- C. Contractor shall transport the following materials generated during renovation activity to a scrap metal yard for recycling:
1. Any metal components painted with lead based paint
 2. Metallic lead components
- D. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
1. Polyethylene sheeting used in abatement activities other than chemical or heat gun removal
- E. Contractor shall collect the wash water generated by the worker shower, wash facilities, or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
1. 5 micron porosity in-line cartridge particulate filter followed by:
 2. Activated carbon filter in-line cartridge
- Hold the filtered water for testing by the State's Inspector or risk assessor prior to discharge to the sanitary sewer. The State's Inspector or risk assessor shall test the water and verify lead levels below 0.1 parts per million (ppm) and Ph between 6 and 8 prior to discharge. Water that fails the testing criteria shall be treated with sodium hydroxide, Ph adjusted, and retested. If the second test fails the 0.1 parts per million (ppm) of water test, Contractor shall filter waste water by reverse osmosis prior to testing and discharge to the sanitary sewer.
- F. All hazardous lead waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 29 CFR 1926.62 and 49 CFR 172 to identify the type of waste and the date the container was filled.
- G. The Contractor may not store containerized hazardous lead waste on the job site for in excess of 180 calendar days from the accumulation start date.
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- H. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- I. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

END OF SECTION 02 83 00

PART 1 - GENERAL

1.1 SCOPE

- A. The work specified herein shall include the remediation of building components contaminated with mold and the abatement of hazardous materials. Remediation and abatement activities shall be performed by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of mold and hazardous materials, and the subsequent cleaning of the affected environment. Specific requirements for mold and hazardous materials remediation will be established by the Owner's Environmental Consultant. These requirements are to include, but are not limited to: containment and negative air requirements; specific work practices or methods of accomplishing remediation and establishment of the clearance standard for reoccupancy.
- B. The Owner will retain the services of an Environmental Hygienist for protection of its interests and those using the building. Monitoring will be conducted as deemed necessary.
- C. Restore all work areas and auxiliary areas utilized during remediation to conditions equal to or better than original. Any damage caused during the performance of abatement activities shall be repaired by the Contractor (e.g., paint peeled off by barrier tape, nail holes, water damage, removal of ceiling tiles or concrete blocks, broken glass, etc.) at no additional expense to the Owner. The Contractor is responsible for protecting all objects in work areas that are permanent fixtures or too large to remove.
- D. The Contractor shall be responsible for the following general requirements:
 - 1. Obtain all approvals and permits, and submit all notifications required.
 - 2. Provide, erect, and maintain all planking, bracing, shoring, barricades, and warning signs.
 - 3. Unless otherwise specified, all equipment, fixtures, piping and debris resulting from demolition shall become the property of the Contractor and shall be removed from the premises.
 - 4. Materials to be reused shall be removed with the utmost care to prevent damage of any kind. All material to be reused shall be stored as directed. The Contractor shall coordinate with the Owner as to the storage location.
 - 5. Materials not scheduled for reuse shall be removed from the site and disposed of in accordance with all applicable Federal, State and Local requirements.
 - 6. Provide OSHA required personal monitoring to ensure adequate respiratory protection for each worker.
- E. Protect and preserve in operating condition, all utilities traversing the building and site. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Owner at no cost to the Owner.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall supply all labor, materials, equipment, services, insurance (with specific coverage for work on mold and hazardous materials), and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these specifications
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- B. A description of the scope of work will be attached to each individual project work order.
- C. The Contractor shall provide these services consistent with the level and skill ordinarily exercised by members of the profession currently practicing under similar conditions. In addition, the Contractor shall acquire professional training in mold abatement, and become familiar with technical and reference materials referenced in the State of Connecticut, Department of Public Health (DPH) “*CT Guidelines for Mold Abatement Contractors*”. This document refers readers to the most current version available of the *Institute for Inspection, Cleaning and Restoration Certification (IICRC), Standard and Reference Guide for Professional Mold Remediation, S520*, which provides a detailed discussion about the technical aspects of mold abatement.
- D. The Contractor shall provide these services in accordance with the guidelines established in the documents listed below, and any subsequent updated re-issues of the documents:
- Connecticut Guidelines for Mold Abatement Contractors, 2006, Connecticut Department of Public Health (DPH);
 - Standard and Reference Guide for Professional Mold Remediation, S520, December 2003, Institute for Inspection, Cleaning and Restoration Certification (IICRC) ;
 - Guidelines on Assessment and Remediation of Fungi in Indoor Environments, New York City Department of Health, 2006;
 - Mold Remediation in Schools and Commercial Buildings, March 2001, United States Environmental Protection Agency (US EPA);
 - Fungal Contamination in Buildings: A Guide to Recognition and Management, Health Canada, 1995;
 - The Industrial Hygienist's Guide to Indoor Air Quality Investigations, 1993 (AIHA);
 - Building Air Quality, A Guide for Building Owners and Facility Managers, 1991 (US EPA);
 - Bioaerosols: Assessment and Controls, 1999, American Conference of Governmental Industrial Hygienists (ACGIH);
 - Field Guide for the Determination of Biological Contaminants in Environmental Samples, 1996, American Industrial Hygiene Association (AIHA);
 - Complete School Guidance Document, DPH;
 - Ventilation for Acceptable Indoor Air Quality, ANSI/ASHRAE Standard 62-2001;
 - Indoor Air Quality – A Systems Approach, Sheet Metal and Air Conditioning Contractors’ National Association (SMACNA);
 - IAQ Guidelines for Occupied Buildings Under Construction, SMACNA.
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1.3 DEFINITIONS

Accessible - A space easily accessed, and which can be entered or seen without demolition.

