

**TOWN OF CHATHAM**

**TRAP DOCK RECONSTRUCTION**  
**Chatham, MA**

**ADDENDUM NO. 1**

October 7, 2019

The attention of bidders submitting proposals for the subject project Trap Dock Reconstruction, Chatham, MA are called to the following addendum. The items set forth herein, whether of omission, addition, substitution or clarification are all to be included in and form a part of the proposal submitted. **Bidders shall confirm addendum is included on Bid Proposal.**

A. REVISIONS TO PROJECT DOCUMENTS

**REPLACE THE FOLLOWING IN THEIR ENTIRETY:**

Table of Contents  
Notice to Bidders  
Bidding Requirements  
Bid  
Notice of Award  
Agreement  
Faithful Performance Bond  
Payment Bond  
General and Special Conditions

**ADD THE FOLLOWING TO ATTACHMENT C**

Asbestos-Containing Materials, Lead-Containing Paints and Hazardous Building Materials Survey, Trap Dock Building, 613 Stage Harbor Road, Chatham, Massachusetts

B. REVISIONS TO PROJECT SPECIFICATIONS

**ADD THE FOLLOWING TECHNICAL SPECIFICATIONS:**

02075 Misc. Oils and Hazardous Materials  
02080 Asbestos Abatement  
02090 Lead Paint

\*\*\* END OF ADDENDUM #1 \*\*\*

ADDENDUM NO.1 IS COMPRISED OF 151 PAGES

ATTACHMENTS:

- CONTRACT DOCUMENTS
  - Table of Contents
  - Notice to Bidders
  - Bidding Requirements
  - Bid
  - Notice of Award
  - Agreement
  - Faithful Performance Bond
  - Payment Bond
  - General and Special Conditions
- ATTACHMENTS
  - Attachment C
    - Hazardous Building Materials Survey
- SPECIFICATIONS
  - 02075 Misc. Oils and Hazardous Material
  - 02080 Asbestos Abatement
  - 02090 Lead Paint

For Information Only

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**LIST OF ATTACHMENTS:**

- ATTACHMENT A: Massachusetts Prevailing Wage Rates**
- ATTACHMENT B: Regulatory Approvals**
- ATTACHMENT C: Hazardous Material Inspection Report**

**For Information Only**

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**REQUEST FOR WRITTEN BIDS**

The Town of Chatham is soliciting written bids pursuant to the provisions of G.L. c. 30, §39M for the Trap Dock Reconstruction, located at the Chatham Trap Dock, 613 Stage Harbor Road, Chatham, MA 02633. The project generally consists of reconstruction of the pier and bulkhead.

Those submitting written bids (hereinafter "Bidders"). Bidders may obtain complete set(s) of Contract Documents electronically from the Project Engineer, GEI Consultants Inc., located at 124 Grove Street Suite 300 Franklin, MA 02038 (tel: 774-277-6001) on or after 10:00 a.m. on **October 2, 2019**. No partial sets will be issued. Requests for electronic delivery of the Contract Documents should be addressed to [cmcgillivray@geiconsultants.com](mailto:cmcgillivray@geiconsultants.com). There is no charge for electronic delivery of the contract documents.

The Town will receive bids at the Office of the Town Manager, 549 Main Street, Chatham, MA 02633, no later than **2:00 pm on Wednesday, October 23, 2019**, at which time all bids will be publicly opened and read aloud.

The Town reserves the right to waive any informalities and to reject any or all bids if it be in the public interest to do so in accordance with G.L. c. 30, §39M. A Performance Bond in the sum of one hundred percent (100%) of the Contract Price and a Labor and Materials Payment Bond in an amount equal to at least fifty percent (50%) of the contract price, each of a surety company qualified to do business under the laws of the Commonwealth of Massachusetts, satisfactory to the Owner, will be required of the successful general bidder.

Every bid shall be accompanied by a bid deposit in the form of: (1) a bid bond, (2) cash, or (3) a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the Owner. The amount of the bid deposit shall be five per cent (5%) of the value of the bid.

The award of a contract is subject to the Owner's receipt of all regulatory approvals from local, state or federal agencies. The award is also subject to availability of sufficient funding.

Non-mandatory Pre-Bid Conference/Site Inspection: **2 p.m. Tuesday, October 8, 2019** at project site, 613 Stage Harbor Road, Chatham, MA.

For Information Only

**NOTICE TO BIDDERS**

**TOWN OF CHATHAM**

Notice is hereby given that the Town of Chatham will receive bids for furnishing all labor, materials, transportation and services for the project known as:

**CHATHAM TRAP DOCK RECONSTRUCTION**

located on 613 Stage Harbor Road in Chatham, Massachusetts. Each bid to be in accordance with the plans, specifications and other contract documents now on file at the office of the Project Engineer, GEI Consultants Inc., located at 124 Grove Street, Suite 300, Franklin, MA 02038, where they may be examined, and copies obtained for a fee.

- A. Notice is also hereby given that all Bidders may be required to furnish a sworn statement of their financial responsibility, technical ability and experience before award is made to any particular Bidder.
- B. The project generally consists of reconstruction of the existing timber pier and bulkhead with site improvements and removal of the existing building.
- C. A non-mandatory site walk through will be performed by the Project Engineer on **Tuesday October 8, 2019 at 2:00 pm on site**, which will overview and acquaint the Contractor with the work set forth hereunder. All prospective bidders are highly encouraged to attend. If the bidder chooses not to attend this meeting, they shall waive any information provided at this meeting.
- D. Each bid shall be submitted to the Town of Chatham at the Office of the Town Manager, 549 Main Street, Chatham, MA 02633 on or before **2:00 pm on Wednesday, October 23, 2019**, local time (**CASH WILL NOT BE ACCEPTED**). Each bid shall be in a separate sealed envelope, addressed to the Town of Chatham.
- E. Bids will be award based on the Base Bid only.
- F. The Owner reserves the right to reject any or all bids or waive any informality in a bid.
- G. No bidder may withdraw his/her bid for a period of sixty (60) days after the date set for the opening thereof.
- H. Bidders should be aware that all contractors performing work for the Owners are required to present evidence of Workers' Compensation and Employers' Liability Insurance coverages; a certificate of insurance and copies of the information or declaration page(s) for Broad Form Comprehensive General Liability or Commercial General Liability, and Business Automobile Liability Insurance policies of not less than \$1,000,000 for bodily injury or death arising out of any one occurrence and property damage limits of not less than \$3,000,000 arising out of any occurrence for each type of coverage; as well as excess liability coverage in an amount to be no less than \$3,000,000; as well as copies for said General Liability and Business Auto Liability Insurance Policies or an endorsement naming the Owners, its Board, and its officers, agents and employees as additional insureds, a standard cross-liability endorsement, an endorsement precluding cancellation or reduction in coverage before the expiration of thirty (30) days after Owners has received written notification by first class mail from the insurance carrier of such cancellation or reduction, and an endorsement stating that the insurance afforded thereby to Owners and its officers, agents and employees shall be primary insurance to the full limits of the policy, and that if Owners and its officers and employees have other insurance against a loss

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covered by such a policy, such other insurance shall be excess insurance only. Contractor shall further procure for the Owners' benefit, course of construction insurance coverage for all risks of loss in an amount equal to the completed value of the project. The certificates of insurance and copies of information or declaration page(s) and of endorsements are to be reviewed and approved as to form by the Owners before work commences. The award of a contract is subject to the Owner's receipt of all regulatory approvals from local, state and federal agencies.

- I. The "Contract Documents" consist of this Notice to Bidders; the Bid; the list of subcontractors; the non-collision affidavit; Section 00100 (Bidding Requirements); the Agreement; the Agreement; the Faithful Performance Bond; the Payment Bond; the General Conditions; the Special Conditions; the plans and specifications, and any and all exhibits attached to any of the above listed documents. Bidders may obtain a complete set of Contract Documents electronically from Project Engineer, GEI Consultants Inc., located at 124 Grove Street, Suite 300, Franklin, MA 02038 (tel: 774-277-6001) **on or after 10 a.m., October 2, 2019**. Electronic copies of the Contract Documents will be available to registered bidders without charge.
- J. The Contract shall be governed by the law of the Commonwealth of Massachusetts. All applicable provisions of Federal, state, or local law, by-laws, rules, or regulations are incorporated into the Contract as if fully set forth therein and shall prevail over any conflicting provisions of the General or Special Conditions.
- K. Bidders shall address inquiries regarding availability of Documents, delivery time and other similar matters to the Project Engineer's office. Arrangements for delivery or mailing may be made directly with the Project Engineer's office (Telephone: 774-277-6001). Electronic copies of the Contract Documents will be available to registered bidders without charge. Copies of Addenda will be provided electronically to registered bidders.
- L. Any question pertaining to the plans, specifications, or any of the Contract Documents shall be submitted in writing, addressed to the attention of Kevin Buruchian, and delivered either in person to or, if by mail, addressed to Kevin Buruchian at GEI Consultants Inc., 124 Grove Street, Suite 300, Franklin, MA 02038, or, by email sent to [kburuchian@geiconsultants.com](mailto:kburuchian@geiconsultants.com). To be given consideration, every question must be received at least seven (7) calendar days prior to the date fixed for the opening of Bids. Any and all interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be provided to all persons on record as having received a complete set of Contract Documents at the respective addresses furnished for such purposes. Such Addenda will be provided not later than 48 hours prior to the time set for opening of bids. Failure of any Bidder to receive any Addendum or interpretation shall not relieve such bidder from any obligation under his Bid as submitted.
- M. A successful bidder shall provide proof of a current business license issued by the jurisdiction where the work of improvement is to be conducted upon award of the Contract.
- N. The Contract will be awarded to the responsible contractor offering to perform the work at the lowest price. Under G.L. c, 30, §39M, "lowest responsible and eligible bidder" shall mean the bidder: (1) whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work; (2) who shall certify, that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (3) who shall certify that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall

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furnish documentation of successful completion of said course with the first certified payroll report for each employee; (4) who, where the provisions of section 8B of chapter 29 apply, shall have been determined to be qualified thereunder; and (5) who obtains within 10 days of the notification of contract award the security by bond required under section 29 of chapter 149.

- O. A successful bidder shall, within ten (10) days from the date of a request by the Owners, enter into a contract with the Owners, which contract shall be accompanied by a payment bond and a faithful performance bond, each in a sum equal to 500% of the amount of the bid, and all documents evidencing insurance coverage requested by the Owners.
- P. The date of completion for the Project shall be **May 1, 2020**. If the Owner accepts a bid, it anticipates issuing a "Notice to Proceed" on or about **November 1, 2019**. After the "Notice to Proceed" is issued, the Contractor may begin procuring materials. It is therefore estimated that the Contractor will have **One Hundred and Eighty-Two (182)** calendar days from the date of issuance of a Notice to Proceed to the completion date.
- Q. The prevailing wages to be paid mechanics, apprentices, teamsters, chauffeurs, and laborers on the Project shall be established by the Prevailing Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provisions of M.G.L. Chapter 149, Section 26 to 27D, inclusive, as amended, which schedule is included in the Contract Documents.

The bidding documents may be examined at, but not removed or taken from, the office of Project Engineer at the address stated above or the Office of the Town Manager, 549 Main St, Chatham, MA 02633, during normal business hours.

All procurement procedures will be in accordance with the Massachusetts General Laws Chapter 149, sections 26-27D and General Laws Chapter 30, sections 39M, which are incorporated herein by reference.

\*\*\*END OF SECTION\*\*\*

For Information Only

**SECTION 00100**

**BIDDING REQUIREMENTS**

**1.01 SECURING DOCUMENTS**

Bidders may obtain complete set(s) of Contract Documents electronically from the Project Engineer, GEI Consultants Inc., located at 124 Grove Street Suite 300 Franklin, MA 02038 (tel: 774-277-6001) on or after 10:00 a.m. on **October 2, 2019**. No partial sets will be issued. Requests for electronic delivery of the Contract Documents should be addressed to [cmcgillivray@geiconsultants.com](mailto:cmcgillivray@geiconsultants.com). There is no charge for electronic delivery of the contract documents.

**1.02 BID REQUIREMENTS**

In order to receive consideration, bids shall be prepared and submitted in conformance with the requirements and instructions:

1. Bidders shall carefully examine the site of the proposed work and the Contract Documents. It will be assumed that the bidder has investigated and is satisfied as to the conditions to be encountered, and as to the character, quality and quantities of work to be performed, materials to be furnished, and as to the requirements of these contract documents.
2. Specific data required in regard to the location of existing public utility companies' pipes, conduits and structures as required to perform the work shall be obtained by the Contractor from the respective public utility companies.
3. Bids shall be prepared and submitted only on the forms supplied by the Owner and shall be signed by the bidder. Contractors must complete all bid items; no incomplete bids will be accepted. Written amounts shall prevail over numbers. If the unit price and the total amount named by the bidder for any item do not agree, the unit price shall govern. The Bidder Certification, fully completed and executed by the bidder, shall accompany the bid.
4. If the bid is by an individual, his/her name and address shall be shown; if by a firm, the firm or partnership name shall be shown; or if by a corporation, the bid shall show the name and the State under the laws of which the corporation is chartered, and addresses of the President and of the Secretary and/or Treasurer. All bids shall be signed in long-hand and executed by a principal duly authorized to make contracts. Verbal or telephonic bids or modifications will not be considered. Bidders shall include with their bid a completed Certificate of Vote of Authorization. Such forms are included with the bid documents. Electronic bids will not be accepted.
5. Bids shall not contain any recapitulation of the work to be done. Alternative bids will not be considered, unless called for. The completed form shall be without interlineations or alterations.
6. All bids shall be presented to the Owner under sealed cover, and plainly marked on the outside with the title of the work being proposed and the name of the bidder. It is the sole responsibility of the bidder to ensure that his/her bid is received by the Owner prior to the time specified for receipt of bids. Any bid received after the scheduled closing time for receipt of bids shall be returned to the bidder unopened and will be deemed unresponsive and thus rejected by the Owner(s).

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7. Every bid shall be accompanied by a bid deposit in the form of: (1) a bid bond, (2) cash, or (3) a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the Owner. The amount of the bid deposit shall be five percent (5%) of the value of the bid.

### **1.03 BID QUANTITIES**

See Bid Form in Section 00110 for Bid Quantities.

### **1.04 CONTRACTOR'S LICENSE**

Prior to submitting bids, bidders shall be licensed (if applicable) as contractors under the laws of the Commonwealth of Massachusetts to perform the type and class of work contemplated by the Contract Documents.

Subcontractors of bidding Contractors shall be licensed under the laws of the Commonwealth of Massachusetts to perform the type and class of work contemplated by the Contract Documents.

### **1.05 WITHDRAWAL OF BID**

Any bid may be withdrawn by the bidder prior to, but not after, the time fixed for the opening of bids, either personally or by telegraphic or written request. The withdrawal of a bid shall not prejudice the right of a bidder to file a new bid. No bid may be withdrawn for a period of sixty (60) calendar days after the bid opening. Any withdrawal after that time shall be in writing and shall not be effective until received by Owner.

### **1.06 INTERPRETATION OF DOCUMENTS AND PLANS**

If any person contemplating submitting a bid for the proposed contract is in doubt as the true meaning of any part of the plans, specifications or other contract documents, or finds discrepancies in, or omissions from the drawings or specifications, he/she may submit to the Project Engineer a written request for an interpretation or corrections thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation or corrections of the proposed documents will be made only by addendum duly issued and a copy of such addendum will be mailed, emailed, or delivered to all persons known by the Project Engineer to have received a set of Contract Documents. Neither the Owner nor the Project Engineer will be responsible for any other explanations or interpretations of the proposed Contract Documents.

### **1.07 ADDENDA**

The Contract Documents are subject to revision prior to the time fixed for opening bids by submitting the revision, in writing, to all persons who are known by Owner to have secured such documents for purposes of submitting bids. All addenda issued shall become an integral and integrated part of the contract documents and shall be included in any bid submitted. Bidders are responsible for verifying that they have received all addenda.

### **1.08 OPENING OF BIDS**

Written Bids for the Contract will be received by the Office of the Town Manager, 549 Main Street, Chatham, MA 02633, no later than **2:00 pm EST on Wednesday, October 23, 2019**, and at that time and place will be publicly opened and read aloud.

### **1.09 AWARD OF CONTRACT OR REJECTION OF BIDS**

The Contract will be awarded to the lowest responsible and eligible bidder.

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Bids may be rejected if they show any alterations of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind. The Owner reserves the right to waive any irregularities in the bids as received.

The Owner reserves the right to reject any or all bids. More than one bid from an individual, firm or partnership, corporation or association, under the same or different name, will not be considered. Reasonable grounds for believing that a bidder is interested in more than one bid for work contemplated, will cause the rejection of all bids in which said bidder is interested. Bids in which prices are obviously unbalanced may be rejected by the Owner.

#### **1.10 COMPETENCY OF BIDDERS**

Bidders may be required to furnish evidence of financial competency, organizational ability and experience to enable them to undertake and successfully complete the work to be performed, including past performance which shall include past performance on projects performed for the Owner.

Bidders shall provide the lists of past projects and minimum references as outlined in the Bid.

#### **1.11 BONDS AND INSURANCE**

Bidder's attention is directed to the provisions of the contract documents relating to the requirements of contract bonds. The successful bidder, simultaneously with execution of the Agreement, will be required to furnish a faithful performance bond in an amount equal to at least one hundred percent (100%) of the contract price, and a labor and material bond in an amount equal to at least fifty percent (50%) of the contract price; both of said bonds to be secured from a corporate surety admitted in the Commonwealth of Massachusetts and satisfactory to the Owner.

Bidder's attention is further directed to the provisions relating to the Contractor's insurance requirements, and the prescribed form of Bidder's Bond, Agreement, Contract Bonds and insurance documentation.

#### **1.12 CONTRACT PROGRESS SCHEDULE**

Bidder's attention is directed to the provisions of the Contract Documents relating to the requirement for the submission of a contract progress schedule with the Contractors Bid. Contractors shall provide a project schedule with their bids. Time is of the essence with respect to completion of the Contract work and adherence to the project schedule is an essential term of the Contract.

#### **1.13 LEGAL RELATIONS AND RESPONSIBILITIES**

Bidder's attention is specifically directed to the provisions of the General Conditions concerning laws to be observed, hours of labor, minimum wages, employment of labor, safety codes, patents, taxes, and other matters of concern to the bidder.

The prevailing wages to be paid mechanics, apprentices, teamsters, chauffeurs, and laborers on the Project shall be established by the Prevailing Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provisions of M.G.L. Chapter 149, Section 26 to 27D, inclusive, as amended, which Schedule is included in the Contract Documents.

#### **1.14 SUBCONTRACTORS**

Each bidder must identify in his/her bid the subcontractors he/she intends to employ to perform any work or labor, or render any service to the Contractor for the construction of the work or improvement in an amount in excess of one half of one percent of the Contractor's bid. This

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statement shall include the name of each subcontractor, the location of his/her place of business, and the nature of the work to be performed by him/her.

\*\*\*END OF SECTION\*\*\*

For Information Only

**SECTION 00110**

**BID**

Dear Owner:

The undersigned, as a bidder, declares that he/she has carefully examined the location of the proposed work, the bid form of Agreement, and Contract Documents, and he/she proposes and agrees that, if this bid is accepted, he/she will contract with the Owner to provide all necessary machinery, tools and apparatus, to perform all the work and furnish all the materials specified in the Contract Documents in the manner and time therein set forth required to complete the

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The work to be performed pursuant to this Bid shall be in strict conformity with the Contract Documents prepared therefore by the Owner, copies of which are on file in the office of the Project Engineer, which Contract Documents are hereby made a part thereof, and incorporated by this reference as if fully set forth herein.

The bidder proposes and agrees to contract with the Owner to furnish and perform all of the above described work, for the following price, to wit:

(\$) \_\_\_\_\_  
\_\_\_\_\_ U.S. Dollars

A breakdown of the Contract Price is attached hereto marked Exhibit "A" and incorporated by this reference.

Owner reserves the right to add or delete items from this list. The Contract Price shall be adjusted accordingly. The price set forth herein includes any and all costs and expenses of whatever source or nature for the work to be performed pursuant to the terms and conditions of the Contract Documents.

If awarded the contract, the undersigned hereby agrees to sign said Contract and to furnish the necessary bonds within ten (10) days after being requested to do so by the Owner.

The undersigned has examined the location of the proposed work and is familiar with the Contract Documents and the local conditions at the place where the work is to be done.

The undersigned has checked carefully all of the above figures and understands that the Owner will not be responsible for any errors or omissions on the part of the undersigned in making up this bid.

The undersigned hereby certifies that this bid is genuine, and not sham or collusive, or made in the interest or in behalf of any person not herein named, and that the undersigned has not directly or indirectly induced or solicited any other bidder to put in a sham bid or any other person, firm or corporation to refrain from bidding and that the undersigned has not in any manner sought by collusion to secure for himself or herself an advantage over any other bidder

The undersigned has satisfied him/herself by personal examination of the location of proposed work, and by such other measures as they may prefer, as to the actual conditions and requirements of the

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work, and shall not, after submission of the bid, dispute, complain or assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

**Contractor acknowledges receipt of Addenda Nos. \_\_\_\_\_ through \_\_\_\_\_.**

**Contractor :** \_\_\_\_\_

**Signature :** \_\_\_\_\_

**Signed by :** \_\_\_\_\_

**Title :** \_\_\_\_\_

**Address:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Telephone :** \_\_\_\_\_

**Facsimile :** \_\_\_\_\_

**Dated this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_**

**License No. \_\_\_\_\_ Class(es) \_\_\_\_\_**

**Exp. Date: \_\_\_\_\_**

**NOTE:** Bidders must hold current licenses as required under the laws of the Commonwealth of Massachusetts and all Federal Statutes.

**For Information Only**

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**EXHIBIT "A"**  
**BID ITEMS**

ITEM NO.	DESCRIPTION AND UNIT PRICES WRITTEN	ESTIMATED QUANTITY	UNIT PRICE IN FIGURES	ITEM AMOUNT
1	Mobilization (Item 02000-1)  Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
2	Site Preparation (Item 02000-2)  Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
3	Demolition (Item 02110-1)  Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
4	Debris (Item 02110-2)  Unit Price in Words: _____ _____	500 (Tons)	\$ _____	\$ _____
5	Articulated Concrete Mat (Item 02250-1)  Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
6	Pier Piles  Unit Price in Words: _____ _____	26 (EACH)	\$ _____	\$ _____
7	Bulkhead No 1  Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
8	Bulkhead No 2  Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____

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9	Fender Piles Unit Price in Words: _____ _____	21 (EACH)	\$ _____	\$ _____
10	Concrete Pier Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
11	Concrete Site Improvements Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
12	Pier Davits Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
13	Pier Ladders Unit Price in Words: _____ _____	3 (EACH)	\$ _____	\$ _____
14	Marine Timber Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
15	Electrical System Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
16	Pier Water Utilities Unit Price in Words: _____ _____	Lump Sum	\$ _____	\$ _____
Total Base Bid Unit Price in Words: _____ _____			\$ _____	
			\$ _____	

For Information Only

**LIST OF SUBCONTRACTORS**

Any person making a bid or offer to perform the work, shall in his or her bid or offer, set forth: (a) The name and location of the place of business of each subcontractor who will perform work or labor or render service to the prime Contractor in or about the construction of the work or improvement, or a subcontractor licensed by the Commonwealth of Massachusetts who, under subcontract to the primary Contractor specially fabricates and installs a portion of the work or improvement according to detailed drawings contained in the plans and specifications, in an amount in excess of one-half of 1 percent of the prime Contractor's total bid; (b) The portion of the work which will be done by each such subcontractor under this act. The prime Contractor shall list only one subcontractor for each such portion as defined by the prime Contractor in his or her bid.