Competent Person - An individual who is capable of identifying existing and predictable mold and/or other hazardous materials in the surroundings or working conditions and who has authorization to take prompt corrective measures to eliminate them.

Concealed Space - Space, which is out of sight. Examples of a concealed space include area above hard ceilings; below floors; between double walls; furred-in areas; pipe and duct shafts; and similar spaces which cannot be examined without invasive removal of building components or disturbance of finishes.

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

DEP - The Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT 06106.

DPH - The Connecticut Department of Public Health, 410 Capitol Avenue, P.O. Box 340308, Hartford, CT 06134-0308.

Differential Pressure - A difference in the static air pressure between the Work Area and occupied areas, and is developed by the use of HEPA filtered exhaust fans. This differential is generally in the range of 0.02 to 0.04 inches of water column.

Encapsulation - The resurfacing or covering of surfaces, and sealing or caulking with durable materials so as to prevent or control chalking or flaking.

Engineering Controls - Controls to include, but not be limited to, pressure differential equipment, decontamination enclosures, critical barriers and related procedures.

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

Exposed - Open to view.

Finished Space - Space used for habitation or occupancy where rough surfaces are plastered, paneled or otherwise treated to provide a pleasing appearance.

Fixed Critical Barrier - Barrier constructed of 2" x 4" wood or metal framing 16" O.C., with 1/2" plywood on the occupied side and two layers of six (6) mil polyethylene sheeting on the Work Area side to prevent unauthorized access or air flow.

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

Hazardous Waste: As defined in the Resource Conservation and Recovery Act (RCRA) the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity; concentration; or physical, chemical, or infectious characteristics may cause, or significantly contribute to increases in mortality, increase in serious and irreversible or incapacitating but reversible illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed. As defined in the regulations, solid waste is hazardous if it meets one of four conditions:

- Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24),
- Has been listed as hazardous (40 CFR Section 261.31 through 261.33),
- Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste), or
- Is not excluded from regulation as a hazardous waste.

HEPA Filter Equipment - High-efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system. Filters shall be of 99.97 percent efficiency for retaining fibers of 0.3 microns in diameter or larger.

Inaccessible - A space not accessible, and which cannot be entered or seen without demolition.

Mini-Containment - A procedure using a single layer of polyethylene sheeting to contain the Work Area. Access to the mini-containment is controlled by an air lock, which also serves as a Holding Area.

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

Owner or Operator of a Demolition or Renovation Activity - Any person who owns, leases, operates, controls or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls or supervises the demolition or renovation, or both.

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

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

Visible Residue - Any debris, dust, or chips on surfaces within the work area where abatement has taken place and which is visible to the unaided eye.

Wet Cleaning - The process of eliminating dust and chip contamination from surfaces by using cloths, mops, or other cleaning tools which have been dampened with water and afterwards disposing of the cleaning items as hazardous waste.

Wipe Test - A test used to determine the concentration of dust particles; used to determine whether clearance levels for mold and/or hazardous materials abatement have been achieved. A wipe test

assimilates the dust from a measured surface area of about one square foot and is laboratory analyzed to determine the quantity of mold and/or hazardous materials contained in that area.

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

1.4 REFERENCES

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

1. Occupational Safety and Health Administration (OSHA)

29 CFR 1926.21 - Safety Training and Education.

29 CFR 1926.32 - Definitions.

29 CFR 1926.51 - Sanitation.

29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists.

29 CFR 1926.59 - Hazard Communication.

29 CFR 1926.200 - Accident Prevention Signs and Tags.

29 CFR 1926.417 - Lockout and Tagging of Circuits.

2. American National Standards Institute (ANSI)

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

ANSI Z88.2 - Respiratory Protection.

3. American Society of Testing and Materials (ASTM)

ASTM E 84 - Surface Burning Characteristics of Building Materials.

ASTM E 96 - Water Vapor Transmission of Materials.

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

4. Underwriters Laboratories, Inc. (UL)

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

1.5 DOCUMENTATION

A. Submit two copies of the following documentation to the Owner to ensure compliance with the applicable regulations. An up to date copy shall be retained at the job site at all times.

B. Manufacturer's Catalog Data:

- Local Exhaust Equipment
- Respirators
- Pressure Differential Automatic Recording Instrument
- Polyethylene Sheeting
- Airless Sprayers
- MSDS for All Materials Delivered to the Site
- Biocides
- Cleaning Chemicals
- Encapsulating Materials
- HEPA Vacuum Equipment

C. Statements:

- DEP Hazardous Waste ID for Generator
- Hazardous Waste Transport and Disposal Permits
- Worker Training Certification
- Worker Medical Certification
- Worker Respiratory Fit Testing
- Laboratory Certification
- Safety plan
- Respirator Protection Plan
- Hazard Communication Plan
- Site Specific Mold and/or Other Hazardous Materials Abatement Plan

D. Records:

- Sign-in/out Logs
- Personal Air Sampling Results
- Waste Shipment Records
- Pressure Differential Recording Data
- NPE Inspection and Smoke Test Logs