Any item of work, which does not set forth a designated Sub-Contractor will be done by the Prime Contractor.

**Name & Address**

**Portion of Work**

Name & Address	Portion of Work
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

\_\_\_\_\_  
(Prime Contractor)

Signed by: \_\_\_\_\_

Title: \_\_\_\_\_

**For Information Only**

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND  
SUBMITTED WITH BID**

Commonwealth of Massachusetts

County of \_\_\_\_\_

\_\_\_\_\_, being first duly sworn, deposes and says that he or she is \_\_\_\_\_ of \_\_\_\_\_, the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation, that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Owner awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Signature \_\_\_\_\_

(NOTARY) I, \_\_\_\_\_ as a notary public certify under the pains and penalties of perjury that I witnessed the signature of the aforementioned signatory on behalf of the Bidder, and the individual's identity was verified, on this date: \_\_\_\_\_, 20\_\_\_\_\_. My commission expires on: \_\_\_\_\_.

OR

(CORPORATE CLERK) I, \_\_\_\_\_ as corporate clerk of the Bidder/Contractor certify under the pains and penalties of perjury that I witnessed the signature of the aforementioned signatory and the signatory is authorized to execute contracts and other instruments and legally bind the Bidder/Contractor. This date: \_\_\_\_\_, 20\_\_\_\_\_.

**AFFIX NOTARY SEAL OR CORPORATE SEAL HERE:**

**BIDDER CERTIFICATIONS**

**1.01 GENERAL**

A. The undersigned Bidder certifies to the Owner, as set forth in sections 1 through 12 below.

**1. Certificate of Non-Discrimination**

By my signature hereunder, on behalf of the Bidder making this Bid, the undersigned certifies that there will be no discrimination in employment with regard to race, color, religion, gender, sexual orientation, or national origin; that all federal, state, and local directives and executive orders regarding non-discrimination in employment will be complied with; and that the principle of equal opportunity in employment will be demonstrated positively and aggressively.

**2. State of Convictions**

By my signature hereunder, I hereby swear, under penalty of perjury, that no more than one final, unappealable finding of contempt of court by a Federal Court has been issued against Bidder within the past two years because of failure to comply with an order of a Federal Court or to comply with an order of the National Labor Relations Board.

**3. Previous Disqualifications**

By my signature hereunder, I hereby swear, under penalty of perjury, that the below indicated Bidder, any officer of such Bidder, or any employee of such Bidder who has a proprietary interest in such Bidder, has never been disqualified, removed or otherwise prevented from bidding on, or completing a Federal, State, or local government project because of a violation of law or a safety regulation except as indicated on the separate sheet attached hereto entitled "Previous Disqualifications." If such exceptions are attached, please explain the circumstances.

**4. Certification of Workers Compensation Insurance**

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of Title 28-29 Labor and Labor Relations of the General Laws of Massachusetts which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that law, and I will comply with such provisions before commencing the performance of the Work of this Contract.

**5. Certificate of Non-Collusion:**

In accordance with Massachusetts General Law Chapter 30, Section 39M: Undersigned certifies under penalties of perjury that this bid, or bid is in all respects bona fide and fair and has been made and submitted in good faith without collusion or fraud with any other person. As used in this certification, the work "person" shall mean any natural person, joint venture, business, partnership, corporation, union, committee, club, organization, group of individuals, or other business or legal entity.

**6. Conflict of Interest:**

The bidder must certify that no official or employee of the Town of Chatham has a financial interest in the bidder's bid or executed Contract, or in the expected profit to arise therefrom, unless there has been compliance with the provisions of MGL C 43, Section 27 (Interest in Public Contracts by Public Employees) and of provisions of MGL C 268A, Section 20 (Conflict of Interest Law).

**7. Indemnification Agreement:**

The contracted Bidder hereby indemnifies and shall at all times save and hold harmless the Town of Chatham, and its officers, attorneys, employees, and agents from and against any and all claims (including workers' compensation and wage claims), demands, suits, actions, liabilities, damages, penalties, judgments, and costs and expenses, including without limitation the costs and expenses of litigation, of or by anyone that in any way

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is caused by, arises out of, or is occasioned by the performance, activities, operations, conducts, negligence, or omissions of the contracted Bidder, or any of its agents or employees.

**8. Taxes Paid:**

Pursuant to Massachusetts General Laws, Chapter 62C, Section 49A, the undersigned certifies under the penalties of perjury that, to the best of my knowledge and belief, all Massachusetts State Tax returns and all Massachusetts State Taxes required under law have been paid, and I have complied with the reporting of employees and contractors, and withholding and remitting of child support.

**9. Right to Know Law:**

Bidder agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to MGL Chapter 111F, Sections 8, 9, 10 and the regulations contained in 454 CMR 21.06 when deliveries are made; and agrees to deliver all containers properly labeled pursuant to MGL Chapter 111F, Section 7 and 454 CMR 21.05. Failure to submit an MSDS and/or label on each container will place the vendor in non-compliance with the Purchase Order and/or Contract. Failure to furnish MSDS and/or labels on each container may result in civil or criminal penalties. All vendors furnishing substances or mixtures subject to MGL Chapter 111F or 454 CMR are cautioned to obtain and read the Law and Rules and Regulations. Failure to comply with these requirements could result in cancellation of Contract.

**10. Foreign Corporation:**

In accordance with Massachusetts General Laws Chapter 30, Section 39L, any foreign contractor or subcontractor is required to provide a certificate from the Secretary of State stating that such corporation has complied with Massachusetts General Laws Chapter 181, Section 3 and 5, including the date of compliance. Further, bidder's attention is called to Massachusetts General Laws Chapter 268A, in connection with which the bidder is requested to submit the information requested in the signature section of this document.

**11. Compliance:**

The undersigned is in compliance with all of the provisions, and shall remain in full compliance with the provisions for the life of any Contract resulting from this solicitation. Bidder is qualified to perform any such Contract and possesses, or shall obtain, all requisite licenses and/or permits to complete performance; shall maintain all unemployment, workers' compensation, and personal liability insurance policies sufficient to cover its performance under any such Contract; and shall comply with relevant prevailing wage rates and employment laws. To the best of its knowledge and belief has paid all local taxes, tax titles, utilities, motor vehicle excise taxes, water and wastewater bills in Massachusetts as required by Law.

**12. Affirmative Action Plan:**

In witness whereof, the bidder certifies under the pains and penalties of perjury, that as an employer, it is committed to non-discrimination in employment and if selected to execute contracts with the Commonwealth of Massachusetts and/or the Town of Chatham shall also be committed to procure commodities, services and supplies from certified minority and women-owned business enterprises, businesses owned by individuals with disabilities and businesses owned and controlled by socially or economically disadvantaged individuals, both in the performance of contracts with the Commonwealth of Massachusetts and/or the Town of Chatham and in the performance of its business generally, as certified by the execution of this certification by an authorized signatory of the bidder as of the last date indicated below.

**13. G.L. c. 30, §39S Certification:**

In accordance with Massachusetts General Laws Chapter 30, Section 39S, the bidder certifies: (1) that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration.

**1.02 INSURANCE AND BOND VERIFICATION**

A. The undersigned Bidder Certifies that he has the following insurance coverage:

**1. Workers' Compensation:**

Carrier: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone and Fax: \_\_\_\_\_  
Policy Number: \_\_\_\_\_

**2. General Liability:**

Carrier: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone and Fax: \_\_\_\_\_  
Policy Number: \_\_\_\_\_  
Policy Limits: \$ \_\_\_\_\_  
A.M. Best Rating: \_\_\_\_\_

**3. Automotive Liability:**

Carrier: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone and Fax: \_\_\_\_\_  
Policy Number: \_\_\_\_\_  
Policy Limits: \$ \_\_\_\_\_  
A.M. Best Rating: \_\_\_\_\_

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4. **All-risk Course of Construction:**

Carrier: \_\_\_\_\_

Address: \_\_\_\_\_

Phone and Fax: \_\_\_\_\_

Policy Number: \_\_\_\_\_

Policy Limits: \$ \_\_\_\_\_

A.M. Best Rating: \_\_\_\_\_

5. **Excess Liability (if applicable):**

Carrier: \_\_\_\_\_

Address: \_\_\_\_\_

Phone and Fax: \_\_\_\_\_

Policy Number: \_\_\_\_\_

Policy Limits: \$ \_\_\_\_\_

A.M. Best Rating: \_\_\_\_\_

Additional endorsements to insurance are required for the following coverages:

1. **Additional Insured:**

It is hereby understood and agreed that Additional Insured for General Liability and Auto Liability Coverage shall include: The Owner, its Board, commissions, committees, boards, officers, employees, and agents as additional insured as respects to work done by Named Insured.

2. **Primary Coverage**

With respect to claims arising out of the operations of the Name Insured, such insurance as afforded by the policy is primary, and is not additional to or contributing with any other insurance carried by or for the benefit of the above Additional Insureds.

3. **Cross Liability/Severability of Interest**

The naming of more than one person, firm or corporation as insured under this policy shall not, for that reason alone, extinguish any rights of the insured against another, but this endorsement, and the naming of multiple insureds, shall not increase the total liability of the Company under this policy.

4. **Notice of Cancellation for General Liability and Auto Liability:**

It is understood and agreed that in the event of cancellation of or reduction in the policy for any reason, including non-payment of premium, 30 days' written notice will be sent to the Project Engineer.

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The name of the Bidder's Bonding Company is as follows:

Carrier/Surety:

---

Address: \_\_\_\_\_

Phone and Fax: \_\_\_\_\_

A.M. Best Rating: \_\_\_\_\_

**1.03 RELEVANT EXPERIENCE**

- A. List Bidder's comparable projects (Minimum of five projects of similar size and scope, minimum of one project performed for a Massachusetts Municipality or State Agency) completed by Bidder in the last ten years, with Owner contact information. (Attach separate sheets if necessary).
- B. List any projects where Bidder has been default terminated by an Owner or has been involved in arbitration/litigation with an Owner on a construction project. Provide Owner contact information:
- C. Contractors shall provide a list of all projects completed within the last five years.

**1.04 SAFETY & EXPERIENCE RECORD**

- A. The following statements as to safety and experience of Bidder are submitted, and Bidder guarantees the truthfulness and accuracy of the information:

1. **Safety**

- a. List Bidder's Interstate Experience Modification Rate for the last three years.

2017: \_\_\_\_\_

2018: \_\_\_\_\_

2019: \_\_\_\_\_

- b. State the name of Bidder's safety engineer/manager or Site Safety Officer:
- 

**1.05 CONTRACTOR EXPLANATION OR NOTES ON ANY OF THE ABOVE:**

**1.06 LIST OF ALL EQUIPMENT TO BE USED ON THIS PROJECT (include year, type, size and condition):**

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**1.07 CONTRACTOR'S NARRATIVE ON CONSTRUCTION SCHEDULE AND METHODOLOGY:** (Please describe in as much detail as possible how your firm/company will proceed with the work as described within the contract documents. Attach or utilize additional sheets if necessary. The Construction Schedule shall be provided with the Contractor's Bid.

BIDDER CERTIFIES, UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE COMMONWEALTH OF MASSACHUSETTS, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND AUTHORIZES OWNER AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

BIDDER: \_\_\_\_\_  
(COMPANY NAME)

BY: \_\_\_\_\_ TITLE \_\_\_\_\_  
NAME

BY: \_\_\_\_\_ DATE \_\_\_\_\_  
SIGNATURE

NOTE: This bid must bear the written signature of the Bidder. If the Bidder is a partnership, the bid must be signed by a partner. If the Bidder is a corporation, the bid must be signed by a duly authorized officer or agent of such corporation.

**CERTIFICATE OF VOTE OF AUTHORIZATION**

I, Clerk of \_\_\_\_\_  
(Name of Corporation)

the principal office of which is located at:  
\_\_\_\_\_  
(Address of Principal Office)

do hereby certify that a duly authorized meeting of the Board of Directors of the above-named corporation held on: \_\_\_\_\_, at which all Directors were  
(Date)

present or waived notice, it was VOTED that:

\_\_\_\_\_  
(Name)

\_\_\_\_\_ of this corporation and hereby is authorized to  
(Office)

execute contracts, bonds, and other instruments in the name and behalf of said corporation and affix its corporate seal thereto, and such execution of any contract or other instrument or obligation in this corporation's name on its behalf by the above-named officer shall be valid and binding on this corporation.

I hereby certify that I am the Clerk of this corporation and that the above-named officer was duly elected to the above-stated office and that the above-stated VOTE has not been amended or rescinded and remains in full force and effect as of the date of this contract executed with the Town of Chatham.

A true copy,

Attest: \_\_\_\_\_, Clerk

(Corporate Seal)

**For Information Only**

**NOTICE OF AWARD**

Dated: \_\_\_\_\_

TO: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

**RE:**

**TOWN OF CHATHAM, MASSACHUSETTS  
TRAP DOCK RECONSTRUCTION**

The Contract Sum of your contract is \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$).

Two copies of each of the Contract Documents accompanying will be delivered separately or otherwise made available to you.

You must comply with the following conditions precedent within ten (10) calendar days after the date of this Notice of Award, that is by \_\_\_\_\_.

1. You must deliver to the Owner four (4) fully executed counterparts of the Agreement. Each of the Contract Documents must bear your signature.
2. You must deliver to the Owner the Performance Bond, executed by you and your surety.
3. You must deliver to the Owner the Construction Labor and Material Payment Bond, executed by you and your surety.
4. Provide all certificates of insurance and endorsement pages required hereunder to the Owner.

Further, you may deliver any requests for substitution within thirty-five (35) days of the date of this Notice of Award, that is by \_\_\_\_\_.

Failure to comply with these conditions within the time specified will entitle the Owner to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited.

Within ten (10) Days after you comply with those conditions, the Owner will return to you one fully signed counterpart of the Agreement Owner: (Town of Chatham)

BY: \_\_\_\_\_  
(Name and Title)

\*\*\*END OF SECTION\*\*\*

**AGREEMENT**

Town of Chatham (the "Owner") and \_\_\_\_\_, hereinafter referred to as "Contractor", for the consideration hereinafter stated, hereby agree as follows:

1. PROJECT. Contractor shall perform everything required to be performed, shall provide and furnish all of the labor, equipment, materials, and tools to perform, within **One Hundred and Eighty-Two (182)** calendar days after the NOTICE TO PROCEED, which is anticipated to be given no later than **November 11, 2019** for the following work:

**TRAP DOCK RECONSTRUCTION  
CHATHAM, MA**

in strict accordance with the Contract Documents pertaining thereto and signed by the Engineer for the Owner, which Documents are incorporated herein and made a part of this Agreement as if herein fully set forth. Subject to all authorized modifications, Substantial Completion as certified by the Project Engineer, must be achieved no later than April 16, 2020 and Final Completion of all construction activities must be achieved no later than **May 1, 2020**.

CONTRACT AMOUNT. Owner shall pay to Contractor, as full consideration for the faithful performance by Contractor of the aforementioned work, the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) computed in accordance with Contractor's accepted Bid dated \_\_\_\_\_, which accepted Bid is incorporated herein by reference thereto and if herein fully set forth.

2. SUPERVISION. All of the work to be done shall be done under the direction and supervision of, and to the approval of, Owner or its authorized representative, and the work shall be done in the best workmanlike manner, conforming strictly to the provisions of the specifications and plans made thereof.
3. EARLY COMPLETION BONUS. Time is of the essence with respect to completion of the Project. If final substantial completion of all Project Work is achieved prior to the Contract Completion Date set forth in Paragraph 1, as such date may be amended hereunder, and certified as complete by the Project Engineer, the Owner shall pay the Contractor at the time of Final Payment an early completion bonus in the amount of \$1,500 per day for each day subsequent to final completion up to, and including, said Contract Completion Date. In no event shall the early completion bonus exceed \$15,000.
4. COMPLIANCE WITH LAWS. (a) Contractor shall comply with all applicable provisions of the Massachusetts General Laws inclusionary of any and all Labor and Labor Relations Statutes. All applicable provisions of Federal, state, or local law, by-laws, rules, or regulations are incorporated into the Contract as if fully set forth therein and shall prevail over any conflicting provisions of the General or Special Conditions.

Before the Agreement between Owner and Contractor is entered into, Contractor shall submit written evidence that it and any subcontractors have obtained for the period of the Contract, full Workers' Compensation insurance coverage for all persons whom they employ or may employ in carrying out the work under this Contract. This insurance shall be in accordance with the requirements of the most current and applicable state Workers' Compensation insurance laws. The Contractor in signing this Agreement certifies to Owner as true the following statement:

I am aware of the provisions of Massachusetts General Laws, which requires every employer to be insured against liability for workers' compensation or to undertake self-

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insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

5. **PERFORMANCE STANDARDS.** The Work must be performed and completed in accordance with all requirements of law and no Work shall be undertaken until Contractor has been issued all required permits from all applicable municipal, state and federal governmental bodies. "Completion" of the Work includes obtaining all certificates, or amendments of existing certificates, as the case may be, which relate to the performance of the Work. Unless otherwise specified in this Agreement, the Work must be performed in a good and workmanlike manner and in accordance with the best modern practice and with materials and workmanship of the highest quality. Contractor shall check and verify all dimensions, grades, and levels before commencement of performance and whenever necessary during the progress thereof.
6. **PAYMENTS.** Owner shall pay the Contractor in accordance with the provisions of G.L. c. 30, §39G for complete and accepted performance of the Work, subject to additions and deductions by Change Orders. The Contractor agrees to provide with each payment application (invoice), lien waivers sufficient to discharge any liability from the Owner to Contractor. Periodic payments shall cover work completed through the end of each month. When periodic payments are to be made, the Contractor shall submit to the Owner, on Owner' forms, an estimate of the total amount of work accomplished, which will show the computed amount due less the retention authorized by G.L. c. 30, §39G. Upon receipt from the Contractor of a complete periodic estimate requesting payment of the amount due for the preceding periodic estimate period, the Owner shall make a periodic payment to the Contractor for the work performed during the preceding estimate period and for the materials not incorporated in the work but delivered and suitably stored at the site, or at some location agreed upon in writing, to which the Contractor has title or to which a Subcontractor has title and has authorized the Contractor to transfer title to the Owner, upon certification by the Contractor that he is the lawful owner and that the materials are free from all encumbrances. The Owner may deduct from a periodic payment a retention based on its estimate of the fair value of its claims against the Contractor, a retention for direct payments to subcontractors based on demands for same in accordance with the provisions of G.L. c. 30, §39F, and a retention to secure satisfactory performance of the contractual in the amount of five per cent (5%) of the approved amount of any periodic payment, and the same right to retention shall apply to bonded subcontractors entitled to direct payment under said §39F of chapter 30. Each periodic payment application must be approved by the Project Engineer and will not be considered as submitted until the Owner, Contractor and Project Engineer agree to unit quantities covered by the payment application. Once Owner has received the approved request for payment application, Owner shall process the Contractor's invoice and pay Contractor any undisputed amount within fifteen (15) calendar days from the date of receipt of a complete application for payment from Contractor.
7. **JOB SITE.** The Contractor shall at all times enforce strict discipline and good order among its employees and shall not employ on the Work any unfit person or anyone not skilled in the assigned task. The Contractor at all times shall keep the job site free from accumulation of waste materials or rubbish caused by its operations. At the completion of the Work, it shall remove all its waste materials and rubbish from and about the job site as well as its tools, construction equipment, machinery and surplus materials. The Contractor shall comply with all laws, ordinances, rules, regulations, and lawful orders of any public authority bearing on the performance of the Work, the safety of persons and property and their protection from damage, injury, or loss. Contractor shall provide repair response

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within twenty-four (24) hours of request by Owner during the course of performance of the Work under this Agreement for any repair work that has been poorly constructed and or performed or any work that results in either consequential or actual damage to any property associated with the Contractor's operations.

8. STORAGE OF MATERIALS. Materials and equipment shall be stored in a neat and orderly manner at locations designated by the Owner, taking all necessary precautions to prevent fire hazards and spontaneous combustion and to conform to the requirements of all applicable regulatory agencies and insurance policies.
9. EQUIPMENT AND MATERIALS. Contractor shall furnish all labor, tools, scaffolding, ladders, equipment, supplies and materials required in performing all Work under this Agreement. Owner assumes no liability or responsibility for the care, safety, or preservation of any tools, machinery, equipment, material or supplies and all risks thereof are assumed by Contractor.
10. SAFETY PROCEDURES. Contractor shall at all times take all necessary and customary precautions in introducing and maintaining safety measures to protect the persons and property of others on or adjacent to the Work site against all damage, loss, or injury resulting from the Work involved under this Agreement. Contractor shall comply with any site-specific safety plans for the individual project properties. Protective arrangements will be taken in all instances to prevent Work operations from in any way damaging the premises or any personal property or any other work or operations, and from causing or allowing any pollution to leak, flow, or escape into any waterway or sewer. Contractor's obligation to protect shall include the duty to provide, place, and adequately maintain at or about the Worksite suitable and sufficient guards, lights, barricades, and enclosures. Contractor shall dispose of all hazardous materials used or produced in connection with this Agreement in the manner required by law.
11. PERMITS AND TAXES. The Contractor shall pay any and all federal, state, and municipal taxes for which the Contractor may be liable in carrying out this Agreement.
12. LIQUIDATED DAMAGES. If the Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner, not as a penalty but as liquidated damages for such breach of contract, the amount of \$1,500.00 for each and every calendar day that the Contract shall be in default after the time stipulated in the Contract for completing the work. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be retained from time to time by, and credited to, the Owner from current periodic and the final payment estimates.

Contractor shall accordingly prosecute all Work diligently, using such means and methods of construction as will assure full completion not later than the dates set forth, respectively, as such dates may for good cause (as set forth in the Construction Documents) be extended by the Owner. Nothing in this Article, however, grants the Contractor the privilege to use means or methods that do not accord with sound and accepted practices. The amounts of liquidated damages established herein shall be cumulative and may, at Owner' option, be retained or deducted in whole or in part as a credit from any Contract Sum amounts then owed Contractor or which may have been paid to the Contractor. If no amounts are then owed to Contractor, Contractor shall pay to Owner the amount of liquidated damages upon

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written demand therefor. The assessment of liquidated damages shall cease once the Contractor has fully and completely remedied any breach as set forth hereunder.