1.6 PERSONNEL PROTECTION

- A. Respiratory protection shall meet the requirements of OSHA as required in 29 CFR 1910.134. Provide appropriate respiratory protection for each worker and ensure usage during potential mold and/or other hazardous materials exposure whenever engineering and work practice controls are not adequate to prevent atmospheric contamination at the job site. Select respirators from among those approved as being acceptable for protection by the National Institute for Occupational Safety and Health (NIOSH). Provide an adequate supply of filter elements on the job whenever required for respirators in use.
 - B. Provide dermal and respiratory protection for all workers to wear in the Work Areas. The selection of personal protective equipment depends on the anticipated exposure, types of microbial and/or hazardous materials contamination, activities to be completed and potential hazards of chemicals that may be used in the remediation process. Personal protective equipment can consist of: respirator, eye protection, disposable impervious coveralls (including hood and booties) with elastic wrists and ankles, foot protection, hand protection, head protection, and hearing protection. In accordance with 29 CFR 1910.32, each worker shall be provided with the necessary personal protective equipment to reduce the risk of exposure to chemical, physical, or biological hazards.
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1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name and product technical description. Do not use damaged or deteriorating materials. Material that becomes contaminated with mold and/or hazardous waste shall be decontaminated or disposed of appropriately.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Fire retardant polyethylene sheet in roll size to minimize the frequency of joints shall be delivered to job site with factory label indicating six (6) mil.
- B. Tape shall be capable of sealing joints in adjacent polyethylene sheets and for attachment of polyethylene sheet to finish or unfinished surfaces. Tape must be capable of adhering under both dry and wet conditions.
- C. Scrub brushes, disposable sponges and towels as appropriate for the work.
- D. Biocides shall be specific for the intended purpose of cleaning mold contamination from building components or materials.
- E. Containers must be impermeable and shall be both air and watertight.

2.2 TOOLS AND EQUIPMENT

- A. Tools and equipment shall be suitable for the work.
 - B. Protective clothing, respirators, filter cartridges, air filters and sample filter cassettes shall be provided in sufficient quantities for the project.
 - C. Electrical equipment, protective devices, emergency generators and power cables shall conform to all applicable codes.
 - D. Exhaust air filtration units shall be equipped with HEPA filters capable of providing sufficient air exhaust to create a minimum pressure differential of 0.02 inches of water column, and to allow a sufficient flow of air through the area. An automatic warning system shall be incorporated into the equipment to indicate pressure drop or unit failure. No air movement system or air filtering equipment shall discharge unfiltered air outside the Work Area.
 - E. Vacuum units, of suitable size and capabilities for the project, shall have HEPA filters capable of trapping and retaining at least 99.97 percent of all monodispersed particles of 0.3 microns in diameter or larger.
 - F. Ladders and/or scaffolds shall be of adequate length, strength and sufficient quantity to support the work schedule. Scaffolds shall be equipped with safety rails and kick boards in compliance with OSHA requirements.
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- G. Removal equipment (including, but not limited to sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust pick-up system.
- H. Other materials such as lumber, nails and hardware necessary to construct and dismantle the barriers that isolate the Work Area shall be provided as appropriate for the work.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS FOR REMEDIATION

- A. A Competent Person shall be on the job at all times to ensure the establishment of proper separation of the Work Area from occupied areas, and proper work practices are followed through project completion.
- B. Post warning signs meeting the requirements of OSHA 29 CFR 1910.37 (egress means and exits) and OSHA 29 CFR 1910.145 (biological hazards, caution, and dangers) at each Work Area. In addition, signs shall be posted at all approaches to areas so that employees may read the sign and take the necessary protective steps before entering the area.
- C. Maintain emergency and fire exits from the building satisfactory to fire officials and the Owner.
- D. Containerize waste material removed daily. Do not allow debris to remain on the floor. Fill disposal containers as removal proceeds, seal filled containers.

3.2 WORKER PROTECTION

- A. Hygiene facilities shall be provided as indicated in the individual work order.
- B. Establish remote to the Work Area hand washing facilities. All workers shall wash prior to eating.
- C. No equipment shall be permitted to leave the work site unless first decontaminated by wet washing or HEPA vacuuming to remove all mold and/or other hazardous material debris.

3.3 PREPARATION OF INTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
 - B. Prior to beginning work, the Owner Construction Administrator, Consultant and Contractor shall perform a visual survey of each Work Area and list all pre-existing damage to building components. The Contractor shall submit to the Construction Administrator a list, of pre-existing damaged areas.
 - C. When feasible, shut down and lock out electrical power, including all receptacles and light fixtures. Protect receptacles and light fixtures remaining in the Work Area with six -(6) mil polyethylene and seal with tape. Remove or protect fire alarm system components remaining in the area with six- (6) mil polyethylene and seal with tape. Coordinate all power and fire alarm isolation with the Owner.
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- D. Provide temporary power and lighting and ensure safe installation, including ground fault protection, of temporary power sources and equipment in compliance with applicable electrical code and OSHA requirements. The Contractor is responsible for proper connection and installation of electrical wiring.
- E. Seal off all openings including, but not limited to, windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetration of the Work Areas, with polyethylene sheeting and seal with tape. Doorways and corridors which will not be used for passage during work must be sealed with barriers as required for separation of Work Area and occupied areas. Equip doors leading into the control area with 2 overlapping sheets of 6 mil polyethylene sheeting attached at the top and one side.
- F. As indicated in the individual work order, occupied areas and/or building space not within control areas may be separated from abatement Work Areas by means of airtight barriers.
- G. Cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- H. Where floors are carpeted, preferentially remove carpeting following pre-cleaning and replace with new carpeting following abatement. Where replacement is not feasible, cover floor of Work Area, following pre-cleaning, with one layer of 6 mil polyethylene sheeting, duct taped securely at the perimeter.
- I. Remove the building component by approved methods which will provide the least disturbance to the substrate material and the environment. The description of work attached to the project work order shall indicate the abatement strategy.
- J. Building components which have been removed shall be recycled where feasible.
- K. Conspicuously label and maintain emergency and fire exits satisfactory to the Owner.

3.4 PREPARATION OF EXTERIOR WORK AREAS

- A. Work Area preparation level shall be as indicated in the individual work order.
- B. Place 6-mil polyethylene sheeting on the ground extending out from the foundation at least 5 feet and an additional 3 feet for each story to a maximum of 20 feet. Secure at the foundation by placing weights on the plastic. Erect vertical shrouds to contain any potential dust release into the adjacent environment.
- C. Seal off all windows, openings, vents and HVAC equipment with critical barriers.
- D. Erect scaffolding, lifts or ladders adjacent to the exterior surface being abated.
- E. Cover all shrubs and bushes to prevent damage from liquid waste or dust.

3.5 SEPARATION OF WORK AREA FROM OCCUPIED AREAS

- A. Work Area separation shall be as indicated in the individual work order.
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- B. As indicated in the individual work order, occupied areas and/or building space shall be separated from Work Areas by means of airtight barriers. Barriers at openings with dimensions exceeding two (2) feet in both directions shall be blocked with fixed critical barriers.
- C. Do not impair all building exits simultaneously from any occupied building area. Where normal exits have been blocked by the abatement work, provide temporary exit signs directing building occupants to the nearest available exit location.
- D. Shut all windows on the face of the building where abatement is occurring. Seal all air conditioner intake grates and vents on the face of the building where abatement is occurring.
- E. As indicated in the individual work order, create a pressure differential between the Work Area and occupied areas by the use of acceptable pressure differential equipment.

3.6 MECHANICAL MOLD AND/OR HAZARDOUS MATERIAL REMOVAL

- A. Remove building components or materials in accordance with the specific description of work to be accomplished. Methods for component removal shall be appropriate for the work and are to be performed in a manner to minimize the risk of contamination in other areas of the building.
- B. Removal equipment (including, but not limited to, sanders, grinders, and pneumatic hammers) shall be equipped with a HEPA filtered vacuum dust collection system. Cowling on the dust collection system for orbital-type tools must be capable of maintaining a continuous tight seal with the surface being abated. Cowling on the dust collection system for reciprocating-type tools shall promote an effective vacuum flow of loosened dust and debris. Inflexible cowlings may be used on flat surfaces only. Flexible contoured cowlings are required for curved or irregular surfaces.
- C. HEPA vacuum shall be high performance designed to provide maximum static lift and maximum vacuum system flow at the actual operating vacuum condition with the shroud in use. HEPA vacuum shall be equipped with a pivoting vacuum head.
- D. As indicated in the individual work order, remove all mold and/or hazardous materials from surface down to bare substrate with no trace of residual material. Use wet wiping, wet sponging, wet scraping, and wet brushing (with a nylon brush) to supplement abrasive removal methods as required to remove residual material (wire brushes are not permitted).
- E. Protect adjacent surfaces from damage from abrasive removal techniques.
- F. Perform wet scraping by using a spray bottle or sponge attached to a paint scraper. Wet scraping shall be utilized to prepare surfaces prior to encapsulation. Scraper blades should be kept sharp. After scraping, and prior to encapsulation, wet sand surfaces to smooth any rough areas.
- G. During removal, spray the work area with water using airless spray equipment capable of providing a "mist" application to reduce airborne dust. Hose length shall be sufficient to reach all of the work area. Do not "flood" the area with hose type water supply equipment with the potential to create water releases from the work area.

3.7 PROHIBITED MOLD AND/OR HAZARDOUS MATERIAL REMOVAL METHODS

- A. Dry scraping.
- B. Wire brushes.

3.8 CLEANING OF CONTAMINATED BUILDING COMPONENTS OR MATERIALS

- A. Clean building components or materials in accordance with the specific description of work provided by the Owner Environmental Hygienist. Methods for cleaning shall be appropriate for the work to be performed.
- B. All surfaces from which mold and/or other hazardous materials have been removed shall be wet brushed, using a nylon brush, wet wiped and sponged or cleaned by an equivalent method to remove all visible material (wire brushes are not permitted). Cleaning shall also include the use of HEPA filtered vacuum equipment
- C. Cleaning shall proceed in a manner such that dislodged materials will be collected on rags or by the HEPA vacuum equipment. Methods that agitate contamination are not permitted.
- D. Biological agents shall be used in strict accordance with the manufacturer's printed instructions. Biological agents may only be applied to clean or cleaned surfaces.

3.9 SOIL REMOVAL

- A. As indicated in the individual work order, remove soil to the indicated depth by mechanical or hand methods. Contaminated soil shall be placed directly into containers prior to transporting to the waste disposal site.
- B. After completion of soil removal, HEPA vacuum adjacent concrete or asphalt until no visible accumulations of hazardous materials are present.

3.10 COMPONENT REPLACEMENT

- A. Wet down components which are to be removed to reduce the amount of dust generated during the removal process.
- B. Remove components utilizing hand tools, and follow appropriate safety procedures during removal. Remove the building component by approved methods which will provide the least disturbance to the substrate material. Do not damage adjacent surfaces.
- C. Initiate cleanup immediately after component removals have been completed. Remove any dust located behind the component removed.

3.11 ENCLOSURE

- A. Materials and methods of enclosure shall be as specified in the individual work order.
 - B. All surfaces to be enclosed shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose hazardous materials and appropriately wash down the surface. Repair all substrate damage with an appropriate patching material.
 - C. Prior to enclosure, label all mold and/or hazardous-material containing surfaces.
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- D. Enclosure materials shall be mechanically fastened to existing framing members. As indicated in the individual work order, caulk all perimeters of enclosure materials. Do not damage adjacent surfaces.