13. ABANDONMENT; INCREASE. All Work shall be performed according to a mutually agreed upon schedule. The suspension of work by the Contractor for any reason (other than the sole fault of the Owner) which exceeds four hundred and eighty hours (480) hours shall be deemed abandonment of the project by the Contractor, and the Owner shall have available any and all remedies, including but not limited to surety participation pursuant to the terms of the Performance Bond.

It is further agreed that in case the work called for under this Agreement is not completed in all of its parts and requirements within the number of calendar days specified, Owner shall have the right to increase the number of calendar days or not, as may seem best to serve the interest of Owner; and if it is decided to increase the said number of calendar days, Owner shall further have the right to charge to Contractor, and deduct from the final payment for the work, all or any part, as Owner may deem proper, of the actual cost of engineering, inspection, superintendence, and other overhead expenses of Owner which are directly chargeable to this Agreement, except that the cost of final surveys and the preparation of the final estimate shall not be included in such charges to be paid by Contractor.

14. GUARANTY. Except as otherwise may be provided herein, Contractor hereby expressly guarantees for two (2) full years from the date of the final completion of the work under this Agreement and acceptance thereof by Owner, to repair or replace any part of the work performed hereunder which constitutes a defect resulting from the use of inferior or defective materials, equipment or workmanship. If, within said period, any repairs or replacements in connection with the work are, in the opinion of the Project Engineer, rendered necessary as a result of the use of inferior or defective materials, equipment or workmanship, Contractor agrees, upon receipt of notice from Owner, and without expense to Owner, to promptly repair or replace such material or workmanship and/or correct any and all defects therein. If Contractor, after such notice, fails to proceed promptly to comply with the terms of this guarantee, Owner may perform the work necessary to effectuate such correction and recover the cost thereof from Contractor or his sureties.

Any and all other special guarantees which may be applicable to definite parts of the work under this Agreement shall be considered as an additional guarantee and shall not reduce or limit the guarantee as provided by Contractor pursuant to this paragraph during the first year of the life of such guarantee.

Upon request of the Owner, as security for the faithful performance by the Contractor for maintenance for the period herein required, the Contractor, upon acceptance of the work performed under the Contract, in addition to the Performance and Material and Labor Bonds required hereunder, shall also provide the owner with a Maintenance Bond in the penal sum of ten percent (10%) of the contract price.

15. INDEMNIFICATION. The Contractor hereby indemnifies and shall at all times save and hold harmless the Town of Chatham, and its officers, attorneys, employees, and agents from and against any and all claims (including workers' compensation and wage claims), demands, suits, actions, liabilities, damages, penalties, judgments, and costs and expenses, including without limitation additional engineering costs and attorney's fees and the costs and expenses of litigation, of or by anyone that in any way is caused by, arises out of, or is occasioned by the performance, activities, operations, conducts, negligence, or omissions of the Contractor, or any of its agents or employees, including subcontractors.

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16. INSURANCE. Contractor, at its sole cost and expense, shall acquire and maintain in full force and effect throughout the term of this Agreement Workers' Compensation, employer's liability, commercial general liability, and owned, non-owned and hired automobile liability insurance coverage relating to Contractor's Work to be performed hereunder covering Owner' and Department's respective risks, as their interest may appear, in form subject to the approval of the Owner. The minimum amounts of coverage corresponding to the aforesaid categories of insurance per insurable event shall be as follows:

Insurance Category	Minimum Limits
Workers' Compensation	Statutory minimum and endorsement for United States Longshoremen's & Harbor Workers Act, the Jones Act Coverages
Employer's Liability	\$1,000,000.00 per accident for bodily injury or disease
Commercial General Liability	\$3,000,000.00 per occurrence for bodily injury, personal injury and property damage.
Excess Liability (Umbrella)	\$3,000,000.00 per occurrence for bodily injury, personal injury and property damage.
Automobile Liability	\$1,000,000.00 per accident for bodily injury and property damage (coverage required to the extent applicable to Contractor's vehicle usage in performing work hereunder).

Any deductibles or self-insured retentions must be declared to, and approved by Owner. At the option of Owner, either Contractor's insurer shall reduce or eliminate the deductibles or self-insured retentions with respect to Owner, it's Board, commissions, boards, committees, officers, agents and employees, or Contractor shall procure a bond guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Concurrently with the execution of this Agreement, Contractor shall furnish Owner with certificates of the insurance required hereunder and, with respect to evidence of commercial general liability automobile liability and fire insurance coverage, original endorsements:

- a. Precluding cancellation or reduction in coverage before the expiration of thirty (30) days after Owner shall have received written notification of cancellation or reduction in coverage first class mail.
- b. Providing that Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability (cross liability endorsements);

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- c. Naming Owner, its Board, commissions, boards, committees, officers, employees and agents as additional insured's; and
  - d. Providing that Contractor's insurance shall be primary insurance relating to Contractor's work hereunder with respect to Owner, and further providing that any insurance or self-insurance maintained by Owner shall not be excess of Contractor's insurance and shall not be contributory with it.
17. FAITHFUL PERFORMANCE BOND. Contractor shall provide, on the execution of this Agreement, a good and sufficient corporate surety bond in the penal sum of one hundred percent (100%) of amount bid, which bond shall be conditioned upon the faithful performance of all work required to be performed by Contractor under this Agreement. Said bond shall be liable for any and all penalties and obligations which may be incurred by Contractor under this Agreement. Acceptance of the bond by the Owner is subject to the review and approval of the bond by the Owner's Counsel.
18. PAYMENT BOND. In addition to the faithful performance bond required herein, Contractor shall furnish a good and sufficient corporate surety bond in the penal sum of fifty percent (50%) of amount of bid. Acceptance of the bond by the Owner is subject to the review and approval of the bond by the Owner's Counsel.
19. TIME DELAYS; NO DAMAGES FOR DELAY. If the Contractor is delayed in the performance of the Work due to changes ordered in the Work by the Owner or, by labor disputes, fire, unusual delay in transportation, unavoidable casualties, certified natural disasters, then the contract time may be extended by a Change Order for such reasonable time as both parties have mutually agreed upon. Winter weather conditions are not a reason for a delay in the Contractor's performance of work. Except as may otherwise be provided herein, Contractor agrees, as a special inducement to the Owner, to make no claim for damages for delay in the performance of this Contract occasioned by the Owner's act, or omission to act, or the acts or omissions of anyone acting on the Owner's behalf. Contractor agrees that any claim for such delays attributable to the Owner or anyone acting on its behalf shall be fully and exclusively addressed by an extension of time to complete performance of the Contract Work.
20. PAYMENT OF MATERIALMAN AND LABORERS; DIRECT PAYMENT. The Contractor shall make prompt payment of all claims for labor performed and materials furnished, used or consumed in the Work, including without limitation fuel, lumber, building materials, machinery, vehicles, tractors, equipment, fixtures, apparatus, tools, appliances, supplies, electric energy, gasoline and other motor oil, lubricating oil and greases, and the premiums for Worker's Compensation insurance. Contractor shall indemnify and hold Owner harmless for any and all losses or expenses from any and all mechanic's or material man's liens from being filed on any Owner's Property. Should any mechanic's liens or materials man's liens be filed by Contractor agrees to have any and all releases cleared and satisfied prior to any payments being released. The Owner shall, in its discretion notify Contractor and or Contractor's representative of any lien and require Contractor to release liens as a condition precedent to further monthly progress payments.
- Direct Payment (G.L. c. 30, §39F).
- (a) Forthwith after the Contractor receives payment on account of a periodic estimate, the Contractor shall pay to each Subcontractor the amount paid for the labor performed and the materials furnished by that Subcontractor, less any amount specified in any court

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proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.

(b) Not later than the sixty-fifth day after each Subcontractor substantially completes his work in accordance with the plans and specifications, the entire balance due under the subcontract less amounts retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of work, shall be due the Subcontractor; and the Owner shall pay that amount to the Contractor. The Contractor shall forthwith pay to the Subcontractor the full amount received from the Owner less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the Subcontractor by the Contractor.

(c) Each payment made by the Owner to the Contractor pursuant to subparagraphs (a) and (b) of this section for the labor performed and the materials furnished by a Subcontractor shall be made to the Contractor for the account of that Subcontractor; and the Owner shall take reasonable steps to compel the Contractor to make each such payment to each such Subcontractor. If the Owner has received a demand for direct payment from a Subcontractor for any amount which has already been included in a payment to the Contractor or which is to be included in a payment to the Contractor for payment to the Subcontractor as provided in subparagraphs (a) and (b), the Owner shall act upon the demand as provided in this section.

(d) If, within seventy days after the Subcontractor has substantially completed the subcontract work, the Subcontractor has not received from the Contractor the balance due under the subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount retained by the Owner as the estimated cost of completing the incomplete and unsatisfactory items of work, the Subcontractor may demand direct payment of that balance from the Owner. The demand shall be by a sworn statement delivered to or sent by certified mail to the Owner, and a copy shall be delivered to or sent by certified mail to the Contractor at the same time. The demand shall contain a detailed breakdown of the balance due under the subcontract and also a statement of the status of completion of the subcontract work. Any demand made after substantial completion of the subcontract work shall be valid even if delivered or mailed prior to the seventieth day after the Subcontractor has substantially completed the subcontract work. Within ten days after the Subcontractor has delivered or so mailed the demand to the Owner and delivered or so mailed a copy to the Contractor, the Contractor may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the Owner and a copy shall be delivered to or sent by certified mail to the Subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract including any amount due for extra labor and materials furnished to the Contractor and of the amount due for each claim made by the Contractor against the Subcontractor.

(e) Within fifteen days after receipt of the demand by the Owner, but in no event prior to the seventieth day after substantial completion of the subcontract work, the Owner shall make direct payment to the Subcontractor of the balance due under the subcontract including any amount due for extra labor and materials furnished to the Contractor, less any amount (i) retained by the Owner as the estimated cost of completing the incomplete or unsatisfactory items of work, (ii) specified in any court proceedings barring such payment, or (iii) disputed by the Contractor in the sworn reply; provided, that the Owner shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown

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required by subparagraph (d). The Owner shall make further direct payments to the Subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in parts (i) and (ii) of this subparagraph.

(f) The Owner shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of subparagraph (e) in an interest-bearing joint account in the names of the Contractor and the Subcontractor in a bank in Massachusetts selected by the Owner or agreed upon by the Contractor and the Subcontractor and shall notify the Contractor and the Subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the Contractor and the Subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to subparagraph (f) shall be made out of amounts payable to the Contractor at the time of receipt of a demand for direct payment from a Subcontractor and out of amounts which later become payable to the Contractor and in the order of receipt of such demands from Subcontractors. All direct payments shall discharge the obligation of the Owner to the Contractor to the extent of such payment.

(h) The Owner shall deduct from payments to the Contractor amounts which, together with the deposits in interest-bearing accounts pursuant to subparagraph (f), are sufficient to satisfy all unpaid balances of demands for direct payment received from Subcontractors. All such amounts shall be earmarked for such direct payments, and the Subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the Contractor.

21. SUBSTANTIAL COMPLETION AND FINAL PAYMENT (G.L. c.30, §39G).

Upon substantial completion of the work required by the Contract, the Contractor shall present in writing to the Owner its certification that the work has been substantially completed. Within twenty-one days thereafter, the Owner shall present to the Contractor either a written declaration that the work has been substantially completed or an itemized list of incomplete or unsatisfactory work items required by the contract sufficient to demonstrate that the work has not been substantially completed. The Owner may include with such list a notice setting forth a reasonable time, which shall not in any event be prior to the contract completion date, within which the Contractor must achieve substantial completion of the work. In the event that the Owner fails to respond, by presentation of a written declaration or itemized list as aforesaid, to the Contractor's certification within the twenty-one-day period, the Contractor's certification shall take effect as the Owner's declaration that the work has been substantially completed.

Within sixty-five days after the effective date of a declaration of a substantial completion, the Owner shall prepare and forthwith send to the Contractor for acceptance a substantial completion estimate for the quantity and price of the work done and all but one per cent retainage, if held by the Owner, on that work, including the quantity, price and all but one per cent retainage, if held by the Owner, for the undisputed part of each work item and extra work item in dispute but excluding the disputed part thereof, less the estimated cost of completing all incomplete and unsatisfactory work items and less the total periodic payments made to date for the work. The Owner also shall deduct from the substantial completion estimate an amount equal to the sum of all demands for direct payment filed

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by Subcontractors and not yet paid to Subcontractors or deposited in joint accounts pursuant to G.L. c. 30, §39F, but no contract subject to said §39F shall contain any other provision authorizing the Owner to deduct any amount by virtue of claims asserted against the contract by Subcontractors, material suppliers or others.

If the Owner fails to prepare and send to the Contractor any substantial completion estimate required by this section on or before the date herein above set forth, the Owner shall pay to the Contractor interest on the amount which would have been due to the Contractor pursuant to such substantial completion estimate at the rate of three percentage points above the rediscount rate then charged by the Federal Reserve Bank of Boston from such date to the date on which the Owner sends that substantial completion estimate to the contractor for acceptance or to the date of payment therefor, whichever occurs first. The Owner shall include the amount of such interest in the substantial completion estimate.

Within fifteen days after the effective date of the declaration of substantial completion, the Owner shall send to the Contractor by certified mail, return receipt requested, a complete list of all incomplete or unsatisfactory work items, and, unless delayed by causes beyond his control, the Contractor shall complete or such work items within forty-five days after the receipt of such list or before the then contract completion date, whichever is later. If the Contractor fails to complete such work within such time, the Owner may, subsequent to seven days' written notice to the Contractor by certified mail, return receipt requested, terminate the contract and complete the incomplete or unsatisfactory work items and charge the cost of same to the Contractor.

Within thirty days after receipt by the Owner of a notice from the Contractor stating that all of the work required by the contract has been completed, the Owner shall prepare and forthwith send to the Contractor for acceptance a final estimate for the quantity and price of the work done and all retainage, if held by the Owner, on that work less all payments made to date, unless the Owner's inspection shows that work items required by the contract remain incomplete or unsatisfactory, or that documentation required by the contract has not been completed. If the Owner fails to prepare and send to the Contractor the final estimate within thirty days after receipt of notice of completion, the Owner shall pay to the Contractor interest on the amount which would have been due to the Contractor pursuant to such final estimate at the rate hereinabove provided from the thirtieth day after such completion until the date on which the Owner sends the final estimate to the Contractor for acceptance or the date of payment therefor, whichever occurs first, provided that the Owner's inspection shows that no work items required by the contract remain incomplete or unsatisfactory. Interest shall not be paid hereunder on amounts for which interest is required to be paid in connection with the substantial completion estimate as hereinabove provided. The Owner shall include the amount of the interest required to be paid hereunder in the final estimate.

The Owner shall pay the amount due pursuant to any substantial completion or final estimate within thirty-five days after receipt of written acceptance for such estimate from the Contractor and shall pay interest on the amount due pursuant to such estimate at the rate hereinabove provided from that thirty-fifth day to the date of payment.

23. CHANGE ORDERS. (a) Contractor understands that the Owner may modify or change the details of the Project so as to require the performance of extra Work. All change orders or modifications to the Agreement shall be in writing, signed by the Contractor and the Owner. If any changes are made, Contractor will perform the same but only after receiving a written order for such performance from the Owner, it being understood by Contractor

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that under no circumstances shall any extra Work be performed unless and until such written order is given to Contractor by the Owner. For any such extra Work performed, Contractor shall be compensated by the Owner at the unit prices set forth in the Contract Documents, or for unspecified items shall be negotiated by the Owner and Contractor in a commercially reasonable amount at the time the Change Order is signed. The Owner may at its election omit items from the Contract Work whenever the Owner deems it advisable to do so. And if the Owner shall notify Contractor of such omission, the omitted Work shall not be performed and there shall be deducted from the Contract price at the stated amounts set forth in the Contract Documents or for unspecified items, a commercially reasonable amount at the time the Change Order is signed to compensate for the omission.

If any dispute shall arise at any time on a claim by Contractor that an item of Work is not Contract Work but extra Work, Contractor shall nevertheless perform the same if directed to do so by the Owner. However, to preserve Contractor's right to claim extra compensation for the disputed Work, Contractor must, prior to the commencement of the disputed Work, notify the Owner in writing that Contractor is performing the same under protest. The same procedure shall prevail as to any dispute as to a deduction for omitted Work (or as the case may be, to sustain Contractor's contention as to the appropriate compensation for extra Work that is not disputed to be an "extra") the notice in that circumstance to be given no later than ten (10) days after the tender of payment by the Owner to Contractor of the reduced amount (failing such written protest, it shall be deemed that Contractor has acquiesced to the Owner's contention that the Work is not extra but Contract Work or that the reduction (or amount of compensation for a non-disputed "extra" is correct, as the case may be). The giving of the protest provided for above, and giving it timely, are express conditions precedent to maintaining any remedial procedure, whether arbitration or otherwise, pertaining to Contractor's claim.

24. **WARRANTIES AND CORRECTION OF WORK.** Contractor warrants materials and workmanship to be in compliance with all applicable codes, ordinances and laws, constructed according to sound engineering and construction standards, in a workmanlike manner, and to be free from defects and liens at the time of installation and performance and as of the Completion Date. Contractor shall promptly perform such work and supply such materials necessary to correct, at its own expense, defects in materials and workmanship, and any Work failing to conform to the Agreement. In the event that Contractor fails to perform any Warranty Work within thirty (30) days of written notice by the Owner, or in the event that performance is not possible within such time period because of weather or other unavoidable delays and if the Contractor fails to provide a written undertaking to the Owner to perform such Warranty Work within a specific time period after notice, then the Owner shall be entitled to contract for the repairs or replacement of the defective work with a third party and Contractor agrees to reimburse the Owner for the costs of such Warranty Work promptly upon demand, together with interest at the rate provided herein on any sums unpaid under the Agreement and all costs of collection, including reasonable attorney's fees, if such reimbursement is not made within thirty (30) days of written demand therefore by the Owner.
25. **COOPERATION WITH CONSULTANT.** Contractor understands and agrees that the Owner has hired GEI Consultants Inc. as, Project Engineer / Project Consultant and Pomroy Associates LLC as Construction Management and/or oversight. Contractor agrees to fully cooperate with the all selected Owners Representatives or any other such person or organization with regard to such oversight.

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26. **DEFAULT AND TERMINATION.** The following shall be considered to be Events of Default under the Contract:
- a. Contractor's failure to complete all Work in accordance with the schedule or schedules provided for in the Contract Documents;
  - b. Contractor's failure to perform the Work described in the Contract Documents in accordance with the scope of services and specifications provided;
  - c. The dissolution, termination of existence, insolvency, or business failure of the Contractor;
  - d. The appointment of a receiver for any property belonging to Contractor;
  - e. Contractor's making of an assignment for the benefit of creditors, or the commencement of proceedings under a bankruptcy or insolvency law by or against the Contractor;
  - f. The failure of the Contractor to obtain or maintain any insurance coverage required under the Contract Documents; and
  - g. Contractor's failure to comply with any of the terms and conditions as set forth in the Agreement, specifications, plans and permits required.

If an Event of Default is not corrected or remedied within five (5) working days of written notice of such default, then the Owner shall be entitled to terminate this Contract without further notice. In such event, the Owner shall be entitled to contract for the completion of the Work to be performed under the Contract by a third party and Contractor shall be responsible for all extra costs and damages incurred by the Owner.

27. **NOTICES.** Notices to be given under this Agreement shall be in writing and may be personally delivered or sent by United States mail, first class postage prepaid, addressed to the respective party at the address set forth above, or to such other addresses that the parties shall designate in writing from time to time. Notices shall be deemed given when personally delivered or three (3) business days after mailing.
28. **CAPTIONS.** Any captions to or headings of the sections, paragraphs or subparagraphs of this Agreement are solely for the convenience of the parties, are not a part of this Agreement and shall not be used for the interpretation or determination of the validity of this Agreement or any provision hereof.
29. **INCONSISTENCIES.** To the extent that any term or provision of the Contractor's Bid is inconsistent with any term or provision contained in this document, the terms and provisions contained in this document shall supersede and control this Agreement. To the extent that any term or provision in this agreement is found to be void or unenforceable, nevertheless any and all remaining terms shall remain in full force.
30. **DEFINITIONS.** Terms and phrases, which are defined in any part of this Agreement, shall have the defined meanings wherever used throughout this Agreement. The terms "hereunder" and "herein" and similar terms used in this Agreement shall refer to this Agreement in its entirety and not merely the article, section, sub-section, paragraph or subparagraph in which they are used.
31. **STATE LAW.** This Agreement and its application shall be governed by the laws of the Commonwealth of Massachusetts. Any and all disputes shall be brought in the trial court for **Barnstable County**, Massachusetts

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32. ENTIRE AGREEMENT; INTEGRATION. This Agreement supersedes any and all other Agreements, either oral or in writing, and contains all of the covenants and agreements between the parties. Each party to this Agreement acknowledges that no representations, inducements, promises or agreements, orally or otherwise, have been made by either party or anyone acting on behalf of any party to this Agreement, which are not embodied herein, and that no other agreement, statement or promise not contained in this Agreement shall be valid or binding. Any modification of this Agreement will be effective only if it is in writing, signed by the party to be charged. If any provision in this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way. Failure of any party hereto at any time to require performance by the other party of any provision of this Agreement shall not affect the right of such party to require performance of that provision, and any waiver by any party of any breach of any provision of this Agreement shall not be construed as a waiver of any continuing or succeeding breach of such provision, a waiver of the provision itself, or a waiver of any right under this Agreement. This Agreement may be executed in any number of counterparts by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed to an original and all of which counterparts of this Agreement, taken together, shall constitute but one and the same instrument. Neither Contractor nor Owner shall assign, sublet or transfer any rights under or interest of this Agreement (including, but without limitation, moneys that may become due or moneys that are due) without the prior written consent of the other, except to the extent that any assignment, subletting or transfer is mandated by law or the effect of this limitation may be restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement. Contractor and Owner each is hereby bound, and the partners, successors, approved assigns, executors, administrators, and legal representatives of each are hereby bound to the other party to this Agreement and to the partners, successors, approved assigns, executors, administrators, and legal representatives of such other party, in respect to all covenants, agreements and obligations of this Agreement.

The documents listed below are part of the Contract Documents and are incorporated by this reference as if fully set forth herein. Contractor shall pay particular attention to any and all mitigation measures set forth in the permit documents and shall comply with same.