3.12 ENCAPSULATION

- A. All surfaces to be encapsulated shall be free of dirt, dust, mildew, scale, rust or other deleterious material. Properly remove all loose mold and/or hazardous materials. Repair all substrate damage with an appropriate patching material.
- B. Follow the encapsulant manufacturers printed application instructions.
- C. Do not damage adjacent surfaces.

3.13 DECONTAMINATION PROCEDURES

- A. All workers must wash upon leaving the work area. Wash facilities will be provided by the abatement contractor in compliance with 29 CFR 1926.51(f). This wash facility will consist of, at least, running potable water, towels, soap, and a HEPA vacuum. Upon leaving the work area, each worker will HEPA vacuum gross debris from work suit, remove and dispose of work suit, wash and dry face and hands, and vacuum clothes. Do not remove dust by blowing or shaking of clothing. Wash water shall be collected, filtered, and disposed of in accordance with all applicable regulations.
- B. Ensure proper entry and exit procedures for all persons who enter and leave the Control Area.

3.14 CLEANING

- A. Remove and containerize all visible accumulations of mold and/or hazardous material dust and debris. During clean-up, utilize rags and sponges wetted with detergent and water to minimize dust levels.
- B. Mop heads, waste water, broom heads, rags, and sponges used in the clean-up activity shall be disposed of as hazardous waste.
- C. Sealed disposal containers and all equipment used in the work area shall be included in the clean-up.
- D. Clean all surfaces with HEPA filtered vacuum equipment prior to wet cleaning all surfaces within regulated area.

3.15 POST-REMEDICATION ASSESSMENT

- A. Specific requirements prior to reoccupancy of the remediated area will be established by the Owner Environmental Consultant.
 - B. The post-remediation assessment will include a visual inspection, bioaerosol sampling and ~~dust~~ wipe sampling. The extent of sampling and specific cleanliness requirements for each project will be established prior to remediation. Sampling requirements will be consistent with the level of contamination remediated.
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3.16 WASTE DISPOSAL

- A. Disposal of hazardous material shall occur at an authorized site and must be in compliance with the requirements of, and authorized by the State of Connecticut, Department of Environmental Protection, Office of Solid Waste Management or other designated agency having jurisdiction over solid waste disposal and the with the requirements of the Resource Conservation and Recovery Act (RCRA).
- B. The following materials are likely to contain hazardous materials. The Contractor shall containerize and dispose of the following materials as hazardous waste at an EPA approved treatment, storage, and disposal facility:
 - 1. Dust from HEPA filters and from damp sweeping
 - 2. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials using for testing, abatement, and clean up
 - 3. Disposable work clothes and respirator filters
 - 4. Contents of HEPA vacuums used on this project
 - 5. All used duct tape
- C. Contractor shall wipe the following materials clean of all dust, dirt, and debris and dispose of the material as construction debris:
 - 1. Polyethylene sheeting used in abatement activities
- D. Contractor shall collect the wash water generated by the wash facilities or steam cleaning operations in 55 gallon drums and filter the water using a 2 stage filtration system composed of:
 - 1. 5 micron porosity in-line cartridge particulate filter followed by:
 - 2. Activated carbon filter in-line cartridge
- E. All hazardous waste shall be containerized in accordance with 49 CFR 178. Label and placard each container in accordance with 49 CFR 172 to identify the type of waste and the date the container was filled.
- F. The Contractor may not store containerized hazardous waste on the job site for in excess of 180 calendar days from the accumulation start date.
- G. Contractor shall utilize a certified transporter for hazardous waste in compliance with DOT 49 CFR 172.
- H. Contractor shall submit the completed Uniform Hazardous Waste Manifest, EPA Form 8700-22 for each load of hazardous waste within 30 calendar days following the date the load leaves the site.

3.17 REINSTALLATION OF DISPLACED EQUIPMENT

- A. After reoccupancy is granted, re-secure mounted items removed during the course of the work to their former positions.
- B. Re-establish to proper working order all HVAC, mechanical and electrical systems including lights, exit lights, and sound systems.

3.18 REMOVAL OF HAZARDOUS MATERIALS

- A. Removal of fluorescent fixture components may require special handling and disposal. Remove and recycle fluorescent lamps. Identify and separate PCB-containing and non-PCB-containing ballasts. Remove, handle, and dispose of PCB's in accordance with 40 CFR 761 and applicable federal, state, and local regulations. Unless labeled otherwise, all fluorescent light fixture ballasts are assumed to contain PCB's. Accomplish ballast removal within a contained area. Workers shall be trained in accordance with 29 CFR 1910.120 and shall wear appropriate personal protective equipment while removing PCB-containing ballasts from fixtures. Remove ballasts and wipe fixtures to remove PCB contamination or dispose of entire fixture as PCB contaminated. Ballasts and PCB contaminated rags and protective clothing shall be placed in appropriately labeled hazardous waste storage containers and destroyed in accordance with all applicable regulations. Uncontaminated light fixtures may be disposed of as construction debris. Disposal of regulated components shall be in accordance with State and Federal regulations.

- B. Removal of other materials identified during mold remediation work shall be accomplished in accordance with all applicable Federal and State regulations.