- A. Contract Specifications
- B. Contract Plans
- C. Addendums
- D. Notice to Bidders
- E. Bidding Requirements
- F. Bid Notice of Award
- G. Agreement
- H. Faithful Performance and Payment Bonds
- I. General and Special Conditions
- J. Technical Specifications
- K. Regulatory Permits
- L. Attachment A: Prevailing Wage Rates

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33. **UNDISPUTED PAYMENTS.** The acceptance by Contractor of an undisputed payment made under the terms of the Contract shall operate as, and shall be, a release to Owner, and their duly authorized agents, from all claim of and/or liability to Contractor arising by virtue of the Contract related to those amounts. Disputed contract claims in stated amounts may be, specifically excluded by Contractor from the operation of the release.
34. **SUBSTITUTION OF SECURITIES.** The Contractor may substitute securities for the amounts retained by the Owner to ensure performance of the Contract in a form acceptable to the Owner(s).
35. **STATEMENT UNDER PENALTY OF PERJURY.** The representations made herein, including the Bidder's licensing information hereinafter furnished, are made under penalty of perjury. The undersigned understands that any bid not containing said licensing information, or containing any information, which is subsequently proven false, shall be considered non-responsive, and shall be rejected by Owner.
36. **UNENFORCEABILITY.** In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.
37. **FINAL PAYMENT SUBJECT TO ACCEPTANCE.** Final Payment is subject to acceptance of the Project by Owner.
38. **FORCE MAJEURE.** Either party's performance under this agreement is subject to acts of God, war (declared or undeclared), government regulation, terrorism, disaster, strikes, civil disorder, curtailment of transportation facilities, or similar occurrence beyond the party's control, making it impossible, illegal or commercially impracticable for one or both parties to perform its obligations under this agreement, in whole or in part. Either party may terminate this agreement without liability for any one or more of such reasons upon written notice to the other party within ten (10) days of such occurrence or receipt of notice of any of the above occurrences.
39. **AUTHORIZATION.** Each party by signing below hereby warrants that they are fully and duly authorized to enter into this agreement, do so freely and have read and understand the conditions and terms set forth herein along with any and all other documents forming the Contract Documents.

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**IN WITNESS WHEREOF**, the respective parties hereto have hereinto set their hands and seals

the day \_\_\_\_\_ of \_\_\_\_\_, 20\_\_\_\_\_.

**TOWN OF CHATHAM**

ATTEST:

BY: \_\_\_\_\_  
(Name) (Title)

**THE CONTRACTOR**

ATTEST:

BY: \_\_\_\_\_  
(Name) (Title)

\*\*\*END OF SECTION\*\*\*

**For Information Only**

**SECTION 02010**

**FAITHFUL PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS: that, WHEREAS, Town of Chatham ("Owner"), Commonwealth of Massachusetts, has awarded to \_\_\_\_\_, hereinafter designated as the "Principal", a contract (the "Contract"), the terms and provisions of which Contract are incorporated herein by reference, for constructing the following project:

**TRAP DOCK RECONSTRUCTION  
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**WHEREAS**, said Principal is required under the terms of said Contract to furnish a bond for the faithful performance of said Contract;

**NOW, THEREFORE**, we, the Principal, and \_\_\_\_\_, as surety, are held and firmly bound unto Owner in the penal sum of \_\_\_\_\_ and \_\_\_\_\_/100 Dollars (\$ \_\_\_\_\_), lawful money of the United States, being one hundred percent (100%) of the Contract amount, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION IS SUCH**, that if the above bounden Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and will truly keep and faithfully perform the covenants, conditions, and agreements in the said Contract and any alterations made as therein provided, on his or their part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless, Owner, its Board, officers, employees and agents, as therein stipulated, then this obligation shall be null and void; otherwise it shall be and remain in full force and virtue.

As a condition precedent to the satisfactory completion of the said Contract, the above obligation shall hold good for a period of one (1) year after the completion and acceptance of the said work, during which time if the above bounded Principal, his or its heirs, executors, administrators, successors or assigns shall fail to make full, complete and satisfactory repair and replacements or totally protect the said Owner from loss or damage made evident during said period of one (1) year from the date of acceptance of said work, and resulting from or caused by defective materials or faulty workmanship, in the prosecution of the work done, the above obligation shall be and remain in full force and virtue.

And the said Surety, for value received, hereby stipulates and agrees to waive any consent to change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any way affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work, or to the Specifications.

In the event Owner, or its successors or assigns, shall be the prevailing party in an action brought upon this bond, then, in addition to the penal sum hereinabove specified, we agree to pay to the

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said Owner, or its successors or assigns, a reasonable sum on account of attorney's fees in such action, which sum shall be fixed by the court.

**IN WITNESS THEREOF**, the above bounden parties have executed this instrument under their seals this day of \_\_\_\_\_, 20\_\_\_\_\_, the name and corporate seal of each corporate party being hereto affixed, and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

**Principal**

**Witness as to Principal**

By:

\_\_\_\_\_

Address

\_\_\_\_\_

**Surety**

ATTEST:

**Witness to Surety**

**Attorney-in-Fact**

(Seal)

If **Contractor** is partnership, all partners must execute **BOND**.

For Information Only

\*\*\*END OF SECTION\*\*\*

**SECTION 00202**

**PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS: That we, \_\_\_\_\_

as Principal, and, \_\_\_\_\_ organized and existing under the laws of the Commonwealth of Massachusetts, and authorized to execute bonds and undertaking as sole surety, as Surety, are held and firmly bound unto any and all persons named whose claim has not been paid by the Contractor, company or corporation in the aggregate total of \_\_\_\_\_ and \_\_\_\_/100 Dollars (\$\_\_\_\_\_) (being 50% of the Contract amount) for the payment whereof, well and truly to be made, said Principal and Surety bond themselves, their heirs, administrators, successors, and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH** that, whereas the above with Town of Chatham ("Owner") to do the following work, to-wit:

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**NOW, THEREFORE**, if the above-bounden Principal or his subcontractors fail to pay any of the persons named or unnamed, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of the Contractor and his subcontractor pursuant to the Unemployment Insurance Code of the Commonwealth of Massachusetts, with respect to such work and labor, the surety will pay for the same, in the amount not exceeding the sum specified in this bond, and also, in case suit is brought upon this bond, a reasonable attorney's fee, to be fixed by the Court.

This bond shall inure to the benefit of any person named or who has provided goods or services so as to give a right of action to them or their assignees in suit brought upon this bond.

And the said Surety, for value received, hereby stipulates and agrees to waive the provisions regarding consent to change, extension of time alteration, or addition to the terms of the Contract, or to the work to be performed thereunder, or the Specifications accompanying the same, shall in any way affect its obligations on this bond; and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract, or to the work, or to the Specifications.

**IN WITNESS WHEREOF**, the above bounden parties have executed this instrument under their seals this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

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**Principal**

**Witness as to Principal**

By: \_\_\_\_\_

By:

\_\_\_\_\_

\_\_\_\_\_

**Address**

\_\_\_\_\_

**Surety**

ATTEST:

\_\_\_\_\_

**Witness to Surety**

\_\_\_\_\_

**Attorney in Fact**

\_\_\_\_\_ (Seal)

If **Contractor** is partnership, all partners must execute **BOND**.

**For Information Only**

\*\*\*END OF SECTION\*\*\*

**SECTION 01000**

**GENERAL AND SPECIAL CONDITIONS**

**PART 1: GENERAL**

**1.01 SCOPE OF WORK**

- A.** The work to be done under this contract consists of furnishing all labor, tools, materials and equipment required to construct the entire project, along with any and all necessary restoration. All work shall be performed as shown on the drawings, specified herein and/or is evidently required to complete the work and the specifications set forth herein. Performance Bond shall equal 100% of contract price. Payment Bond shall equal 50% of contract price.
- B.** The Owner may select a Contractor based upon bids received. The Owner will require an executed contract, which it will prepare, bonds and insurance certificates as set forth herein prior to any activities being commenced by the selected Contractor.
- C.** Owner reserves the right to reject any and all Bids if it is deemed to be in his/her best interest.
- D.** The bid and schedule of value(s) as proposed by the Contractor in its offer shall be firm and include any and all labor, materials, equipment, supplies, overhead and profit to perform and deliver a complete project as set forth herein and on the project plans.
- E.** The Contractor must include any and all materials, labor, equipment or other items in each bid item. If an item includes ancillary work or apparatuses, then the item must be priced by the Contractor to include such other work.
- F.** Measurements and calculations shall be reviewed for accuracy by the Project Engineer and prepared for submission to the Owner. The Contractor shall coordinate any and all construction activities to allow the Project Engineer to verify quantities such that verification activities are minimal, and the processing of payment application is effectuated in a timely and organized manner.
- G.** Any requests for information (RFI's) shall be submitted to the Project Engineer in writing. The Project Engineer shall endeavor to have all responses from Contractor's request for information within seven (7) working days, thereby the Contractor is to plan construction activities accordingly.
- H.** The Contractor is an independent entity and shall act as an independent Contractor and not as an agent or employee of Owner or Engineer. Nothing herein creates a relationship of partnership, joint venture, or principal and agent between the parties. Contractor shall have complete professional, managerial, technical and supervisory responsibility for the work provided hereunder including the direction and control of all personnel providing goods, equipment, materials and/or services pursuant to or in furtherance of the work whether directly or indirectly employed or working for the Owner or the Engineer. The Owner and the Engineer shall retain the right to stop and start the work, adjust the schedule of work, coordinate the Contractor's work with other work and receive reports, however, such rights shall not be construed as controlling the details of the work.

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**1.02 PROJECT SITE**

- A. The work to be performed is at Chatham Trap Dock, located at 613 Stage Harbor Road, Chatham, MA. The Project exact location is denoted as shown on the plans/drawings associated with this project.

**1.03 DRAWINGS AND SPECIFICATIONS**

- A. All work shall conform and be in accordance with these specifications and/or the accompanying drawings entitled:

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Project plans are dated October 1, 2019 consisting of 15 Sheets prepared by GEI Consultants Inc., 124 Grove Street, Suite 300, Franklin, MA 02038, and 9 Sheets prepared by RW Sullivan, 529 Main Street, Suite 203, Boston MA 02129 and on file with the Owner and the Project Engineer, GEI Consultants Inc., 124 Grove Street, Suite 300, Franklin, MA 02038 and any changes, drawings and direction(s) that may from time to time be furnished by the Project Engineer.

**1.04 WORK SEQUENCE**

- A. General: There are certain essential criteria relative to the preparation of a work sequence and time schedule that the Contractor will be required to implement and follow during the performance of all work. The Contractor shall begin work locating the project limits and mobilization of all necessary equipment on to the project site.
- B. The Contractor's work methods shall be planned and carried out such that there is no damage to any existing structures or adjacent properties. Any and all existing structures are to be carefully and adequately protected, such that they are not in any way damaged or compromised. Any damage to adjacent structures or any property which is in any way damaged as a result of (directly or consequently) to any activities undertaken by the Contractor shall remain at all times at the Contractor's expense and peril.
- C. Contractor's schedule for progress and completion of work will be reviewed and approved by Project Engineer. The Contractor's work methods shall be planned and carried out such that there is no damage to any existing structures. Any and all existing structures are to be carefully and adequately protected, such that they are not in any way damaged or compromised. Any damage to adjacent structures or any property which is in any way damaged as a result of (directly or consequently) to any activities undertaken by the Contractor shall remain at all times at the Contractor's expense and peril.
- D. The Contractor shall be required to commence work under this contract within fourteen (14) days after the date of receipt by him/her of Notice to Proceed. Contractor shall have Substantial Completion of all work, except those determined by the Owner as punch list, by April 17, 2020. All work shall be completed by **May 1, 2020**.
- E. The Order of Work shall be developed by the Contractor and submitted in his/her construction schedule. The Contractor will be responsible for coordinating construction activities with the Owner's facility schedules and potential construction activities at adjacent properties not limited to direct and indirect abutters. As this is an active boating facility, the Contractor will be required to move equipment to allow access to site for boat

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ramp or other boating operations as designated by the Town. No additional payment will be made for these moves.

- F. Hours of Operation: Allowable hours of operation shall be coordinated with the Town of Chatham and shall comply with all local Regulations.
- G. The Contractor is advised that completion of this project is essential to the Owner' facility operations; thus, time is of the essence. Failure to complete this project within the time frame stated herein will result in a substantial and material impact on a facility operations. Accordingly, an assessment in the form of liquidated damages in the amount of \$1,500 (one thousand, five hundred dollars) per calendar day will be assessed in accordance with Section 12 of the Agreement.

It is understood and agreed that since time is of the essence, the Contractor will be responsible for liquidated damages to the Owner. Moreover, because the amount of damage and loss to the Owner which will result from the Contractor's failure to start and complete performance within the time specified in this Contract will be difficult or impractical to ascertain, if the work has not been started and completed in accordance with the provisions of the Contract by the date specified, the Contractor shall pay to the Owner the sum agreed upon and designated for each and every calendar day that he is in default in starting and/or completing the work. Such moneys shall be paid as damages, not as a penalty, to liquidate the resulting losses and expenses of the Owner.

The Owner may recover such liquidated damages by deducting the amount thereof from any moneys due or that shall become due the Contractor, and if such moneys are insufficient to cover the liquidated damages, the Contractor or its surety shall pay said amount due to the Owner.

The assessment of liquidated damages, or any portion thereof, may be waived by the Owner if the Contractor submits evidence satisfactory to the Owner, that the work has not been completed by the time herein appointed because of delays caused solely by conditions beyond the control of the Contractor and/or that the Owner has not suffered any damage as a result of said delay.

The Contractor shall be fully responsible and shall indemnify to the fullest extent of the law the Owner for any fines, levies, penalties or charges incurred in prosecuting any portion of the work set forth herein.

- H. If the Contractor fails to comply with the construction schedule as set forth in the Contractor's bid or other progress schedules required by the Project Documents, the Owner may give the Contractor a notice specifying the time limits and performance standards that the Contractor is failing to meet, whereupon (1) the Contractor shall, if the notice requires, discontinue all or any portion of the Work (which discontinuance shall neither terminate the Contract nor give the Contractor any claim for an increase in the Contract Price, damages, or an extension of any completion deadlines); or (2) at Contractor's sole cost, increase the work force, equipment and plant, or any of them, employed on the whole or any part of the Work, to the extent required by such notice, and employ said increased workforce from day to day until the completion of the Work or such part thereof, or until the failure regarding the rate of progress, in the opinion of the Owner, shall have been sufficiently corrected.

If, the Contractor fails to comply with the construction schedule, and whether or not the Owner shall have given the Contractor a notice described above, the Owner may, but shall not be required to, give the Contractor notice of such failure and five (5) days to cure the

same. Unless the Contractor shall, within that five days, take all necessary steps to do so (including, if the Owner requires, increasing its forces, equipment and plant) and continue to do so until in the opinion of the Owner the failure is corrected, the Owner may, at the Contractor's expense and without terminating this Contract, take exclusive or joint possession of all or a portion of the Site and employ and direct the labors of existing or such additional forces, equipment and plant as may in the Owner's opinion be necessary to insure the completion of the Work or such part thereof within the time specified in the Contract Documents. The Owner may exercise its rights under this Section at any time and from time to time without waiving any of its rights under this Contract, at law or in equity, including, without limitation, its right to deem this Contract terminated or to order the Contractor to discontinue the Work at any time thereafter. The Contractor shall continue to perform the remaining Work under the Contract even if the Owner elects to have another contractor perform a portion of the Work under this Section.

#### 1.05 CONTRACTOR'S LIABILITY INSURANCE

- A.** The Contractor shall purchase and maintain such insurance as will protect him from the Contractor's operations under the Contract, whether such operations be by himself or herself or by any Sub-Contractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.
- B.** Insurance similar to that required of the Contractor shall be provided by or on behalf of all Sub-Contractors to cover their operations performed under the Contract Documents. The Contractor shall be held responsible for compliance with and enforcement of the insurance requirements and for any modifications of these insurance requirements as they apply to Sub-Contractors. The Contractor shall not permit any Sub-Contractor commence work until such Sub-Contractor has furnished evidence that insurance has been procured and certificates of insurance have been obtained by the Contractor providing that, in the event of restrictions in or cancellation of Sub-Contractor policies, thirty (30) days advance written notice be given to Contractor by U.S. first class mail.
- C.** The Contractor shall purchase and maintain during the life of this Contract:
1. Insurance sufficient to discharge its obligations under all applicable workers' or workmen's compensation laws of the territories and States of the United States.
  2. Employee's liability insurance with minimum limit per accident or disease of \$1,000,000.
  3. Statutory disability and other employee benefit insurance.
- D.** The Contractor shall purchase and maintain during the term of this Contract, at a minimum, comprehensive liability insurance including a comprehensive broad form endorsement and covering the full scope of this contract with limits not less than \$3,000,000 per occurrence and \$3,000,000 aggregate or personal or bodily injuries, and \$3,000,000 per occurrence and aggregate for property damage. A combined single limit per occurrence of \$3,000,000 is acceptable. All policies issued shall include permission for partial or total occupancy of the premises by the Owner within the scope of this Contract. Such insurance shall include at least the following:
1. Comprehensive general liability insurance, including all products, premises-operations, and completed operations liability, independent Contractors, additional interests of employees, incidental medical malpractice liability, including notice of occurrence and knowledge of occurrence endorsements satisfactory to the Owner.

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2. Comprehensive business automobile liability insurance covering use of any motor vehicle to be used in conjunction with this contract with a minimum coverage of \$1,000,000. A compulsory Massachusetts automobile policy is acceptable for vehicles registered in Massachusetts only.
3. Coverage for loading and unloading of any motor vehicle must be covered by endorsement to the comprehensive (or compulsory) automobile liability policy.
4. Blanket contractual liability insurance covering all liabilities assumed under the Contract Documents, including, but not limited to, Contractor's obligations under Article 5 of the General Conditions.
5. Personal injury coverage endorsement (coverage's A, B, and C), with no exclusions for liability assumed contractually or injury sustained by employees of Contractor.
6. Excess Liability coverage in an amount which is to be no less \$3,000,000.
7. Broad form coverage for damage to property of the Owner, as well as other third parties, while in the care, custody, or control of Contractor.
8. Insurance sufficient to discharge its obligations under all applicable workers' or workmen's compensation laws of the territories and states of the United States., the United States Longshoremen's & Harbor Workers Act, the Jones Act and Admiralty or Maritime Law. If any operations performed within the scope of this Contract by Contractor or its Sub-Contractors require the use of any aircraft or watercraft (owned or un-owned), Contractor shall maintain liability insurance satisfactory to, and naming as an additional insured, the Owner.
9. Insurance similar to that required of the Contractor shall be provided by or on behalf of all Sub-Contractors to cover their operations performed under the Contract Documents. The Contractor shall be held responsible for compliance with and enforcement of the insurance requirements and for any modifications of these insurance requirements as they apply to Sub-Contractors. The Contractor shall not permit any Sub-Contractor commence work until such time as the Sub-Contractor has furnished evidence that insurance has been procured and certificates of insurance have been obtained by the Contractor, forwarded to the Owner, and provide that, in the event of restrictions in or cancellation of Sub-Contractor policies, thirty (30) days advance written notice be given to Contractor and Owner by registered mail.
10. Insurance certificates acceptable to the Owner evidencing the above coverages are to be furnished to the Owner prior to execution of any Contract. Any and all such certificates and all insurance policies required by these Insurance Requirements shall contain provisions requiring at least 30 (thirty) days prior written notice to the Owner of any cancellations of, or material change in the policies. Certificates shall indicate effective dates of expiration of policies and shall refer to the corresponding subparagraphs listed above. An additional certificate evidencing continuation of all insurance coverages is required to remain in force after final payment, and neither final payment nor any remaining retainage under this contract shall be due until such certificate has been submitted to the Owner.
11. All insurance policies provided pursuant to the foregoing provisions of these Insurance Requirements shall be in the form and written by companies satisfactory to the Owner, and the Owner shall be named as an additional insured. All such

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policies shall contain provisions or endorsements necessary to assure coverage of claims by one insured against another. All required insurance policies are to be endorsed to state that the Contractor's policies shall be primary to all other insurance available to the Owner for liability arising out or resulting from the Contractor's operations under the Contract, whether such operations be by Contractor or by a Sub-Contractor or by anyone directly to indirectly employed by any of them or by anyone for whose acts any of them may be liable.

12. The purchase of insurance to satisfy the above requirements, or the furnishing of certificates evidencing same, shall not be a satisfaction of Contractor's liability under this Contract or in any way modify Contractor's indemnification of the Owner.
13. Without limitation of any other provisions of the Contract Documents, if (a) the Contractor's agreement herein to insure or to name as an insured the Owner with respect to contractual liability assumed by the Contractor under the terms of the Contract Documents or otherwise, or (b) any contract of insurance between the Contractor or any Sub-Contractor and its or their insurance company, shall to the extent be or be determined to be void and unenforceable, it is the intent of the Owner that such circumstances shall not otherwise affect the validity or enforceability or the Contractor's agreements and obligations under the Contract documents nor the validity or enforceability of such contract or insurance, each of which shall be enforced to the fullest extent permitted by law. Insurance sufficient to discharge its obligations under all applicable workers' or workmen's compensation laws of the territories and states of the United States, the United States Longshoremen's & Harbor Workers Act, the Jones Act and Admiralty or Maritime Law.
14. Without limitation of any other provisions of the Contract Documents, if (a) the Contractor's agreement herein to insure or to name as an insured the Owner with respect to contractual liability assumed by the Contractor under the terms of the Contract Documents or otherwise, or (b) any contract of insurance between the Contractor or any Sub-Contractor and its or their insurance company, shall to the extent be or be determined to be void and unenforceable, it is the intention of the parties that such circumstances shall not otherwise affect the validity or enforceability or the Contractor's agreements and obligations under the Contract Documents nor the validity or enforceability of such contract or insurance, each of which shall be enforced to the fullest extent permitted by law.
15. The Contractor shall purchase and maintain during the term of this Contract property insurance in the amount of the Contract value plus any subsequent revisions of the Contract. Such insurance shall name the Owner as an additional insured and shall insure against all perils normally covered in an "all risk" form, including flood and earthquake. This insurance shall include coverage of owned and rented tools, equipment, temporary facilities and other items, whether or not the capital value of which has been included in the contract amount, and shall also include coverage for portions of the work stored off the site or in transit which are included in any application for payment. Deductibles in the Contractor's coverage shall be the responsibility of the Contractor. Certificates or binders of insurance indicating that the Contractor has obtained the aforesaid property insurance coverage shall be filed with the Owner prior to execution of the Contract. If binders are filed, certificates shall then be filed for the coverage prior to the expiration date of the binder. The policy shall be written with an insurance

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company with a Best's insurance rating classification of "A" or better. Such certificates and binders shall be in form and substance reasonably acceptable to the Owner and shall contain a provision that such property insurance coverage shall not be materially changed or canceled until at least 30 (thirty) days prior to written notice has been given to the Owner.

16. In the event that the Contractor or the Contractor's insurance company fails to provide the Owner with documentation sufficient in the Owner's sole discretion to remedy all damage and loss to any property referred to in the above section.

#### 1.06 SURETY BONDS

- A. The Contractor shall obtain a payment and performance bond for fifty percent of the bid value naming the Owner and project and present the bond to the Owner prior to the commencement of any work on the project. The surety shall be "AAA" rated admitted in the Commonwealth of Massachusetts with duly granted authority to produce bonds and shall be approved by the Project Engineer as an acceptable security for the project. Any modifications, additions or deletions to the Contractor's bid during the contract performance shall be the Contractor's expressed responsibility to notify the surety where the bond(s) are procured. A failure to notify the surety of a material addition, deletion or modification to the project shall be at the Contractor's peril and shall be deemed as accepted by the Contractor's surety as ratified. The Contractor hereby warrants to the Owner that the Contractor's surety has had ample opportunity to review the plans, specifications and agreements and by issuing a payment and performance bond ratifies and agrees to be bound to the conditions and terms set forth herein and the Contractor's surety agrees to the same.
- B. The Contractor and Owner agree that any and all costs for procuring, securing or otherwise obtaining any of the aforementioned insurance and/or bonds is the expressed responsibility of the Contractor and has been included in the Contractor's bid to the Owner.