END OF SECTION 02 85 00

**EXHIBIT B-1
ASBESTOS**

Manafort								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
ASBESTOS REMOVAL								
AR-001	CLEAN-UP OF ACM DEBRIS BY HEPA VACUUMING		SF	\$0.50				
AR-002	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS (FULL CONTAINMENT - < 6" DIA)		LF	\$2.00				
AR-003	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - 6" - 12" DIA)		LF	\$3.00				
AR-004	REMOVAL OF PIPE INSULATION INCLUDING FITTINGS(FULL CONTAINMENT - >12" DIA)		LF	\$4.00				
AR-005	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - FIRST 25)		EA	\$27.00				
AR-006	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY BETWEEN 25-50)		EA	\$23.00				
AR-007	GLOVE BAG REMOVAL OF PIPE OR FITTING INSULATION (MINI-CONTAINMENT - QUANTITY IN EXCESS OF 50)		EA	\$19.00				
AR-008	REMOVAL OF EQUIPMENT INSULATION		SF	\$5.00				
AR-009	REMOVAL OF HVAC DUCT INSULATION		SF	\$5.00				
AR-010	REMOVAL OF HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$4.00				
AR-011	REMOVAL OF RESILIENT FLOORING INCLUDING MASTIC		SF	\$1.50				
AR-012	REMOVAL OF RESILIENT FLOORING (NO MASTIC)		SF	\$1.00				
AR-013	REMOVAL OF SPRAYED ON FIREPROOFING		SF	\$8.00				
AR-014	REMOVAL OF PLASTER CEILING SYSTEM (INCLUDING BLACK IRON AND METAL LATH)		SF	\$4.00				
AR-015	REMOVAL OF ACOUSTIC OR METAL PAN CEILING SYSTEM (INCLUDING GRID)		SF	\$2.75				
AR-016	REMOVAL OF ACOUSTIC CEILING PANELS (CLEAN GRID FOR REUSE)		SF	\$3.50				
AR-017	REMOVAL OF ACOUSTIC PLASTER FINISH MATERIAL (SCRAPE)		SF	\$5.00				
AR-018	PATCH AND/OR SEAL DAMAGED INSULATION		SF	\$1.50				
AR-019	REMOVAL OF CONTAMINATED SOIL (2" DEPTH)		SF	\$2.50				
AR-020	REMOVAL OF TRANSITE MATERIAL		SF	\$2.00				
AR-021	REMOVAL OF ROOFING OR ROOF FLASHING MATERIAL		SF	\$3.00				
AR-022	REMOVAL OF UNDERGROUND PIPE OR PIPE INSULATION (INCLUDING HAND EXCAVATION)		LF	\$15.00				
AR-023	REMOVAL OF CARPET OVER RESILIENT FLOORING		SF	\$1.00				
AR-024	REMOVAL OF WALL BASE AND MASTIC		LF	\$2.00				
AR-025	REMOVAL OF DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$1.00				
AR-026	REMOVAL OF CMU WALL		SF	\$3.00				
AR-027	PREP WORK AREA		SF	\$1.85				
AR-028	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$3.25				
AR-029	SELECTIVE DEMOLITION TO ACCESS CONCEALED ACM		SF	\$2.25				
AR-030	REMOVAL OF FLOOR LEVELING MATERIAL		SF	\$1.00				

EXHIBIT B-1 ASBESTOS

Manafort									
MISCELLANEOUS ITEMS									
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$450.00					
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$325.00					
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA						
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY						
MI-007	DISPOSAL OF ACM WASTE (INCLUDES TRANSPORTATION)	COST+10%	CY						
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY						
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY						
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	58					
MI-013	FIXED SCAFFOLDING	COST+10%	SF						
MI-014	EXCAVATION TO EXPOSE UNDERGROUND PIPE	COST+10%	CY						
MI-015	PROJECT NOTIFICATION AND FEES	COST+10%	EA						
MI-016	PROJECT BOND (3% OF CONTRACT)	COST+10%	EA						
REWORK ITEMS									
RW-001	REINSULATE PIPE 1" THICK FIBERGLAS ASJ		SF	\$100.00					
RW-002	REINSULATE PIPE 1 1/2" THICK FIBERGLAS ASJ		SF	\$100.00					
RW-003	REINSULATE PIPE 2" THICK FIBERGLAS ASJ		SF	\$100.00					
RW-004	REINSULATE PIPE FITTING 1" THICK FIBERGLAS ASJ		EA	\$500.00					
RW-005	REINSULATE PIPE FITTING 1 1/2" THICK FIBERGLAS ASJ		EA	\$500.00					
RW-006	REINSULATE PIPE FITTING 2" THICK FIBERGLAS ASJ		EA	\$500.00					
RW-007	REINSULATE MECHANICAL EQUIPMENT 3 PCF, 2" THICK		SF	\$100.00					
RW-008	REINSULATE HVAC DUCT SYSTEM (FLEXIBLE DUCT WRAP) 0.75 PCF, 1 1/2" THICK		SF	\$100.00					
RW-009	REINSULATE HVAC DUCT SYSTEM (RIGID BOARD) 3 PCF, 1 1/2" THICK		SF	\$100.00					
RW-010	REPLACE HVAC DUCT SYSTEM FLEXIBLE CONNECTOR		SF	\$100.00					
ESCALATION FACTORS									
EF-1	WORK SURFACES 10-20' HIGH		1.15						
EF-2	WORK SURFACES OVER 20' HIGH		1.30						
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)		1.30						
EF-4	EMERGENCY RESPONSE (<24 HOUR)		1.30						
EF-5	CONFINED SPACE WORK		1.15						
EF-6	REMOVAL OF MULTIPLE LAYERS OF RESILIENT FLOORING (EACH ADDITIONAL LAYER)		1.50						
EF-7	REMOVAL ON LIVE STEAM SYSTEM		1.25						
EF-8	EXTERIOR WORK		1.30						
			WORK ORDER TOTAL						