#### 1.07 PRE-BID MEETING

- A. A non-mandatory, but highly recommended, site walk through will be performed by the Engineer on **October 8 at 2:00 P.M.** at the project site, which will overview and acquaint the Contractor with the work set forth hereunder. The Contractor is to fully apprise himself or herself of the site conditions, access to the project site and price their bid in order to take any and all constraints into account such that the Contractor is prepared to provide whatever means and at whatever costs necessary to ensure that measures are in place to ensure that the project is executed according to the plans and specification set forth herein. Questions regarding the site or to coordinate any access that the Contractor wants to undertake prior to the submission of a bid may be addressed to the Project Engineer. As such the Contractor shall examine the existing conditions and thoroughly acquaint himself or herself with the obstacles and advantages of performing the work. The Contractor shall also study the drawings and compare the same with the information gathered during his examination of the site, as no extra compensation will be authorized for work resulting from the Contractor's unfamiliarity with the site and/or the drawings, or the conditions peculiar to this job. If the Contractor chooses not to attend this meeting, he shall waive the right to raise their non-attendance as a defense or claim for of any cause whatsoever for any information provided at this meeting.

**1.08 SUBMITTALS**

- A. Shop drawings and brochures shall be submitted in accordance with the requirements of the General Conditions. Submittals are required for the items whether named or not. Additional submittals may be required by the Engineer which the Contractor will comply with at no additional cost(s) to be charged to the Owner(s).

**1.09 PROJECT SCHEDULE**

- A. A progress schedule will be required for this project and is to be forwarded in writing to the Project Engineer five (5) days after the Notice to Proceed prior to the start of any work. No work may begin under the contract until the progress schedule, has been approved by the Owner and the Project Engineer. Failure to submit a project schedule shall be adequate grounds for the Owner to suspend any and all Contractor operations at no cost or liability to the Owner whatsoever.
- B. Time required for review and approval of these items shall not constitute a basis for time extension. Full compensation for supplying the "Progress Schedule" and all required updates shall be considered as included in the contract prices paid for the various bid items and no separate payment will be made.

**1.10 DIFFERING SITE CONDITIONS (G.L. c.30, §39N)**

- A. If, during the progress of the work, the Contractor or the Owner discovers that the actual subsurface or latent physical conditions encountered at the site differ substantially or materially from those shown on the plans or indicated in the Contract Documents either the Contractor or the Owner may request an equitable adjustment in the Contract price of the Contract applying to work affected by the differing site conditions. A request for such an adjustment shall be in writing and shall be delivered by the party making such claim to the other party as soon as possible after such conditions are discovered. Upon receipt of such a claim from a Contractor, or upon its own initiative, the Owner shall make an investigation of such physical conditions, and, if they differ substantially or materially from those shown on the plans or indicated in the Contract Documents or from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the plans and Contract Documents and are of such a nature as to cause an increase or decrease in the cost of performance of the work or a change in the construction methods required for the performance of the work which results in an increase or decrease in the cost of the work, the Owner shall make an equitable adjustment in the Contract Price and the Contract shall be modified in writing accordingly. The initial decision of the Project Engineer with respect to any such request is final and binding on the parties, but subject to the claim resolution procedures set forth in Section 01100 (Measurement and Payment) of the Contract Documents provided that the notice of claim as required by said Section 01100 is made within 14 days after receiving the final decision of the Project Engineer.
- B. No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in A. above; provided, however, the time prescribed therefore may be extended by the Owner.
- C. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

### 1.11 CLEANING AND EQUIPMENT

- A. During the progress of the work, the site shall be cleaned daily of all rubbish, packing materials or other debris. No debris capable of being windblown or washed away by rainfall, or tidal events shall be left unsecured on the site overnight.
- B. All roadways that have been used as access routes shall be swept on a regular basis, and kept in reasonably clean condition. "Reasonably clean" shall be defined as a condition acceptable to the local Department of Public Safety, and/or Department of Public Works having jurisdiction over the specific roadways. All equipment shall be located as authorized by the Project Engineer to provide that at the end of work day or shift the site or roadways are left in a passable condition and all equipment is safe and secure.

### 1.12 CONTRACT DOCUMENTS IN THE FIELD

- A. The Contractor must keep a copy of the Contract Documents including but not limited to plans, specifications, schedule, materials list, daily reports, materials safety data sheets, and safety reports at the site of the work at all times while work is being performed and said copy is to be available to those in charge of the work, including Owner and Project Engineer.

### 1.13 CONSTRUCTION SEQUENCE

- A. For the protection of life and property any and all construction operations shall be phased such that the site is safe and secure. The Contractor shall insure that no-equipment or materials are left unattended.
- B. The Contractor is responsible for the requisition and logistics of onsite local law enforcement detail where required by state or local law. Contractor's responsibilities include all Contractor and Sub-Contractor sites associated with the project and are inclusive of any and all pricing set forth herein.

### 1.14 UTILITIES

- A. Prior to commencing work, the Contractor is responsible for obtaining the location, size and depth of all existing underground or underwater utilities and structures. Dig Safe Systems, Inc. (DIG SAFE) may assist in this task, but should not be considered comprehensive.
- B. The Contractor shall assume that there are existing utility lines in the vicinity of the work, whether they appear on the drawings or not and should be independently verified by the Contractor using commercially reasonable methods that are normal and customary in the business of marine construction work.
- C. Existing utilities may not be known by the Owner or Project Engineer. The Contractor assumes any and all risks associated with the damage, disruption or repair of any utilities that are disturbed by any action(s) of the Contractor in the prosecution of the work set forth herein. As such, the Contractor will assure the Owner that any and all repairs to utilities that are damages by Contractor's operations will be made expeditiously, in a professional, workman like manner and must be satisfactory to both the Owner and Project Engineer at no additional cost to the Owner.
- D. It is not the intent of the plans to show the exact location of existing or relocated utilities, and the Owner assumes no responsibility therefore. Whenever any such utilities are indicated thereon, the Contractor shall be responsible for verifying their actual location and

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depth in the field. The Contractor shall notify DIG SAFE (1-800-272-4480) prior to excavation.

- E. The Contractor has reviewed the project site and areas surrounding the project and shall take full responsibility for existing utilities or apparatuses which may in any way impede, hamper or delay the Contractor's performance of the work set forth herein. The Owner shall bear no responsibility for the removal of or temporary relocation of any existing utilities or apparatuses.
- F. Where excavations are performed in the vicinity of underground utility mains and/or services the Contractor shall, as necessary, perform initial exploratory excavations to determine their exact depth and location. Extreme care shall be exercised to avoid damage, and it will be the Contractor's responsibility to have repairs made to existing facilities at his/her expense in the event of damage.
- G. Construction work for each site shall be coordinated with any work by other Contractors and utility entities to avoid conflicts. It is anticipated that any necessary work by others will be identified and performed prior to operations by the Contractor.
- H. Schedule constraints will be discussed at the pre-construction conference and the Contractor shall consider such adjustments in contract scheduling as necessary.
- I. Full compensation for complying with the above provisions shall be considered as included in the Contract Price for the various bid items and no separate payment will be made.

**1.15 BARRICADES, GUARD LIGHTS AND TRAFFIC**

- A. Barricades, signs, fences, and similar safety and warning devices shall be provided as required in order to insure the protection of the public at large as well as employees of the Contractor and all Sub-Contractor employees.
- B. Barricades, signs, fences, and similar safety and warning devices shall be provided as required in order to insure the protection of the public as well as employees.
- C. All signs and other warning devices (including construction and warning signs placed beyond the limits of work), shall be provided by the Contractor, and shall remain his/her property after the completion of the contract. All flaggers shall be provided by the Contractor at his/her expense.
- D. Barricades, Guard Lights and Traffic Control shall include furnishing all labor (including flaggers and detours, when necessary), materials and equipment necessary to provide for the convenience and safety of the public and to facilitate the performance of the contract work as shown on the plans and specified herein. Full compensation for complying with the above provisions shall be considered as included in the contract price for the various bid items and no separate payment will be made.
- E. All floating equipment shall adhere to all applicable maritime regulations including but not limited to lighting, safety equipment, etc.

**1.16 PROTECTION OF WORK AND PROPERTY**

- A. The Contractor shall be responsible for the preservation of all public and private property or their prosecution of the work and shall carefully protect the property from disturbance or damage.
- B. The Contractor shall be responsible for all damage or injury to public or private property resulting from any act, omission, neglect, or misconduct in, or either the Contractor's or its

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Subcontractors' manner or method of executing the work, or in consequence of the non-execution thereof. Furthermore, the Contractor shall be responsible for all such damage due to defective materials or acts. The Contractor shall restore, at its own expense such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring as directed by the Project Engineer.

- C. All work is to be carefully protected so that no injury will come to it from water, frost, accident or other cause, and any injury, which will come to the work, is to be repaired by the Contractor at his expense. The Contractor shall protect the Owner' property, equipment and fixtures from injury, or loss. The Contractor shall protect the Owner' property from injury or loss arising in connection with this contract and he shall make good any damage, injury, or loss. The Contractor shall also adequately protect adjacent property as provided by statute and the contract documents.
- D. The Contractor shall take all necessary precautions for the safety of employees on the work. The Contractor shall comply with all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the work is being performed. The Contractor shall erect, properly maintain, at all times, as required by the conditions and progress of the work, all necessary fences, barriers, warning signs and lights that may be necessary to adequately protect the general public.
- E. The Contractor shall provide temporary containment for all fuel tanks, pumps and appurtenances as a precaution against accidental spills or leaks. The Contractor shall maintain no greater than a two (2) day supply of fuel to any piece of equipment located on the site. The containment structures shall be capable of preventing releases of any fuel or other hazardous liquids to the environment (shall have volumes greater than that of the fuel tanks to be contained and shall be covered if necessary, to eliminate the intrusion of rain water. In accordance with State or local laws and permit requirements, the Contractor shall furnish and maintain all other necessary containment materials to insure zero release of hazardous materials to the environment.

#### 1.17 RESTORATION

- A. The Contractor shall be solely responsible for performing any necessary acts and providing any materials required to restore areas disturbed during construction to their pre-construction condition. During the Pre-Bid time period prior to submitting a Bid, the Contractor shall note the condition of all areas within the project and include costs in their Bid for full and complete restoration.

#### 1.18 PERMITS, FEES AND BONDS

- A. The Contractor shall obtain and comply with all required permits, pay all fees and provide all bonds necessary to complete the work as specified. The Contractor shall be advised that permit fees required by the City shall be waived for this project. The Contractor shall be solely responsible for performing any necessary acts and providing any materials required in order to comply with any and all terms and conditions set forth in any permits and licenses.

#### 1.19 GENERAL CLAUSES AND CONDITIONS

- A. Suspension of work: The Owner may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Project Engineer determines appropriate for the convenience of the Owner.

### 1.20 SUSPENSION OF WORK

- A. The Owners may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Project Engineer determines appropriate for the convenience of the Owner.
- B. If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Owner in the administration of this project, or by the Owners' failure to act within the time specified in this contract (or within a commercially reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this project (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the partial fault or partial negligence of the Contractor. (G.L. c.30, §39O).
- C. The Engineer reserves the right to suspend all or any portion of the work for any reasons during the execution of the work. If the work is suspended for a period of time and the Contractor believes the period is unreasonable and additional compensation and/or an adjustment in Contract time is due, the Contractor shall submit to the Engineer in writing a request for adjustment within seven (7) calendar days of receipt of the notice to resume work. The request shall include the justification for the requested adjustment.
- D. Upon receipt, the Engineer will consider the Contractor's request. If the Engineer agrees that the cost and/or time required for the performance of the Contract has increased as a result of such suspension and was caused by conditions beyond the control of and not the fault of the Contractor, suppliers, subcontractors, the Engineer will make an equitable adjustment (excluding profit) and modify the Contract in writing accordingly. No Contract adjustment will be allowed unless the Contractor has submitted a request for adjustment within the time prescribed.
- E. The Owner may terminate for their convenience, performance of work under in whole or, from time to time, in part if the Owner determines that a termination is in the Owner's interest. The Owner shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date. After receipt of a Notice of Termination, and except as directed by the Owner or Project Engineer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this provision: stop work as specified in the notice; place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the Contract; terminate all subcontracts to the extent they relate to the work terminated; or, with approval or ratification to the extent required by the Project Engineer, settle all outstanding liabilities and terminate settlement bids arising from the termination of subcontracts (the approval or ratification will be final for purposes of this clause). The Owner shall be obligated to pay the Contractor for work in place and Contractor agrees that Owners' responsibility regarding the subject Contract shall be limited only to work in place and the Contractor waives any rights or claims against the Owner for consequential damages should this project be terminated by the Owner for its convenience.

### 1.21 STAND-BY AND IDLE EQUIPMENT TIME

- A. Equipment that is in operational condition and is standing by with the Engineer's approval will be paid for at 50 percent of the appropriate hourly rate as determined by the provisions

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set forth by the United States Army Corp of Engineers, Construction Equipment Ownership Schedule (EP 1110-1-8) less operating costs. Payment for such "stand-by" will be limited to not more than 8 hours in a 24-hour day or 40 hours in a normal work week.

- B.** No compensation will be allowed for equipment that is inoperable due to breakdown.
- C.** No payment will be allowed for equipment that is not operating because the work has been suspended in accordance with the specifications unless the suspension is for the convenience of the Town. No payment will be allowed for equipment that is not operating because the work has been suspended by the Contractor for the Contractor's own reasons.
- D.** The hourly rate of compensation for idle equipment will be the monthly rate times a factor of 0.50 divided by 176 hours per month, regardless of the duration of the delay or stand-by.
- E.** The time for which such compensation will be paid will be the actual normal working time during which such delay condition exists, but will in no case exceed 8 hours in any one day.
- F.** The days for which compensation will be paid will be the number of working days charged during the existence of such delay. No compensation will be made for days that are considered lost due to weather as determined by the Engineer.
- G.** Compensation will only be made for equipment physically located at the work site that would be used to prosecute the delayed work during the existence of such delay.

**1.22 SIGNIFICANT CHANGES IN SCOPE OF WORK**

- A.** The Engineer or Owner reserves the right to make, at any time during the work, such increases or decreases in quantities and such alteration in the work as necessary to satisfactorily complete the project. Such increases or decreases and alterations shall not invalidate the contract nor release the Surety, and the Contractor agrees to perform the work as altered.
- B.** If the increase on any item of work for which a unit price exists in the contract does not exceed the lesser of \$100,000.00 or five percent of the total contract price, then such increase shall be regarded as covered by the unit bid price for such items as contained in the original contract.
- C.** If the decrease on any item of work for which a unit price exists in the contract does not exceed 25 percent of the contract quantity, then such decrease shall be regarded as covered by the unit bid price for such item as contained in the original contract.
- D.** If the alteration or decrease in an item of work significantly changes the scope or the character of the work, then an adjustment may be made to the unit price. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, an adjustment will be made either for or against the Contractor in an amount as the Engineer may determine to be fair and equitable.
- E.** Eliminated Items:
  - 1. Should any items contained in the bid be found unnecessary for the proper completion of the work, the Engineer may, upon written order to the Contractor, eliminate such items from the contract, and such action shall in no way invalidate the Contract.

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2. If the Contractor is notified of the decrease or elimination of an item, reimbursement will be made for the reasonable cost of material incurred, in connection with such item or portions, prior to the date of such decrease or elimination made by order of the Engineer but in no case shall such compensation exceed the contract bid price for the item.
3. No claim shall be made by the Contractor for any loss of anticipated profits because of any alteration or variation between the approximate quantities and the quantities of work as done.

### 1.23 CONTRACTOR ABANDONMENT

- A. The Contractor may not remove any mobilized equipment that is material to this project at the Trap Dock Reconstruction without the expressed written consent of the Project Engineer.

## PART 2: PRODUCTS

### 2.01 GENERAL

- A. A statement indicating the source of each proposed import material shall be submitted by the Contractor. The statement shall indicate that the proposed import does not include any contamination or hazardous material and the results of analytical testing. If the source of import material is questionable or if the preliminary analytical test results indicate the presence of contamination or hazardous material, the Owner may require performance of additional analytical testing at no cost to the Owner prior to approval of proposed import materials.
- B. Any and all products, materials and workmanship shall be warranted by the Contractor for a period of not less than two (2) years from the date of completion of the project. Completion shall be deemed as acceptance by the Owner of the final payment application prepared by the Contractor.

### 2.02 APPROVAL OF MATERIALS

- A. As soon as practicable but not to exceed five (5) calendar days after award of the Contract and before any materials or equipment are purchased, the Contractor shall submit to the Project Engineer a complete list, in triplicate, of material and equipment to be incorporated in the work, together with the names and addresses of the manufacturer and their catalog numbers and trade names. Approval of materials will be based on manufacturer's published ratings. Materials that are incorporated into the project that have not been expressly approved by the Project Engineer will be subject to removal, replacement and or verification by the Project Engineer on behalf of the Owner and shall be solely at the Contractor's expense and peril.

### 2.03 SUBSTITUTIONS

- A. If a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Sections, the Contractor may furnish or utilize a substitute means, method, sequence, technique, or procedure of construction acceptable to the Owner, if the Contractor submits sufficient information to allow the Owner to determine that the substitute proposed is equivalent to that indicated or required by the Contract Sections, in quality, warranty, life-cycle costs, design cost, construction time, warranty, and efficiency considerations. Contractor may submit requests for substitution up to 35 days following

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Notice of Award after which time the Owner will consider substitutions in its sole discretion.

- B.** The Owner will respond in writing to the Contractor within ten (10) days indicating the time necessary to evaluate each proposed substitute. The Owner will be the sole judge of acceptability, and no substitute will be ordered, installed, or utilized without the Owner's prior written acceptance, which will be evidenced by either a change order or an approved shop drawing. The Owner may require the Contractor to furnish at the Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- C.** The Owner will record time required by the Owner and the Owner's consultants in evaluating substitutions proposed by the Contractor and in making changes in the Contract Sections occasioned thereby. Regardless of whether or not the Owner accepts a proposed substitute, the Contractor shall reimburse the Owner for the charges of the Owner and Owner's consultants for evaluating each proposed substitute.
- D.** Cost or time impacts to other items of Contract work, which are caused by any Contractor initiated request for substitution, whether anticipated or unforeseen, shall be the responsibility of the Contractor.

#### 2.04 TRADE NAMES

- A.** Whenever the Trade Name of a product, or the name of a Manufacturer appears in these Contract Documents or on the Plans, it shall be understood to specify the product so identified or its approved equal. The words "or equal" or "approved equal" shall mean equal in the opinion of and approved by the Project Engineer in writing. For convenience in designation, certain equipment or parts or materials may be designated under trade name or the name of a manufacturer or product and his catalogue information. The use of alternative equipment or a Part or material which is of equal quality and of the required characteristics for the purpose intended will be permitted, subject to the written approval of the Project Engineer, in accordance with the following requirements:
  - 1. The burden of proof as to the comparative quality and suitability of alternative equipment or Parts or materials shall be upon the Contractor and he shall furnish, at his own expense, all information necessary or related thereto as required by the Project Engineer. The Project Engineer shall be the sole judge as to the comparative quality and suitability of alternative equipment or Parts or materials and the decision of the Project Engineer shall be final.
  - 2. The above provisions shall not be construed as permitting the use of alternative equipment or Parts or materials for equipment or Parts or materials which are not designated under a Trade Name or the name of a manufacturer or producer and his catalogue information, and for which detail specifications are set forth.

\*\*\*END OF SECTION\*\*\*

**SECTION 01100**

**MEASUREMENT & PAYMENT**

**PART 1: GENERAL**

**1.01 RELATED DOCUMENTS**

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

**1.02 RESOLUTION OF CONSTRUCTION CLAIMS**

- A. The Owner and Contractor expressly agree to utilize informal conferences, non-binding mediation, and, if necessary, judicial litigation to resolve disputes on construction claims.
- B. "Claim" means a demand or assertion by one of the parties seeking, as a matter of right, adjustment, or interpretation of contract terms, payment of money, extension of times or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.
- C. For any claim subject to this section, the following requirements apply:
  - 1. Claims, including those alleging an error or omission by the Owner, shall be referred initially to the Project Engineer for decision. An initial decision by the Project Engineer shall be required as a condition precedent to mediation or litigation of all claims between the Contractor and Owner arising prior to the date final payment is due, unless 15 days have passed with the Project Engineer failing to respond within the time prescribed. The Project Engineer will not decide disputes between the Contractor and persons or entities other than the Owner
  - 2. The claim shall be in writing and include the documents necessary to substantiate the claim. Claims must be filed on or before the date of final payment but in no event shall be filed later than 14 days after the occurrence of the event giving rise to such claim or within 14 days after the claimant should reasonably have first recognized the condition giving rise to the claim, whichever is later. Nothing in this subsection is intended to extend the time limit or supersede notice requirements otherwise provided by contract for the filing of claims.
  - 3. For claims of less than \$50,000 (fifty thousand dollars)
    - a. The Project Engineer shall respond in writing to any written claim within twenty (20) days of receipt of the claim, or may request in writing within ten (10) days of receipt of the claim, any additional documentation or information supporting the claim or relating to defenses to the claim the other party may have against the claimant. These timeframes may be extended upon mutual agreement of the parties.
    - b. If additional documentation or information is thereafter required, it shall be requested and provided upon mutual agreement of the Owner and the

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Contractor.

- c. The Project Engineer's written response to the claim, as further documented, shall be submitted to the claimant within ten (10) days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information or requested documentation, whichever is greater.
  4. For claims of over fifty thousand dollars (\$50,000).
    - a. The Project Engineer shall respond in writing to all written claims within forty-five (45) days of receipt of the claim, or may request, in writing, within twenty (20) days of receipt of the claim, any additional documentation supporting the claim or relating to defenses to the claim the other party may have against the claimant.
    - b. If additional information is thereafter required, it shall be requested by the Project Engineer and provided upon mutual agreement of the Owner and the Contractor.
    - c. The Project Engineer's written response to the claim, as further documented, shall be submitted to the claimant within thirty (30) days after receipt of the further documentation or within a period of time no greater than that taken by the claimant in producing the additional information, whichever is greater.
  5. The decision of the Project Engineer is final and binding on the parties. After issuance of the decision, upon a demand by either the Contractor or the Owner, a meeting of the parties shall be scheduled to confer and attempt to reach a mutually satisfactory resolution to a claim.
  6. If following the conference the claim or any portion thereof remains in dispute, the claimant may file a demand for mediation, whereupon the parties shall stipulate to terms and conditions for mediation at the earliest practicable time.
  7. In the event that the parties are unable to resolve a claim by mediation, the claimant may proceed to file a complaint with a court of competent jurisdiction in Barnstable County seeking further redress of the claim.
  8. This section shall not apply to tort claims and nothing in this section is intended, nor shall be construed, to change any statutory time period for filing tort claims or actions specified by Massachusetts State Law or any applicable Federal Statute.
- B.** The Owner shall not fail to pay money as to any portion of a claim, which is undisputed except as otherwise provided in the Contract.
- 1.03 WORK COVERED BY CONTRACT PRICE:**
- A.** Items shall be paid for by the terms and conditions outlined under each Item's description for Measurement and Payment within the relevant Specification Section.
- 1.04 PAYMENT**
- B.** The unit or lump sum prices stated for all items in the bid schedule shall constitute full compensation for the item of work specified and shall include the cost of furnishing all supervision, materials, labor, tools, and equipment and all work, expenses and taxes incidental to and necessary to complete the work in accordance with the drawings and specifications.
- C.** Monthly partial payments will be based on quantities determined by the Project Engineer.