**EXHIBIT B-2
LEAD**

Manafort							
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	Unit Cost \$0.00			
	<u>PAINT REMOVAL</u>						
SP-001	REMOVE LOOSE PAINT FROM WALLS OR CEILINGS (WET SCRAPING OR BRUSHING)		SF	\$1.00			
SP-002	STRIP PAINT FROM FLAT SURFACES		SF	\$4.00			
SP-003	STRIP PAINT FROM COLUMNS AND STRUCTURAL FRAMING MEMBERS		SF	\$5.00			
SP-004	STRIP PAINT FROM STAIR TREADS, RISERS AND STRINGERS		SF	\$5.50			
SP-005	STRIP PAINT FROM TRIM		LF	\$3.00			
SP-006	STRIP PAINT FROM DOORS (DOOR OPENING SIZE)		SF	\$6.00			
SP-007	STRIP PAINT FROM WINDOW (WINDOW SIZE)		SF	\$10.00			
SP-008	STRIP PAINT FROM RADIATOR		SF	\$11.00			
SP-009	STRIP PAINT FROM HANDRAIL		LF	\$8.00			
SP-010	STRIP PAINT FROM PIPING		SF	\$7.00			
SP-011	CLEAN-UP OF MATERIALS CONTAINING LEAD (DIRT, BUILDING DEBRIS, ETC.)		CF	\$8.00			
SP-012	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$1.85			
SP-013	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$2.85			
SP-014	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$5.00			
	<u>COMPONENT REPLACEMENT</u>						
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.85			
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.65			
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.75			
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.90			
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$1.00			
CR-006	REMOVE RADIATOR		SF	\$1.00			
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$11.00			
	<u>MISCELLANEOUS ITEMS</u>						
MI-001	MOBILIZATION (1 PER WORK AREA)		EA	\$450.00			
MI-002	WORKER DECON (1 PER WORK AREA)		EA	\$325.00			
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF	\$1.85			
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF	\$3.25			
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY				
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY				
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR	\$58.00			

**EXHIBIT B-2
LEAD**

Manafort									
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF	\$1.00					
MI-012	ENCAPSULATION UTILIZING HEAVY BODIED REINFORCED COATING SYSTEM		SF	\$2.50					
MI-013	FIXED SCAFFOLDING	COST+10%	SF						
<u>REWORK ITEMS</u>									
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF	\$5.00					
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA						
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA						
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA						
RW-015	PAINT FLAT SURFACES (PRIMER + FINISH COAT)		SF	\$1.00					
RW-016	PAINT COLUMNS AND STRUCTURAL FRAMING MEMBERS (PRIMER + FINISH COAT)		SF	\$5.00					
RW-017	PAINT STAIR TREADS, RISERS AND STRINGERS (PRIMER + FINISH COAT)		SF	\$5.00					
RW-018	PAINT HANDRAIL (PRIMER + FINISH COAT)		LF	\$2.00					
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF	\$1.00					
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF	\$1.00					
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF	\$2.00					
RW-022	PAINT RADIATOR (PRIMER + FINISH COAT)		SF	\$4.00					
RW-023	PAINT PIPING (PRIMER + FINISH COAT)		LF	\$1.00					
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF	\$5.00					
RW-025	ASPHALT PAVING		SF	\$10.00					
<u>ESCALATION FACTORS</u>									
EF-1	WORK SURFACES 10-20' HIGH			1.15					
EF-2	WORK SURFACES OVER 20' HIGH			1.30					
EF-3	NON-REGULAR WORK HOURS (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30					
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30					
EF-5	CONFINED SPACE WORK			1.15					
EF-8	EXTERIOR WORK			1.30					
								WORK ORDER TOTAL	

EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS

Manafort								
ITEM #	10PSX0238 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES		UNITS	UNIT COST \$0.00				
MOLD REMEDIATION								
IAQ-001	CLEANING AND HEPA VACUUMING OF CONTAMINATED COMPONENTS OR MATERIALS		SF	\$2.00				
IAQ-002	REMOVAL OF CONTAMINATED PIPE INSULATION		LF	\$1.50				
IAQ-003	REMOVAL OF CONTAMINATED BUILDING INSULATION		SF	\$1.50				
IAQ-004	REMOVAL OF CONTAMINATED HVAC DUCT OR EQUIPMENT INSULATION		SF	\$1.50				
IAQ-005	REMOVAL OF CONTAMINATED CARPET		SF	\$3.00				
IAQ-006	REMOVAL OF CONTAMINATED DRYWALL PARTITION (INCLUDING WALL FRAMING)		SF	\$3.00				
IAQ-007	REMOVAL OF CONTAMINATED PLASTER		SF	\$8.00				
IAQ-008	REMOVAL OF CONTAMINATED SUSPENDED CEILING PANELS		SF	\$3.00				
IAQ-009	PREP WORK AREA		SF	\$1.50				
IAQ-010	SOLID BARRIERS OR ACCESS TUNNELS (2"x4"@16", 1/2" PLYWOOD)		SFSA	\$3.25				
IAQ-011	SELECTIVE DEMOLITION TO ACCESS CONTAMINATED COMPONENTS OR MATERIALS		SF	\$2.50				
OTHER HAZARDOUS MATERIALS ABATEMENT								
HM-001	REMOVE LOOSE PCB CONTAMINATED CAULK (WET SCRAPING OR BRUSHING)		LF	\$10.00				
HM-002	REMOVE PCB CONTAMINATED CAULK AND 6 INCHES OF BUILDING MATERIALS		LF	\$28.00				
HM-003	REMOVE PCB CONTAMINATED CAULK AND 12 INCHES OF BUILDING MATERIALS		LF	\$45.00				
HM-004	REMOVE INTACT PCB CONTAMINATED CAULK WITH NO REMOVAL OF BUILDING MATERIALS		LF	\$15.00				
HM-005	STRIP PAINT FROM FLAT SURFACES		SF	\$4.00				
HM-006	HEPA VACUUMING AND WASHING SURFACE (SMOOTH SURFACE)		SF	\$2.00				
HM-007	HEPA VACUUMING AND WASHING SURFACE (POROUS SURFACE)		SF	\$2.50				
HM-008	REMOVE EXTERIOR SOIL (6" DEPTH)		SF	\$5.00				
COMPONENT REPLACEMENT								
CR-001	REMOVE TRIM COMPONENT (CASING, BASE, APRON, ETC.)		LF	\$0.85				
CR-002	REMOVE DOOR (DOOR ONLY)		SF	\$0.65				
CR-003	REMOVE DOOR (INCLUDING JAMB, NO TRIM)		SF	\$0.75				
CR-004	REMOVE WINDOW (SASH ONLY)		SF	\$0.90				
CR-005	REMOVE WINDOW (COMPLETE UNIT INCLUDING FRAME)		SF	\$1.00				
CR-007	REMOVE MISCELLANEOUS ITEM		CF	\$9.00				