- D.** The quantities to be measured under the various items in the bid will be those quantities of work completed in accordance with the contract drawings and specifications. The methods of measurement will be as stated hereinafter for the individual items.

#### **1.05 APPLICATIONS FOR PAYMENT**

- A.** Each Application for Payment shall be consistent with previous applications and payments as certified by Engineer and paid for by Owner.
1. All applications for payment are to be accompanied by monthly submittals of updated Contractor's Construction Schedule, Schedule of Values and Submittals Schedule as required in Section 01320, "Construction Progress Documentation." Applications for payment that are not accompanied by the required materials will not be processed for payment.
  2. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B.** Payment Application Times: Monthly progress payments shall be submitted to the Project Engineer per schedule delivered by the Owner. The period covered by each Application for Payment is one month, ending on the last day of the month.
- C.** Payment Application Forms: Included with each application for payment shall be a completed Contract Acknowledgement to Accompany Partial Payment.
- D.** Informal Submittal: Unless otherwise directed by the Owner, the Contractor shall:
1. First make an informal submittal of each request for payment to the Project Engineer, inerasable pencil, with appropriate continuation sheet or sheets;
  2. Make this preliminary submittal to the Project Engineer each month at least 10 days prior to making a formal request for payment; and
  3. Revise the informal submittal of request for payment as stipulated by the Contractor and Project Engineer.
- E.** Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. The Project Engineer will return incomplete applications without action.
1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
  2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F.** Partial Payments: Partial payment shall be made monthly as the work progresses.
1. All partial invoices and payments shall be subject to correction in the final quantity invoice and payment. No monthly payment shall be required to be made when, in the judgment of the Owner, the Work is not proceeding in accordance with the provisions of the Contract Documents, or when in his/her judgment the total value of the Work performed since the last payment amounts to less than \$1,000.00.
  2. Making periodic progress payments, there shall be retained five percent (5%) of the estimated amount until final completion and acceptance of the Contract work. When the work is substantially complete, the Owner, if Contractor considers the amount retained to be in excess amount adequate for the protection of the Owner,

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at his discretion, may release to the Contractor all or a portion of such excess retainage. Furthermore, on completion and acceptance of each separate division of the Contract, on which the price is stated separately in the Contract, payment may, at the discretion of the Owner, be made therefore without retention. The Contractor must obtain and submit to the Owner, Consent of Surety, prior to reduction or partial release of retainage.

3. Acceptable materials shall be those materials that will become a part of the finished construction work. The basis for partial payments of lumps sum or other unit items will be determined by the Owner.
  4. No such estimate or payment shall be required to be made when, in judgment of the Owner, the Work is not proceeding in accordance with the provisions of the Contract, or when in the Owner's judgment, the total value of the Work done since the last estimate amounts to less than \$1,000.
  5. No such payment shall be considered to be an acceptance of any defective Work or improper materials. All progress estimates and payments shall be subject to correction/offset in the final estimate/pay application.
- G.** Transmittal: Submit three (3) signed and notarized original copies of each Application for Payment to the Project Engineer by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H.** Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
  2. Schedule of Values.
  3. Contractor's Construction Schedule (preliminary if not final).
  4. Schedule of unit prices.
  5. Submittals Schedule (preliminary if not final).
  6. List of Contractor's staff assignments.
  7. List of Contractor's principal consultants.
  8. Copies of building permits.
  9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  10. Initial progress report.
  11. Report of preconstruction conference.
  12. Certificates of insurance and insurance policies.
- I.** Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

**1.06 FINAL PAYMENT**

- A. As soon as practicable after Final Completion of the Work, Contractor shall submit to Owners three (3) copies of a final request for payment for the cost of the Work, which request will show deductions for prior payments and any other amounts to be retained.
- B. The amount determined due, less the amount retained, will be paid. This retained amount will not be due or payable until Thirty (30) days after the completion of the Work and the filing of Notice of Completion and Acceptance in the manner provided by law, and until after the Contractor has furnished the Owner a release of all claims by the Contractor or Subcontractors against the Owner arising by virtue of this Contract, except such claims in definite amounts as the Contractor may specifically exempt from the operation of the release and the furnishing of any guaranty.
- C. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
  - 1. Evidence of completion of Project closeout requirements.
  - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  - 3. Updated final statement, accounting for final changes to the Contract Sum.
  - 4. Contractor's Affidavit of Payment of Debts and Claims.
  - 5. Contractor's Affidavit of Release of Liens.
  - 6. Consent of Surety to Final Payment.
  - 7. Evidence that claims have been settled.
  - 8. Final meter readings for utilities, unmeasured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  - 9. Final, liquidated damages settlement statement.

**1.07 WORK NOT PAID FOR SEPARATELY**

- A. Bonds: Payment for bonds as required by the Contract are to be included in the various items of work in the bid, and no separate payment will be made by the Owner for any bonds.

\*\*\*END OF SECTION\*\*

**ASBESTOS-CONTAINING MATERIALS, LEAD-CONTAINING PAINTS  
AND HAZARDOUS BUILDING MATERIALS SURVEY, TRAP DOCK  
BUILDING, 613 STAGE HARBOR ROAD, CHATHAM, MASSACHUSETTS**



*PREPARED FOR:*

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*PREPARED BY:*

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WAKEFIELD, MASSACHUSETTS 01880**

**OCTOBER 7, 2019**

**AXIOM JOB NUMBER  
01136.888**

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**CERTIFICATION OF RESULTS**

This report has been prepared for the exclusive use of Pomroy Associates. Photocopying of this document by parties other than those designated by the Client or use of this document for purposes other than it is intended, is strictly prohibited.

Respectfully submitted this 7<sup>th</sup> Day of October 2019

Prepared by:



Edward K. Kearney, CIH  
Project Manager/Licensed Inspector

**For Information Only**

## **1.0 PURPOSE AND SCOPE OF WORK**

Axiom Partners, Inc. (AXIOM) was retained by Pomroy Associates LLC to conduct an asbestos-containing materials, lead-based paints and hazardous building materials survey of the Trap Dock Building located at 613 Stage Harbor Road, Chatham, Massachusetts. The purpose of this investigation was to identify accessible Asbestos-Containing Materials (ACMs), Lead-Containing Paints (LCP) and hazardous building materials (HBMs) prior to building demolition.

## **2.0 SITE DESCRIPTION**

The Trap Dock Building is a two-story garage style building (wood-framed structure) approximately 2,100 square feet in size. The small building is located on the pier at Stage Harbor and has a pitched asphalt roof and a concrete slab foundation. Interior furnishings include wood walls and ceilings, linoleum sheeting, gypsum wallboard and double-hung wood windows.

## **3.0 INSPECTION PERSONNEL, METHODS AND LABORATORY**

### **3.1 Inspection Personnel and Process**

#### *3.1.1 Inspection Personnel*

The investigative survey was conducted on September 24, 2019 by experienced and Massachusetts Department of Labor Standards (DLS) licensed Asbestos Inspectors Edward Kearney (Massachusetts Asbestos Inspector License Number 050217).

#### *3.1.2 Inspection Process*

The inspection for ACMs, LCPs and HBMs was conducted in a systematic manner using AXIOM's standard safety procedures and inspection protocols including:

1. A visual inspection of the building's interior and exterior to locate quantify and assess the condition of materials suspected to contain asbestos and lead.
2. Collection and analysis of materials as described herein to determine their composition.
3. Review of previous sampling report and laboratory analysis. No reports were available.

### **3.2 Asbestos-Containing Materials (ACM) Investigation**

#### *3.2.1 Methodology*

The inspection for suspect ACMs included:

1. Collection of representative bulk samples of each homogeneous area or application of suspect material in sufficient numbers to comply with EPA/AHERA minimum criteria (see Chart A below).
2. To prevent release of any airborne asbestos, samples of suspect materials were collected by first carefully wetting the suspect materials and then removing a small full-thickness sample and placing it in a sealed plastic bag labeled with a unique sample identification number.

**ASBESTOS-CONTAINING MATERIALS, LEAD-CONTAINING PAINTS  
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613 STAGE HARBOR ROAD, CHATHAM, MASSACHUSETTS  
*Axiom Partners, Inc.***

3. Chain-of-custody documentation was used to ensure sample integrity.
4. Analysis of the bulk samples by an accredited laboratory using the EPA approved Polarized Light Microscopy (PLM).
5. A review of the inspection findings and lab results to ensure proper and consistent identification and characterization of all assumed and confirmed ACMs.

**Chart A**

**Minimum Asbestos Bulk Sampling Criteria**

Type of Suspect Material <sup>1</sup>	Minimum Sampling Criteria
Surfacing	EPA/AHERA mandated statistically random criteria (Min. of 3 samples; Max. of 7 samples)
Miscellaneous	Minimum of 2 samples of each homogeneous application (unless otherwise noted)
Thermal System Insulations	Three random samples of each homogeneous material

**3.2.2 Definition of Key Inspection Terms**

Given the specific purposes and objectives of this inspection, the following definitions were used for the terms: Suspect Materials, Non-Suspect Materials, Homogeneous Applications or Areas, Inaccessible Building Areas, and Confirmed ACMs:

1. Suspect Materials: installed building materials that either was pre-formed (i.e., manufactured off-site) or were prepared and installed on-site. All building materials are considered a suspect material except as noted below.
2. Non-Suspect Materials: For the purposes of this inspection, the following materials were considered non-suspect and were not assessed or sampled if observed:
  - Plastic
  - Glass
  - Wood or Wood Composite Materials
  - Brick, Granite, Marble, or Other Stonework
  - Pink or Yellow Fiberglass Insulation on Pipes or Other Mechanical Components
  - Clay or Ceramic Tiles
  - Rubber or Synthetic Foam
  - Paint (unless textured)
  - Concrete or Mortar (except Gypcrete)
  - Carpeting, Curtains, Wallpaper, and Other Paper/Natural Fiber, Fabric, or Synthetics
3. Homogeneous Applications or Areas: are suspect materials which serve the same function or purpose (e.g., floor or ceiling tiles) have similar color and texture and were likely installed at or near the same time. Note that the homogeneity of certain materials such as wall and ceiling plaster at times cannot be readily determined.
4. Inaccessible Building Areas: building areas, systems, structural components, or surfaces which could not be observed because it was unsafe or impractical to disassemble or remove systems or coverings or because a human being cannot physically enter or observe

<sup>1</sup> Per homogeneous material or area

the area or components. These areas include some of the spaces behind hard walls and ceilings, raised flooring areas, buried portions of building foundations, buried pipes, pipe chases, underground electrical vaults, manholes and inside any type of enclosed or sealed storage tanks or vessels, boilers and above-ground storage tanks.

5. Confirmed ACMs: suspect materials where at least one of the bulk samples contains an asbestos concentration greater than 1%. According to the EPA/AHERA criteria, if all bulk samples of a homogeneous area of material are found to contain less than 1% asbestos, the material may be classified as a non-asbestos material. However, if these materials are disturbed through renovation or demolition, they are considered an asbestos waste material.

### **3.3 Asbestos Laboratory Services**

#### *3.3.1 PLM Bulk Sample Analysis*

Bulk samples collected during the inspection were submitted to ProScience Analytical Laboratory, Inc. (ProScience) located in Woburn, MA for analysis. ProScience is licensed by the Massachusetts DLWD for asbestos bulk sample analysis and is accredited for asbestos bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). Bulk samples were analyzed for asbestos content using EPA Method 600/7-93/116.

The entire inventory of collected samples may not have required analysis. Initially, one sample per material was analyzed. If the first sample was found to contain asbestos, the remaining samples were not analyzed (*Positive Stop* protocol). If the first sample was determined not to contain asbestos, however, the remaining samples were analyzed until asbestos was detected or until the entire sample set was analyzed. The laboratory analysis results are included in Appendix A.

### **3.4 Lead Containing Paints (LCPs) Investigation**

Representative testing of painted surfaces for the presence of lead was performed in the buildings as part of AXIOM's scope of work. Detailed survey data is presented in Appendix B.

#### *3.4.1 Introduction*

Historically, lead was added to paint because its color stability properties made it a desirable pigment and because it enhances durability. Lead-containing paint (LCP) becomes harmful when ingested or inhaled as dust or fumes. Once lead pigment was proven to be a health hazard, it was officially banned in 1978 from paint applied in residences. In an occupational setting, if lead-based painted surfaces are to be impacted by renovation or demolition activities, contractor personnel exposure (per OSHA compliance) and waste disposal (per EPA compliance) issues must be addressed and factored into the cost of the project.

#### *3.4.2 Testing Methodology*

During this investigation, AXIOM collected paint chip samples to determine lead content. The samples were collected using hand tools and were immediately placed in leak tight containers which were labeled with a unique sample number. A chain-of-custody form was used to ensure sample integrity.

The bulk paint chip samples were hand delivered to ProScience Analytical Services, Inc. (ProScience) located in Woburn, MA. ProScience is fully accredited for lead bulk sample analysis under the Environmental Lead Proficiency Analytical Testing (ELPAT) Program administered by the American Industrial Hygiene Association (AIHA). The bulk paint chip samples were analyzed for lead content using Atomic Absorption Spectrophotometry (AAS) under EPA Method SW846-7420/3051.

### **3.5 Polychlorinated Biphenyls (PCBs) Investigation**

AXIOM conducted an inspection of the buildings to identify suspect PCB-containing fluorescent light fixture ballasts and PCB-containing electrical transformers. The survey was conducted in a systematic manner that included:

1. Performing a detailed walk-through to inspect a representative number of light fixtures and categorize the various types of accessible fluorescent light fixtures.
2. Preparing an inventory of electrical light ballasts known or suspected to contain PCBs. Nameplate data was recorded if it was present and legible.

### **3.6 Mercury Light Tubes and Thermostats Investigation**

An inspection was conducted throughout the building to identify suspect Mercury-containing equipment and materials as follows:

1. Performing a walkthrough and preparing an inventory of fluorescent light bulbs that contain Mercury vapor in conjunction with the light ballast inspection described in Section 3.5.
2. Performing a walkthrough to identify and inventory thermostats, switches, actuators and other equipment that contain liquid Mercury.

### **3.7 Chlorofluorocarbons (CFCs) Investigation & Miscellaneous Materials**

An inspection was conducted throughout the building to identify suspect chlorofluorocarbons (CFCs) associated with refrigeration and air conditioning equipment. AXIOM also inspected miscellaneous materials in the building in the form of oil, paint, solvent, cleaner and lubricant containers throughout the building.

AXIOM performed a walkthrough of the building and prepared an equipment inventory including an estimate of CFCs and miscellaneous materials. For CFCs, nameplate data was recorded if it was present and legible. Assumptions were made if the unit was inaccessible or if the nameplate was not present or illegible.

## **4.0 FINDINGS AND RECOMMENDATIONS**

### **4.1 Asbestos-Containing Materials**

#### *4.1.1 Asbestos-Containing Materials (ACMs)*

**ASBESTOS-CONTAINING MATERIALS, LEAD-CONTAINING PAINTS  
AND HAZARDOUS BUILDING MATERIALS SURVEY  
613 STAGE HARBOR ROAD, CHATHAM, MASSACHUSETTS  
Axiom Partners, Inc.**

**TABLE 1**

Materials **confirmed** to contain asbestos at the subject building are as follows:

Material	Location(s)	Estimated Quantity <sup>2</sup>	Friability
Exterior Tar Paper	Behind Wood Shingles	~3,000 SF	Non-Friable
Interior Joint Compound	Second Floor Walls in Offices	~300 SF	Non-Friable
Pipe Putty	Exterior/Interior Gas Pipes	~75 LF	Non-Friable

4.1.2 *Non-Asbestos-Containing Materials*

**Table 2**

The following materials are **non-ACMs** based on bulk sample analysis:

Material	Location(s)
Black Insulation Paper on Fiberglass Batting	Throughout Building
Wallboard	Throughout Building
Roof Shingles	Throughout Roof
Black Paper underlayment under Roof Shingles	Throughout Roof
Linoleum Ceiling & Wall Sheeting	Throughout Roof
Gas Pipe Putty	Exterior of Building
Window Glazing Materials	Second Floor Offices

**4.2 Lead-Containing Paints (LCPs)**

Testing performed on various painted components revealed that some of the coatings contain lead in detectable quantities. A complete listing of the testing results can be found in Appendix B, however, the paint with the highest measurable lead level is as follows.

<u>Location/Component/Color</u>	Result (% weight)
Exterior Wood Trim, Grey Paint	3.65

The HUD<sup>3</sup> lead paint standard classifies lead-containing paint (LCP) as paint having >0.5 percent weight by paint chip analysis (AA). However, OSHA defines LCP as any paint containing detectable amounts of lead.

<sup>2</sup> SF = Square Foot; LF = Linear Foot; TBD = To Be Determined

**ASBESTOS-CONTAINING MATERIALS, LEAD-CONTAINING PAINTS  
AND HAZARDOUS BUILDING MATERIALS SURVEY  
613 STAGE HARBOR ROAD, CHATHAM, MASSACHUSETTS  
*Axiom Partners, Inc.***

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The current interpretation of the EPA's Resource Conservation and Recovery Act (RCRA) requires that waste generated during projects where LCPs are present and will be disposed of to be tested for the toxicity characteristic of lead in the waste stream. TCLP<sup>4</sup> testing is performed to determine whether waste (construction/demolition debris) must be classified as hazardous because of its lead content or if it can be disposed in a conventional construction and demolition (C&D) landfill. The regulatory limit for lead toxicity is 5.0 milligrams per liter (mg/L) using the EPA Method SW846-7420 for Atomic Absorption Spectroscopy (AAS).

Since lead paint abatement is not required and will not be performed prior to demolition activities, TCLP testing can be performed by the General Contractor, the demolition / abatement contractor or the owner's industrial hygiene consultant.

In general, if the amount of LCP in the demolition debris waste stream is relatively small, the dilution often results in passing TCLP testing.

Finally, the General Contractor (GC) should be made aware of the presence of lead paint testing results to satisfy the hazard communication requirements set forth by OSHA regulations. Specifically, contractors and subcontractors should be required to comply with OSHA regulations including 29 CFR 1926.62, *Lead Exposure in Construction: Interim Final Rule* and 29 CFR 1926.59, *Hazard Communication for the Construction Industry*. This could be accomplished by providing the GC with a copy of this report.

#### **4.3 Polychlorinated Biphenyls (PCBs)**

AXIOM identified one fluorescent light fixture in this building. This light fixture was mechanically fastened and could not be opened. As such, some ballasts are presumed to contain PCBs until the light fixtures can be opened and the presence or absence of PCBs can be confirmed. An inventory of the bulbs and ballasts is provided in Appendix C.

Ballasts that are not labeled "No PCBs" must be removed, packaged and disposed of in accordance with the EPA's Green Lights Program (July 1994) for Lighting Waste Disposal and in compliance with governing regulations. Ballasts labeled "No PCBs" must be presumed to contain di (2-ethylhexyl) phthalate (DEHP).

There are two methods currently available for disposal of PCB-containing ballasts including incineration and disposal. Incineration is typically more expensive.

The fluorescent light bulbs or ballasts will be removed and disposed prior to the demolition of the building. In general, PCB ballasts must be placed in 55-gallon drums which once filled, the drums shall be closed and properly labeled for temporary storage, transport, and disposal in accordance with all applicable regulations. Drums containing PCB ballasts must be transported to an EPA-approved disposal facility (incinerator). Documentation must be provided that verifies the proper removal, transportation, and disposal (destruction/incineration) at the approved facility. Drums containing non-PCB fluids, ballasts shall be disposed of at a legally permitted disposal facility.

Ballasts that are found not to contain PCBs do not have any special requirements for PCB handling and disposal. They should be properly recycled as non-PCB waste.

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<sup>3</sup> U.S. Department of Housing and Urban Development

<sup>4</sup> Toxicity Characteristic Leachate Procedure (TCLP)

#### **4.4 Mercury**

AXIOM identified fluorescent light tubes associated with the light fixture in the main garage area. No other suspect mercury material/equipment was observed during this survey. An inventory of the light tubes and mercury bulbs is provided in Appendix C.

Fluorescent light tubes known or presumed to contain Mercury vapor must be removed, packaged, handled, transported and disposed of in compliance with governing regulations.

Handling and disposal of fluorescent light tubes should be performed in accordance with the Massachusetts Universal Waste Management Standard (310 CMR 30.1034) as well as EPA's Resource Conservation and Recovery Act (RCRA) and other governing regulations and requirements. Guidance documents are also available from the EPA (e.g. the 1994 Green Lights Program for Lighting Waste Disposal). If fluorescent lamps become broken or damaged during removal, the broken lamps shall be managed as hazardous waste. Note that intact fluorescent light tubes may be reused.

#### **4.5 Chlorofluorocarbons (CFCs) & Miscellaneous Materials**

AXIOM did not observe any CFCs in this building. However, miscellaneous hazardous building materials were observed in the form of oil, paint, solvent and lubricant containers throughout the building. A refrigerator was also observed in the main floor garage. An inventory of the containers/ equipment is provided in Appendix C.

Handling and disposal of CFCs and miscellaneous materials should be performed in accordance with the Massachusetts Universal Waste Management Standard (310 CMR 30.1034) as well as EPA's Resource Conservation and Recovery Act (RCRA) and other governing regulations and requirements. Guidance documents are also available from the EPA (e.g. the 1994 Green Lights Program for Lighting Waste Disposal).

### **5.0 LIMITATIONS AND EXCLUSIONS**

#### **5.1 Limitations and Conditions of This Investigation**

##### *5.1.1 Investigative Survey*

This NESHAPs survey involved an investigation for ACMs in preparation for a specific demolition project. Although this investigation involved some exploratory demolition intended to identify and sample inaccessible building materials, the potential remains that concealed ACMs may be encountered in the building or at the site.

##### *5.1.2 Inaccessible Materials and Locations*

Inaccessible building areas, systems, structural components, or surfaces which may not have been observed because it was unsafe or impractical to demolish, disassemble, or remove systems or coverings, or because a human being cannot physically enter or observe the area or component. Unless specifically noted, examples of these inaccessible areas/materials may include:

- buried or otherwise concealed pipe trenches and utility vaults/corridors;

**ASBESTOS-CONTAINING MATERIALS, LEAD-CONTAINING PAINTS  
AND HAZARDOUS BUILDING MATERIALS SURVEY**

**613 STAGE HARBOR ROAD, CHATHAM, MASSACHUSETTS**

***Axiom Partners, Inc.***

- buried foundations;
- electrical equipment/wire;
- fire door cores;
- Flooring Materials under Raised Flooring or Plywood;
- Insulation behind Radiators;
- remnant window and door caulking that have been replaced or in-filled; and
- Concealed mechanical materials.

AXIOM made every reasonable effort to address these potential ACMs in the building. Floors were inspected in representative areas and ceiling spaces were viewed. However, the potential remains that concealed ACMs could be encountered during any future demolition project.

#### 5.1.3 *Other Environmental Exclusions*

1. This investigation did not include an assessment of air quality or analyses of soil, surface water or groundwater. Furthermore, this study did not include any subsurface exploration, testing or assessment for wetlands.
2. This investigation did not include assessments for the presence of pesticides, herbicides, urea-formaldehyde, PCBs in sealants/caulking or Radon, nor any air quality monitoring, or any chemical analyses of soil, surface water, or groundwater at the Site.
3. No attempt was made to check the compliance of present or past owners of the Site with Federal, State, or local laws.
4. The testing for lead paint was performed by an experienced Industrial Hygienist. It is intended only to satisfy the requirements of OSHA regulations including 29 CFR 1926.62, *Lead Exposure in Construction: Interim Final Rule* and 29 CFR 1926.59, *Hazard Communication for the Construction Industry*.

This investigation was not performed by an EPA HUD<sup>5</sup> or state accredited/licensed Lead Inspector which is often required for residential structures where children under the age of six live.

#### 5.1.4 *Project Specifications*

Users are cautioned that this document is an inspection report, not a project specification. Although it is often feasible to use a report such as this to obtain bids for asbestos and related abatement work, it does not provide a proper and/or complete document for defining the scope of work and contractual obligations.

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<sup>5</sup> US Department of Housing and Urban Development

APPENDIX A

Asbestos Bulk Sample Results and Chain of Custody

For Information Only



# ProScience Analytical Services, Inc

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Edward Kearney  
Axiom Partners, Inc., MA  
One Pleasure Island Rd., Suite 2C  
Wakefield, MA 01880

September 27, 2019

Dear Edward Kearney,

The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by ProScience for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Friable materials found to be less than 1% by CVE are automatically point counted (400 points) at no additional charge. ProScience recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. ProScience Analytical Services Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client. As such, these results apply to the sample(s) as received. Unless otherwise indicated, all samples were received in acceptable condition.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested. This report may not be reproduced except in its entirety, without the permission of ProScience Analytical Services, Inc., Laboratory Director.

If you have any questions, please contact the Optical Manager or the Laboratory Director.  
Sincerely,

Sopetra Ken, Optical Asbestos Manager  
Aimee Cormier, Laboratory Director

Enclosure: Version 2  
LAB BATCH ID: B 118186 CLIENT PROJECT ID: 01136.888  
Client Ref: 613 Stage Harbor Road, Chatham, MA  
CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; NVLAP Lab Code 200090-0; RI ID # AAL-093;  
VT ID# AL016876

# ProScience Analytical Services, Inc.

Client Name: Axiom Partners, Inc., MA  
 PO #: N/A  
 Client Project #: 01136.888  
 Client Reference: 613 Stage Harbor Road, Chatham, MA  
 Method: EPA/600/R-93/116

**Batch: B118186**  
 Date Sampled: 9/24/2019  
 Date Received: 9/25/2019  
 Date Analyzed: 9/27/2019  
 Date of Report: 9/27/2019

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-01	Brown	0	0	0	0	0	0	10	0	60	0	0	0	30
Description: Paper Insulation														
Location: Interior														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-02A	Brown	0	0	0	0	0	0	0	0	80	0	0	0	20
Description: Linoleum Ceiling Sheeting														
Location: Interior, 1st Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-02B	Brown	0	0	0	0	0	0	0	0	80	0	0	0	20
Description: Linoleum Ceiling Sheeting														
Location: Interior, 2nd Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-02C	Brown	0	0	0	0	0	0	0	0	80	0	0	0	20
Description: Linoleum Ceiling Sheeting														
Location: Interior, 2nd Floor														
Comments: Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-03	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Gas Pipe Putty Sealant														
Location: Exterior, Shed														
Comments: Recommend TEM Analysis Is asbestos present? No. Analyzed: Yes														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-04A	Black	<1	0	0	0	0	0	0	0	80	0	0	0	20
Description: Tar Paper under Wood Shingles														
Location: Exterior														
Comments: Recommend TEM Analysis Is asbestos present? Yes. Analyzed: Yes														

# ProScience Analytical Services, Inc.

Client Name: Axiom Partners, Inc., MA  
 PO #: N/A  
 Client Project #: 01136.888  
 Client Reference: 613 Stage Harbor Road, Chatham, MA  
 Method: EPA/600/R-93/116

**Batch: B118186**  
 Date Sampled: 9/24/2019  
 Date Received: 9/25/2019  
 Date Analyzed: 9/27/2019  
 Date of Report: 9/27/2019

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-04B	Black	<1	0	0	0	0	0	0	0	80	0	0	0	20
Description: Tar Paper under Wood Shingles														
Location: Exterior														
Comments: Recommend TEM Analysis <span style="float: right;">Is asbestos present? Yes. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-05A	Multi	0	0	0	0	0	0	0	0	15	0	0	0	85
Description: Gypsum Wallboard														
Location: Interior, 2nd Floor														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-05B	Multi	0	0	0	0	0	0	0	0	15	0	0	0	85
Description: Gypsum Wallboard														
Location: Interior, 2nd Floor														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-06	Tan	2	0	0	0	0	0	0	0	0	0	0	0	98
Description: Joint Compound														
Location: Interior, 2nd Floor														
Comments: <span style="float: right;">Is asbestos present? Yes. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-07A	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Window Glazing														
Location: Interior, 2nd Floor														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-07B	Gray	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Window Glazing														
Location: Interior, 2nd Floor														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

# ProScience Analytical Services, Inc.

Client Name: Axiom Partners, Inc., MA  
 PO #: N/A  
 Client Project #: 01136.888  
 Client Reference: 613 Stage Harbor Road, Chatham, MA  
 Method: EPA/600/R-93/116

**Batch: B118186**  
 Date Sampled: 9/24/2019  
 Date Received: 9/25/2019  
 Date Analyzed: 9/27/2019  
 Date of Report: 9/27/2019

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-08	Black	0	0	0	0	0	0	0	0	0	0	0	0	100
Description: Mastic on Fiberglass Insulation														
Location: Interior														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-09A	Black	0	0	0	0	0	0	0	0	80	0	0	0	20
Description: Roof Tar Paper under Asphalt Shingles														
Location: Exterior														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-09B	Black	0	0	0	0	0	0	0	0	80	0	0	0	20
Description: Roof Tar Paper under Asphalt Shingles														
Location: Exterior														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-10A	Black	0	0	0	0	0	0	15	0	0	0	0	0	85
Description: Roof Asphalt Shingles														
Location: Exterior														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Sample ID	Color	Asbestos %						Non-Asbestos %						
		CHR	AMO	CRO	ACT	TRE	ANT	FBG	MNW	CEL	HAR	SYN	OTH	NON
092419-02-10B	Black	0	0	0	0	0	0	15	0	0	0	0	0	85
Description: Roof Asphalt Shingles														
Location: Exterior														
Comments: <span style="float: right;">Is asbestos present? No. Analyzed: Yes</span>														

Asbestos Codes: CHR = Chrysotile    AMO = Amosite    CRO = Crocidolite    ACT = Actinolite    TRE = Tremolite    ANT = Anthophyllite  
 Non-Asbestos Codes: FBG = Fiberglass    MNW = Mineral Wool    CEL = Cellulose    HAR = Hair    SYN = Synthetic    OTH = Other    NON = Non-Fibrous Minerals

Note: To create a unique lab sample ID, use the Batch # and the Sample ID (example: [Batch #] - [Sample ID]).

\* All results are in percentage.

**Analyst:** Sophetra Ken *Caterina Deuker For*

Client Name: Axiom Partners, Inc., MA  
 Client Project #: 01136.888  
 Client Reference: 613 Stage Harbor Road, Chatham, MA

Batch: **B118186**  
 Date Received: 9/25/2019  
 Date Due: 9/27/2019  
 Stop on first pos: Yes or No

Batch: **B118186**

Sample ID	Description	Analyst	Stereo Scope				Optical Properties						Asbestos Percent					Non-Asbestos Percent										
			SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Elongation	Sign of	Birefringence	Pleochroism	RI	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other
092419-02-01	Paper Insulation	S.K.P.	1/2	Y	F	Y															I	W						
092419-02-02A	Linoleum Ceiling Sheeting	S.K.P.	1/2	Y	F	Y															10	W						30
092419-02-02B	Linoleum Ceiling Sheeting	S.K.P.	1/2	Y	F	Y																W						20
092419-02-02C	Linoleum Ceiling Sheeting	S.K.P.	1/2	Y	F	Y																W						20
092419-02-03	Gas Pipe Putty Sealant	S.K.P.	1/2	Y	F	N																						100*
092419-02-04A	Tar Paper under Wood Shingles	S.K.P.	1/2	Y	F	N																W						20*
092419-02-04B	Tar Paper under Wood Shingles	S.K.P.	1/2	Y	F	N																W						20*
092419-02-05A	Gypsum Wallboard	S.K.P.	1/2	Y	F	Y																W						85

For Information Only

Analyzed by: *[Signature]* 9/27/19

Q.C. Michele  
*[Signature]*  
 9.27.19

Comments: \* recommend for analysis

Batch: **B 118186**

Sample ID	Description	Analyst	Stereo Scope					Optical Properties					RI		Asbestos Percent					Non-Asbestos Percent							
			SSAPE	Color	Homogeneity	Texture	Friable	Morphology	Extinction	Elongation	Sign of	Birefringence	Pleochroism	Parallel	Perpendicular	Chrysotile	Amosite	Crocidolite	Tremolite	Anthophyllite	Actinolite	Fiberglass	Mineral Wool	Cellulose	Hair	Synthetic	Other
092419-02-05B	Gypsum Wallboard	S.K.P.		Y	Y	Y																W					95
092419-02-06	Joint Compound	S.K.P.		T	Y	Sm	Y																				98
092419-02-07A	Window Glazing	S.K.P.		G	Y	Sm	N																				100
092419-02-07B	Window Glazing	S.K.P.		G	Y	Sm	N																				100
092419-02-08	Mastic on Fiberglass Insulation	S.K.P.		B	Y	Sm	N																				100
092419-02-09A	Roof Tar Paper under Asphalt Shingles	S.K.P.		B	Y	W																W					20
092419-02-09B	Roof Tar Paper under Asphalt Shingles	S.K.P.		B	Y	F	N															W					20
092419-02-10A	Roof Asphalt Shingles	S.K.P.		B	N	Y	N															J					85
092419-02-10B	Roof Asphalt Shingles	S.K.P.		B	N	Y	N															J					85

For Information Only

Analyzed By / Date: *September 9, 2019*

QC By / Date:

Fax, Email, Verbal Results By / Date: *PLC 9/27/19* # of Samples: 17

*Milena Murray 9.27.19*

E: H.W. KA 9-27

Comments:

# ProScience Analytical Services, Inc.

www.proscience.net

MA Office (HQ) 22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net  
 CT Office (AHERA Only) 683 N Mountain Rd, Newington, CT 06111 T: 860-953-1022 F: 860-953-1030 ct@proscience.net

TAT(Circle)

Rush 12h 24h **48h** 3d 4d 5d Other

**PLM**

Chain of Custody  
ver 3.0

Off-hours work is available  
but subject to PASI  
approval and surcharges.

Batch #

**B118186**

<b>Client</b>	<b>Name</b>	Axiom Partners, Inc.
	<b>Address</b>	1 Pleasure Island Road, Wakefield, MA
	<b>Job #</b>	#01136.888
	<b>Job Name</b>	613 Stage Harbor Road, Chatham, MA
	<b>PO #</b>	

**Results**

Tel	Fax	Email	HC
		X	

**Final Report**

Email	Hard Copy
X	

<b>Analysis</b>	Bulk	Special Instructions
	Bulk (600 / R-93 / 116)	<input checked="" type="checkbox"/> Stop on First Positive
	Wipes (EPA 600)	TEM NOB Negative Bulk Samples
	Point Count (EPA 600)	Point Count <10% Asb. Samples
	Soil (EPA)	
	NOB (NY-ELAP)	

<b>Contact</b>	<b>Name</b>	Edwatd Kearney
	<b>Phone/Fax</b>	508-274-5703
	<b>Email</b>	ekearney@axiomenv.com

Relinquished By

*Edwatd Kearney*

Date / Time

9-24-19 12:15pm

Received By

*Paula Southall*

Date / Time

9-25-19 9:20

Relinquished By

Date / Time

Received By

Date / Time

Client ID	Description	Type	Location / Date & Time Collected	Volume or Area	Comments
092419-02-01	Interior Paper Insulation				
092419-02-02A	Interior Linoleum Ceiling Sheeting, First Floor				
092419-02-02B	Interior Linoleum Ceiling Sheeting, Second Floor				
092419-02-02C	Interior Linoleum Ceiling Sheeting, Second Floor				
092419-02-03	Exterior Shed, Gas Pipe Putty Sealant				
092419-02-04A	Exterior Tar Paper under Wood Shingles				
092419-02-04B	Exterior Tar Paper under Wood Shingles				
092419-02-05A	Interior Second Floor Gypsum Wall Board				
092419-02-05B	Interior Second Floor Gypsum Wall Board				
092419-02-06	Interior Second Floor Joint Compound				
092419-02-07A	Interior Second Floor Window Glazing				
092419-02-07B	Interior Second Floor Window Glazing				
092419-02-08	Interior Mastic on Fiberglass Insulation				

For Information Only

Client / Job Information Axiom Partners, Inc. / 613 Stage Harbor Road, Chatham, MA

Client ID	Description	Type	Location / Date & Time Collected	Volume or Area	Comments
092419-02-09A	Exterior Roof Tar Paper under Asphalt Shingles				<div style="color: red; font-size: 48px; transform: rotate(-45deg); opacity: 0.5;">For Information Only</div>
092419-02-09B	Exterior Roof Tar Paper under Asphalt Shingles				
092419-02-10A	Exterior Roof Asphalt Shingle				
092419-02-10B	Exterior Roof Asphalt Shingle				



# ProScience Analytical Services, Inc

---

Ed Kearney  
Axiom Partners, Inc., MA  
One Pleasure Island Rd., Suite 2C  
Wakefield, MA 01880

October 02, 2019

Dear Ed Kearney,

Results of samples you described and submitted to ProScience Analytical Services, Inc. are shown on the enclosed data sheets. The analytical results in this report apply to the items tested only.

The listed samples were prepared and analyzed in compliance with the New York State Transmission Electron Microscope Method for Identifying and Quantitating Asbestos in Non-Friable Organically Bound Bulk Samples. This method is used for the determination of weight percent of asbestos in non-friable materials.

The sample is processed to remove non-asbestos interference. The remaining residue is examined using a Philips transmission electron microscope equipped with selected area electron diffraction (SAED) and an Evex energy dispersive x-ray analyzer.

The following are reported: identification numbers, type of material, color of the sample, initial weight of the sample, weight percent of organic material lost by ashing, weight percent of carbonates lost by acid dissolution, weight percent of non-fibrous/non asbestos inorganic material, total weight percent of asbestos in the original sample, and the type(s) of asbestos, if any.

The EPA recognizes asbestos as the following: actinolite, amosite, anthrophyllite, chrysotile, crocidolite, and tremolite. To be considered asbestos containing, a material must be determined to contain greater than one percent asbestos. Samples are retained for a period of 2 months.

The quality control data related to the samples analyzed are available for review upon the written request of the client. ProScience Analytical Services, Inc. and its personnel assume no responsibility for potential sample contamination, misuse, misinformation, or misrepresentation by the client. The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

This report may not be reproduced, except in its entirety, without permission of the ProScience Analytical Services, Inc. Laboratory Director.

Please contact me if you have any questions regarding this report or related information.

Sincerely,

Mark Derosier, Senior Analyst  
Aimee Cormier, Laboratory Manager

Enclosure:

BATCH NUMBER : NT 18007 CLIENT PROJECT ID: 1136.888  
Client Ref: 613 Stage Harbor Road, Chatham, MA  
CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056; VT ID# AL016876; RI ID# 186.

# ProScience Analytical Services, Inc.

22 Cummings Park, Woburn, Massachusetts 01801  
 781-935-3212 ~ Fax: 781-932-4857 ~ E-Mail: general@proscience.net

## Laboratory Report

Client Project #: 1136.888  
 Client Reference: 613 Stage Harbor Road, Chatham, MA  
 PO #: N/A  
 Client #: 459  
 Client Name: Axiom Partners, Inc., MA

Batch: NT 18007  
 Method: NOB  
 Date Received: 9/30/2019  
 Date Analyzed: 10/2/2019  
 Date of Report: 10/2/2019

LAB ID	Field ID	Description:	Color	Initial Weight	% Asbestos Types						% Other Non-asb.	% Organic	% Carb.	Total % Asbestos	Analyzed / Charged	Preped / Charged
					CHR	AMO	ACT	CRO	ANT	TRE						
NT135624	092419-02-03	Exterior Shed, Gas Pipe Putty Sealant		.1032	.00	.00	.00	.00	7.13	.00	64.19	18.12	10.56	7.13	Yes	No

**Comments:**

Key: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite TR = Trace = < 1% ND = None Detected

  
 Mark Derosier, Analyst

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# ProScience Analytical Services, Inc.

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www.proscience.net

TAT (circle)

Rush 12h 24h 48h 3d 4d 5d Other

NT 18007



Chain of Custody

ver 3.0

Off-hours work is available but subject to PASI approval and surcharges.

Batch #

6118186

Client	
Name	Axiom Partners, Inc.
Address	1 Pleasure Island Road, Wakefield, MA
Job #	#01136.888
Job Name	613 Stage Harbor Road, Chatham, MA
PO #	

Results			
Tel	Fax	Email	HC
		X	

Final Report	
Email	Hard Copy
X	

Analysis		
Bulk (600 / R-93 / 116)	X	Stop on First Positive
Wipes (EPA 600)		TEM NOB Negative Bulk Samples
Point Count (EPA 600)		Point Count <10% Asb. Samples
Soil (EPA)		
NOB (NY-ELAP)		

Contact	
Name	Edward Keamey
Phone/Fax	508-274-5703
Email	ekeamey@axiomenv.com

Relinquished By	Received By

Relinquished By	Date / Time
Received By	Date / Time
	9-24-15 12:15pm
	9-25-15 9:20

Client ID	Description	Type	Location / Date & Time Collected	Volume or Area	Comments
092419-02-01	Interior Paper Insulation				
092419-02-02A	Interior Linoleum Ceiling Sheeting, First Floor				
092419-02-02B	Interior Linoleum Ceiling Sheeting, Second Floor				
092419-02-02C	Interior Linoleum Ceiling Sheeting, Second Floor				
092419-02-03	Exterior Shed, Gas Pipe Putty Sealant				
092419-02-04A	Exterior Tar Paper under Wood Shingles				
092419-02-04B	Exterior Tar Paper under Wood Shingles				
092419-02-05A	Interior Second Floor Gypsum Wall Board				
092419-02-05B	Interior Second Floor Gypsum Wall Board				
092419-02-06	Interior Second Floor Joint Compound				
092419-02-07A	Interior Second Floor Window Glazing				
092419-02-07B	Interior Second Floor Window Glazing				
092419-02-08	Interior Mastic on Fiberglass Insulation				

For Information Only

APPENDIX B

Laboratory Paint Analysis Results

For Information Only



### Laboratory Report

**Contact:** Ed Kearney  
**Client:** Axiom Partners  
**Address:** One Pleasure Island Road, Suite 2C  
Wakefield, MA 01880

**Batch #:** C 300652  
**Date received:** 9/25/2019  
**Date analyzed:** 9/25/2019  
**Date of report:** 9/25/2019

**Project #** 01136.888  
**P.O.#** N/A  
**Project Site:** 613 Stage Harbor  
Chatham

AIHA-LAP, LLC Lab ID 102754

**Lead Analysis In Paint Using SOP Based on SW846-7420/3051**  
Results in weight percent on an "as received" weight basis

Lab ID	Client ID	Sample date	Description	Result	Reporting Limit	Comments
C 632847	Pb-01	9/24/19	Exterior Wood Vert Trim, Grey Paint	3.65	0.026	
C 632848	Pb-02	9/24/19	Interior Wood Wall/Door Panel, White Paint	<RL	0.023	
C 632849	Pb-03	9/24/19	Interior Wood Wall/Door Panel, Red Paint	<RL	0.040	
C 632850	Pb-04	9/24/19	Interior Wood Door Panel, Grey Paint	<RL	0.020	
C 632851	Pb-05	9/24/19	Interior Wood Door Panel, Multi Color	0.18	0.031	
C 632852	Pb-06	9/24/19	Interior FWS Second Floor Office, Green	0.019	0.017	

For Information Only

\_\_\_\_\_  
Simona Peavey, Tech. Manager Chemistry  
Aimee Cormier, Lab Director

Unless otherwise indicated, all samples were received in acceptable condition.  
All results apply only to the samples tested and as received and are accurate to no more than three significant figures.  
Unless otherwise indicated, all the quality control criteria for the method above have been met.

**RL-Reporting Limit(%by weight)** Note on units: mg/Kg is the same as ppm by weight.



APPENDIX C

Hazardous Building Materials Inventory

For Information Only

## Hazardous Building Materials Inventory

### Fluorescent Light Bulbs and Ballasts

Description	Location	Manufacturer	Quantity	PCB Content (Y/N/U)
2 Bulbs, 8' Ceiling Suspended	Ground Floor Garage Area	N/A	1	No PCBs

### Equipment and Miscellaneous Hazardous Building Materials

Description / Location	Quantity
Fire Extinguishers	~2 cylinders
Gas & Oli Cans	See Below*
Paint/Solvents	See Below*
Hydraulics/Lubricants	See Below*
Miscellaneous Containers	See Below*
Refrigerator	1 Unit
Gas Pipes	Exterior (50 LF)
Gas Cylinders (05)	1 cylinder

\*There are many containers throughout this garage, the contractor will be responsible for inventorying all items and ensuring the proper disposal/recycling of any remaining containers found throughout the building. The majority of the containers are small (<1 gallon to 5-gallon containers).

For Information Only

APPENDIX D

Site Photographs

For Information Only



**Photo 1**

Asbestos Tar Paper under Exterior Wood Shingles



**Photo 2**

Second Floor Office with Asbestos Joint Compound on Walls



**Photo 3**

Miscellaneous Containers, Equipment, etc.