**EXHIBIT B-3
MOLD AND OTHER HAZARDOUS MATERIALS**

Manafort									
MISCELLANEOUS ITEMS									
MI-001	MOBILIZATION (1 PER WORK AREA)		EA		\$450.00				
MI-002	WORKER DECON (1 PER WORK AREA)		EA		\$325.00				
MI-003	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (SOFT BARRIER)		SF		\$1.85				
MI-004	CONTAINMENT BARRIERS TO SEPARATE THE WORK AREA (HARD BARRIER)		SF		\$3.25				
MI-005	TEMP ELECTRICAL CONNECTION (LICENSED ELECTRICIAN)	COST+10%	EA						
MI-006	TEMP ELECTRICAL GENERATOR	COST+10%	DY						
MI-008	DISPOSAL OF HAZARDOUS WASTE MATERIAL (INCLUDES TRANSPORTATION)	COST+10%	CY						
MI-009	DISPOSAL OF CONSTRUCTION DEBRIS (INCLUDES TRANSPORTATION)	COST+10%	CY						
MI-010	STAND-BY ABATEMENT PERSONNEL (EACH LICENSED WORKER)		HR		\$58.00				
MI-011	ENCAPSULATION UTILIZING LIQUID COATING SYSTEM		SF		\$1.00				
MI-013	FIXED SCAFFOLDING	COST+10%	SF						
REWORK ITEMS									
RW-011	REPLACE TRIM COMPONENT (WOOD CASING, JAMB, APRON, ETC.)		LF		\$3.00				
RW-012	REPLACE INTERIOR DOOR (SOLID CORE FLUSH OR 6-PANEL PINE)	COST + 10%	EA						
RW-013	REPLACE WINDOW (SASH ONLY)	COST + 10%	EA						
RW-014	REPLACE WINDOW (COMPLETE UNIT INCLUDING FRAME)	COST + 10%	EA						
RW-019	PAINT TRIM COMPONENT (CASING, JAMB, APRON, ETC., PRIMER + FINISH COAT)		LF		\$1.00				
RW-020	PAINT DOORS (DOOR OPENING SIZE - INCLUDES BOTH FACES PRIMER + FINISH COAT)		SF		\$1.00				
RW-021	PAINT WINDOW (INCLUDES INTERIOR & EXTERIOR PRIMER + FINISH COAT)		SF		\$2.00				
RW-024	REPLACE EXTERIOR SOIL (6" LOAM AND SEED)		SF		\$8.00				
ESCALATION FACTORS									
EF-1	WORK SURFACES 10-20' HIGH			1.15					
EF-2	WORK SURFACES OVER 20' HIGH			1.30					
EF-3	NON-REGULAR WORK HOURS AND OVERTIME (6:00 P.M. TO 6:00 A.M. DAILY, AND WEEKEND WORK)			1.30					
EF-4	EMERGENCY RESPONSE (<24 HOUR)			1.30					
EF-5	CONFINED SPACE WORK			1.15					
EF-8	EXTERIOR WORK			1.30					
					WORK ORDER TOTAL				

<u>ITEM #</u>	Manafort 10PSX0238 EXHIBIT B-4 PRICE DESCRIPTION OF COMMODITY AND/OR SERVICES	<u>UNITS</u>	<u>UNIT COST \$0.00</u>
HM-002A	REMOVE PCB CONTAMINATED CAULK AND 6 INCHES OF BUILDING MATERIALS ON EITHER SIDE OF CAULK LINE	LF	\$56.00
HM-003A	REMOVE PCB CONTAMINATED CAULK AND 12 INCHES OF BUILDING MATERIALS ON EITHER SIDE OF CAULK LINE	LF	\$90.00

EXHIBIT C

SEEC FORM 11

NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION AND SOLICITATION BAN

This notice is provided under the authority of Connecticut General Statutes 9-612(g)(2), as amended by P.A. 07-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined below):

Campaign Contribution and Solicitation Ban

No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee;

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to, or solicit contributions on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

Duty to Inform

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

Penalties for Violations

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—\$2000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of \$2000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or \$5000 in fines, or both.

Contract Consequences

Contributions made or solicited in violation of the above prohibitions may result, in the case of a state contractor, in the contract being voided.

Contributions made or solicited in violation of the above prohibitions, in the case of a prospective state contractor, shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State will not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information and the entire text of P.A 07-1 may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to “State Contractor Contribution Ban.”

Definitions:

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision

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exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan or a loan to an individual for other than commercial purposes.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.