**Photo 4**

Gas Line With Asbestos Putty

## SECTION 02075

### MISCELLANEOUS OILS AND HAZARDOUS MATERIALS REMOVAL

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION OF WORK

- A. The work covered by this Section includes the handling, removal, and disposal of various oils and hazardous materials (OHM) and chemicals that are not included in other sections of the Specifications. The work of this Section includes the sampling, analysis, drainage, collection, removal, transportation, and disposal of waste oils, lubricating oils, waste paint, oil residue, oily rags, and the removal of Polychlorinated Biphenyl (PCB) and mercury containing electrical equipment and lamps.
- B. The work includes, but is not limited to, transformers, light fixture ballasts, fluorescent lamps, elevator/mechanical rooms and tanks/containers that are integral components of the building support systems.
- C. **A listing of the hazardous building materials is attached to the back of these specifications.**
- D. Furnish all labor, materials, equipment, and services required for all work included in this Section. All work-site preparations and practices will be conducted in accordance with all Federal, Massachusetts and appropriate City and other local regulations, standards and codes pertaining to worker health protection, protection of the public health and the environment, including current US Environmental Protection Agency (EPA), Department of Labor Occupational Safety and Health Administration (OSHA), US Department of Transportation (DOT), Massachusetts Department of Labor Standards (MA DLS), Massachusetts Department of Environmental Protection (MA DEP), local and all other Federal, Commonwealth of Massachusetts and local regulations pertaining to removal, transportation and disposal.
- E. All provisions of this Section relating to the health and safety of workers and the general public, as well as protection of the environment are minimum standards. The Contractor is responsible for determining whether any legal requirements or prudent conservative work practices require any additional and/or more stringent protective measures and implementing such measures if deemed necessary. Nothing in this Section shall be deemed to relieve the Contractor from any liability with respect to any such legal requirements or requirement of prudent conservative practice.
- F. Should the Contractor, while performing work under this Contract, uncover or discover OHM, as defined in Massachusetts Hazardous Waste Regulations 310 CMR 30.00, that are not identified for removal and disposal in this or other Sections

of these Specifications, then the Contractor shall immediately notify the Owners Representative. The Contractor shall also immediately report to the Owners Representative any condition that is reportable under the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000.

1.02 RELATED WORK

- A. Section 02090 – Lead Paint Considerations
- B. Section 02080 – Asbestos Abatement

1.03 SCOPE OF WORK

- A. The following is the description and approximate quantities of OHM identified at the site. The Contractor is required to examine all Contract Documents and conditions and verify quantities prior to submitting a bid for work of this Section. **The inventory of hazardous building materials in this building is located at the back of these specifications.**
- B. PCB-Containing Light Ballasts - Ballasts that do not contain PCB's are assumed to contain Di (2-ethylhexyl) phthalate (DEHP).
  - 1. Contractor shall remove and dispose of all PCB-containing light ballasts in the Site as PCB-containing hazardous waste in accordance with all applicable state and federal regulations. Removal and disposal of all light ballasts shall include proper packaging, transportation and disposal of waste. Contractor is required to provide and secure all notifications and permits necessary for the transportation and disposal of PCB-containing light ballasts as hazardous material. The disposal options may include recycling, Subtitle-C and disposal at a chemical or hazardous waste landfill, or incineration at an EPA-approved high temperature incinerator. Under no circumstances (i.e. intact ballasts) shall the Contractor be allowed to dispose of light ballasts at a municipal solid waste landfill. Contractor is advised that all leaking PCB-containing ballasts must be incinerated at an EPA-approved high temperature incinerator at its costs.
  - 2. If Contractor elects to recycle PCB-containing light ballasts, the Contractor is required to provide certificates of recycling for specific light ballast components that can be reclaimed (i.e. metals including copper or steel) and hazardous waste manifests for the PCB-containing components of the light ballasts (i.e. capacitors and possibly asphalt potting material surrounding the capacitor).
  - 3. Ballasts that may contain Di (2-ethylhexyl) phthalate (DEHP), which was used as a substitute for PCB, shall be removed, packaged, transported, and disposed of in accordance with applicable federal, state, and local regulations.

Trap Dock Reconstruction  
Chatham, MA

4. Furnish all labor, materials, equipment, and services required for all work included in this Section.
5. Comply with all applicable federal, state, and local regulations, as well as all requirements set forth in these Specifications and facility requirements.
6. Perform decontamination and clean up following removal activities in each designated work area.
7. Perform any other work or activities required by this Specification, applicable regulations, or as necessary to perform a complete job to the satisfaction of the Authority.
8. Provide temporary electrical wiring and services as required for removal and disposal of PCB-containing light ballasts.

C. Transformers

1. Inspect transformer to determine if "Dry Type" or contains dielectric fluids
2. Tests fluids to determine PCB content
3. Drain transformer.
4. Dispose transformer in accordance with applicable regulations.
5. Provide decontamination and clean up following removal activities in each designated work area.

D. Fluorescent Light/High Intensity Discharge (HID) Lamp Bulbs.

1. Remove, package and transport all mercury/lead-containing fluorescent and high-intensity discharge (HID) lamp bulbs. (Note: Green tip fluorescent lamps do contain mercury and must be handled and recycled in accordance with MA DEP regulations and the requirements of this Section)
2. Avoid breaking or damaging the bulbs. Bulbs shall not be dropped or thrown but shall be removed from the fixture and immediately placed into proper packaging receptacles. Additionally, bulbs shall not be taped together prior to packaging. Fluorescent light bulbs shall be packaged and labeled in accordance with transporter packaging and labeling requirements.
3. Mercury containing lamps must be recycled as universal waste or managed as hazardous waste. Comply with all applicable federal, state, and local regulations.
4. Provide decontamination and clean up following removal activities in each designated work area.

5. Provide temporary electrical wiring and services as required for removal and disposal of mercury/lead-containing bulbs.

E. Refrigerants:

1. Remove refrigerants from HVAC equipment. Removal must be conducted by personnel trained and certified to conduct the work in accordance with applicable regulation. Dispose or recycle refrigerant in accordance with applicable regulations.

- F. Contractor shall provide hazardous waste manifests and/or disposal documentation documenting the proper disposal of all oils, hazardous materials, and refrigerants included in this Section in accordance with all applicable state and federal regulations.

1.04 DEFINITIONS

- A. Fluorescent Lamp Recycler or Dismantler – a recycling facility that is an in-state dismantler that has a valid written regulatory interpretation letter from DEP, or an in-state dismantler that is operating in compliance with a hazardous waste recycling permit, or a lawfully authorized out-of-state facility.
- B. Hazardous Waste – a waste, or combination of wastes, which because of its quantity, combinations, or physical, chemical or infectious characteristics may cause or significantly contribute to an increase in serious irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health, safety or welfare or to the environment when improperly treated, stored, transported, used or disposed, or otherwise managed, as further defined by 310 CMR 30.000.
- C. RCRA – Resource Conservation Recovery Act
- D. RCRA TSD Facility – This type of facility shall be approved to operate under Federal Part B Permit and shall accept RCRA characteristic hazardous waste as defined in 40 CFR Part 261
- E. Solid Waste – Useless, unwanted, or discarded solid, liquid or contained gaseous material resulting from industrial, commercial, mining, agricultural, municipal, or household activities that is abandoned by being disposed of, incinerated or stored, treated or transferred pending such disposal, incineration, or other treatment, as further defined by 310 CMR 19.006. Solid waste in this reference does not include hazardous wastes, as defined above.
- F. Universal Waste - Means any of the following hazardous wastes, as further described in 310 CMR 30.1020, that are managed under the universal waste requirements of 310 CMR 30.1000:
1. Batteries;

2. Pesticides;
3. Thermostats;
4. Mercury-containing devices; and
5. Mercury-containing lamps.  
[NOTE: Not all batteries, pesticides and lamps are hazardous waste, and therefore, they do not all qualify as universal wastes; such wastes may instead be managed as non-hazardous solid wastes.]

G. TSD – treatment, storage, and disposal

H. “No PCBs” – No detectable levels of PCBs.

I. PCB – any detectable level of PCBs.

J. Liquid OHM: Containerized liquid, oil, or hazardous materials, including, but not limited to, those listed in paragraph 1.05 of this Section, and in 310 CMR 19.0000, 310 CMR 30.0000, and 310 CMR 40.0000.

#### 1.05 REGULATORY REQUIREMENTS

A. The requirements for regulations, permits, and notification of the Hazardous Materials Health and Safety Plan Requirements and the Emergency Response Plan, shall apply to the Work of this Section.

B. Before commencing Work, the Contractor shall notify all agencies, as required by the Federal, State, regional and local authorities, of the Work to be performed. The notifications shall be given in the required number of days in advance of the commencement of Work. Copies of all required permits and licenses shall be obtained and submitted to Owners Representative for review and acceptance. The Contractor shall pay all required fees.

C. The following regulations are cited for the information and guidance of the Contractor. The list below is not all-inclusive; the Contractor shall be responsible for a thorough knowledge and full implementation of all requirements for the removal, transport and disposal of PCB and mercury containing electrical equipment and lamps.

1. U.S. Environmental Protection Agency 40 CFR Part 761.
2. U.S. Environmental Protection Agency 40 CFR Parts 260 – 272.
3. Commonwealth of Massachusetts. 310 Code of Massachusetts Regulations (CMR) 19 and 30.

Trap Dock Reconstruction  
Chatham, MA

4. U.S. Department of Transportation (DOT) Title 49 Code of Federal Regulation (CFR) Parts 100-177 and Parts 350-399. The latest versions shall apply.
5. Federal Occupational Safety and Health Administration (OSHA) Title 29 CFR 1910 and 29 CFR 1926.
6. National Electric Code (NEC) Articles 450-23, 450-24, 450-25, 450-28.

1.06 SUBMITTALS

- A. Prepare a disposal plan for the materials associated with this Section. Submit to the Owners Representative, all pertinent information relating to the transport of material specified herein, including:
  1. Name and address of all transporters; and
  2. Name and address of any hazardous waste transporters (provide this information if any of the disposal or recycling facilities are out-of-state), plus:
    - a. United States Environmental Protection Agency (EPA) Identification Number and expiration date.
    - b. Proof of permit, license or authorization to transport hazardous waste in all affected states.
- B. PCB Ballast and Mercury Light Bulb Management Plan: PCB Ballast and Mercury Light Bulb Management Plan: The Contractor shall review the specified work tasks and removal, collection, recycling, and incineration methods and shall prepare a detailed PCB Ballast and Mercury Light Bulb Management Plan that identifies the work procedures and safety measures to be used in PCB Ballast and Mercury Light Bulb removal. The plan shall address the various sources of PCB ballasts and Mercury (Hg) lights, and the methods to be undertaken to remove these hazards to include the following key elements:
  1. Removal methods for each PCB-containing ballast component.
  2. Removal methods for each Hg-light containing component.
  3. Training requirements as required by Federal, Massachusetts and local regulations.
  4. Unique problems associated with the PCB or Hg removal project.
  5. Sequencing of PCB ballast and Hg lighting related work.
  6. Engineering controls.
  7. Work Practice controls.

8. Hygiene facilities and practice.
- C. Waste Collection and Disposal Plan: A Waste Disposal Plan shall be prepared that will include but not be limited to the following:
1. The name and address of the fluorescent lamp recycler or dismantler that will accept fluorescent lamps intact.
  2. Name and address of the RCRA TSD facility that will accept broken fluorescent lamps and hazardous waste.
  3. Name and address of the recycling facility that will accept broken fluorescent lamps.
  4. Copies of all authorization letters, licenses, or permits to operate for the facilities, to confirm that they are permitted to accept the fluorescent lamps
  5. Name and address of hazardous waste transporter that will transport fluorescent lamps & ballasts to RCRA TSD facility including EPA identification number and proof of permit, license, or authorization to transport hazardous waste in all affected states.
  6. A written confirmation that the debris will be treated and disposed of in accordance with the requirements of 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 264 and 40 CFR 268.
  7. A written confirmation that transportation of the debris will be in accordance with 40 CFR 263.
  8. Detailed delivery tickets prepared, signed, and dated by an agent of the landfill, certifying the amount of PCB-containing ballast materials and Hg-containing light bulb containers delivered to the incinerator or recycling facility, within 3 days after delivery.
- D. Submit to the Owners Representative a schedule detailing the proposed sequence of operations to perform the work specified herein.
- E. Prepare and submit a Hazardous Materials Health and Safety Plan for the work associated with this Section.
- F. The Contractor shall submit to Owners Representative the name, location, and qualifications of the State certified testing agency(ies) that he proposes to use for the work of this Section. A description of the specific tests, testing procedures, and protocols which the testing agency will perform shall be included.

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Chatham, MA

- G. Submittals specified in Paragraphs 1.03 A. through 1.03 E. above shall be accepted by the Owner's Representative prior to Contractor executing the work of this Section.
- H. Provide a copy of all permits, completed shipping manifests, and destruction certificates to Owner's Representative.
- I. Submit a copy of all sampling analyses to Owners Representative within 2 days of receipt of the laboratory reports for the sampling required in this Section. Analytical data shall be kept confidential, distributed only to Owners Representative and, as necessary, DEP.
- J. Contractor shall provide to Owners Representative copies of all weight slips, both tare and gross, for every load weighed and disposed of at the disposal or recycling facilities. The Owners Representative shall only allow progress payments after receipt of these weight slips.

**PART 2 - PRODUCTS**

2.01 GENERAL

- A. Provide all drums, overpack drums, storage containers, packing material, and related products and materials required for collection, storage, and transport of hazardous materials in compliance with Department of Environmental Protection (DEP), EPA and U.S. Department of Transportation (DOT) requirements. All drums shall meet the requirements of DOT 49 Code of Federal Regulations {CFR} 173.
- B. Provide all equipment and containers necessary to collect, sample, drain, flush, handle, remove, transport, and disposal of all hazardous materials
- C. Provide all materials, products, and equipment: necessary to bulk, shred, sort, flush, dilute, or otherwise: prepare hazardous chemicals and materials for disposal at the approved disposal facilities.
- D. Provide all materials for temporary containment area: Including berms, containment pans, impervious barriers and absorbent materials.
- E. Provide all employees: with personal protective equipment and protective clothing consistent with the level of protection for each type of Work as indicated in the approved Hazardous Materials Health and Safety Plan.

**PART 3- EXECUTION**

3.01 GENERAL

- A. Perform all work specified in this Section in such a manner as to prevent any spills and leaks during the performance of work.

Trap Dock Reconstruction  
Chatham, MA

- B. At a minimum, construct berms around floor drains and all openings to storm and sanitary sewer systems in such a manner as to completely prevent seepage of materials into conduits/piping.
- C. Furnish and install necessary equipment (such as cut-off valves) to isolate systems and prevent releases.
- D. In the event of an accidental spill or leak, the Contractor shall be responsible for the release.
- E. Perform all sampling and laboratory analyses to test fluids, gases, and sludges to be disposed of, as required for transportation, disposal, and reclamation purposes
- F. The use and disposal of ballasts, wiring, capacitors and transformers containing PCBs is highly regulated and compliance to all requirements set forth by authorities having jurisdiction is an essential condition of this Contract. The Contractor shall be fully aware of all such requirements; ensure that all required permits are obtained and in place including those required of any Sub-contractor, prepare all manifests and certifications, and deliver all copies of completed manifests and final certifications and certification of destruction to Owner's Representative in the form of one complete tracking document.

3.02 REMOVAL OF BALLASTS

- A. All light fixture ballasts and capacitors shall be removed using appropriate techniques and personal protection gear as detailed in the submittals.
- B. Prior to removal of any ballast, the Contractor shall uncover and inspect the label on the ballasts. All ballasts designated as "No PCBs" shall be marked with green paint, all other ballasts and capacitors shall be assumed to contain PCBs and shall be marked with red paint. Similar color-coding shall be used for the receiving drums.
- C. Removal shall be performed using approved methods and tools that will minimize damage to the fluorescent lamp or white good item and ensure a quick, neat removal with the ballast or capacitor intact and undamaged.
- D. The ballasts and capacitors shall be placed in color coded 55-gallon drums.
- E. The 55-gallon drums shall be closed and properly labeled for transport and disposal.

3.03 REMOVAL OF TRANSFORMERS

- A. All transformers shall be handled with appropriate personal protective equipment.
- B. Prepare each transformer to be electrically disconnected in compliance with the National Electrical Safety Code the National Electrical Code, and OSHA regulations

Trap Dock Reconstruction  
Chatham, MA

- C. Transformers labeled 'dry type' shall be handled and disposed of as white goods in Compliance with 310 CMR 19.017, Waste Control
- D. Transformers labeled 'No PCBs' shall be drained, if necessary, and shall be marked with green paint. The fluid shall be placed in properly sealed drums painted green, and be sampled and analyzed by the Contractor, as required for transportation and disposal purposes.
- E. Each transformer not positively identified as containing 'No PCBs'" shall be sampled in place to determine the concentration of PCBs prior to any removal activities as required for transportation and disposal purposes.
- F. Before sampling transformers, the Contractor shall take the following preparatory and precautionary measures. These measures shall remain in effect for the duration of the transformer sampling and removal process.
  - 1. Cover and seal all drains, manholes and other openings that may lead to waterways in such a manor to prevent any migration of the contaminants.
  - 2. Provide temporary containment designed to contain the entire contents of the fluid to be removed. This containment shall encompass the transformer, and any areas designated for temporary storage. In addition, absorbents in the amounts adequate to absorb a spill from one complete equipment failure shall be placed within the containment area.
  - 3. Provide adequate spill cleanup equipment within the containment area.
- G. The laboratory proposed by the Contractor shall be certified for such analyses by the Commonwealth of Massachusetts and shall be capable of demonstrating skill and experience in similar projects. The laboratory shall forward copies of all reports and technical correspondence directly to the Owners Representative. All reports shall completely and positively identify each transformer sampled.
- H. Based on the analytical results, the transformers shall be marked with paint as follows:
  - 1. Green-No PCBs
  - 2. Red-Containing PCBs

3.04 DRAINING PROCEDURES

- A. Following the disconnection of the electrical power source, pump PCB fluids in place from the equipment into specified containers before moving to minimize the accidental release of fluids. The PCB filled type of electrical equipment is not intended for use as transport vessels and therefore must be drained of fluids before removal and transport.

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- B. A suitable area shall be designated by the Contractor for draining the transformers. The designated area location shall be subject to review and acceptance by the Owners Representative.
- C. This area shall be lined with 40-mil High Density Polyethylene (HDPE) sheeting and appropriately bermed to contain any potential spills. The HDPE shall be covered with absorbent paper. Absorbent paper, HDPE, rags, disposable protective clothing, soils, and any other incidental generated from the work activities shall be placed in EPA approved containers.
- D. Upon completion of the on-site Work within the temporary containment area, all hoses, pump, drip pans tools, and any other equipment used, shall be decontaminated and properly secured in accordance with all applicable EPA regulations.
- E. Any contamination of the exterior surfaces of equipment, which may contaminate the work area, shall be cleaned and neutralized prior to moving the equipment.
- F. All concrete or other surfaces contaminated by PCB fluids or articles in the course of the work, or as a result of spills or leakage, shall be thoroughly scrubbed using a combination of absorbents, solvents, and cleaners.
- G. The Contractor shall provide, at Contractors expense, all necessary wipe test samples in response to spills or leakage. A laboratory qualified in PCB analyses shall perform all testing services. Test methods shall meet EPA test method 8080.
- H. All hazardous materials generated from work activities, decontamination, and cleanup operation; shall be placed in EPA/DOT approved containers, including all fluids and contaminated solids such as absorbents rags, disposable protective clothing and any other incidentals.
- I. All drums and article Containers used shall be properly sealed, marked, labeled, and dated.

3.05 STORAGE AND MATERIALS

- A. Properly sealed drums and containers may be stored on-site for up to 30 days after handling, prior to transporting off-site. Store all drums and containers in a secure location specifically designated for the storage of hazardous chemicals and materials.
- B. Light fixtures, wiring, ballasts, and capacitors once removed, shall be stored on-site for no more than 30 days. Drums containing PCB fluid shall be stored onsite, for no more than 30 Days. At the conclusion of each day's work, drums containing PCB fluid and ballasts and capacitors shall be stored in a designated secure location under lock and key. Transformers shall be protected from damage and secured under lock and key until they are removed for transport and disposal

3.06 TRANSPORT OF MATERIALS

- A. All haulers shall be properly licensed to transport hazardous waste materials in Massachusetts and all other states traversed in transporting the hazardous wastes, waste oils, ballasts, wiring, capacitors and transformer, and any other hazardous material removed under this Section to approved disposal sites haulers shall be under the direct Control of the Contractor at all times. Any spills during transport shall remain the responsibility of the Contractor. Any damage or costs incurred, as a result of a spill and the required clean-up process shall be borne by the Contractor.
- B. Provide drip pads or containment required for transport and dispose of these at an EPA approved incinerator. Contractor shall submit documentation verifying removal, transportation and disposal at the approved disposal facility.
- C. Transport all hazardous materials under proper manifests as required.
- D. Vehicles used for the transportation of hazardous materials shall be plainly marked as required by the DOT.
- E. The Contractor shall be responsible for preparing all manifests and other required shipping documents and or acquiring the necessary signature for transport.
- F. The Contractor shall weigh drums on-site using a certified portable scale.
- G. All drums and equipment carcasses shall be secured to the transport vehicle to prevent movement during transport.

3.07 DISPOSAL REQUIREMENTS

- A. All drums containing hazardous wastes, waste oils, PCB fluids, ballasts, wiring, capacitors, and transformers shall be transported to legally permitted servicing facilities or EPA approved disposal facility. If servicing storage facilities are utilized, the date of arrival shall be documented, as required for documentation of compliance with the EPA maximum allotted "Storage for Disposal" period of one year. Transfer of material from this Contract to an EPA approved disposal facility shall occur with 90 days or more remaining in the one-year storage period. The Contractor shall be liable for all penalties associated with the tardiness in delivering PCB waste to an approved disposal facility.
- B. Drums containing PCB fluids, ballasts, wiring and capacitors that are marked red and other PCB contaminated materials shall be incinerated at an EPA approved incinerator. Contractor shall submit documentation verifying removal, transportation, and disposal at the approved disposal facility.
- C. Drums containing "No PCB" fluids, ballasts, wiring and capacitors that are marked green shall be disposed of at a legally permitted disposal facility. Contractor shall submit documentation verifying removal, transportation, and disposal at the approved disposal facility.

- D. Transformer carcasses that are marked red shall be taken to a state and federally regulated PCB service facility where they shall be disposed of as follows:
1. Each carcass shall be drained of residual PCB liquid, solvent rinsed and stripped of all non-metallic solids. Cleaning of carcass shall be continued until PCB levels are less than 10 mg per 100 square centimeters, to be verified by wipe analyses.
  2. The non-metallic combustible solids (i.e. paper, gaskets, pressboard, wood, etc.) shall be collected and placed in drums and incinerated at an EPA approved incinerator.
  3. The residual PCB liquid and solvent rinse fluids shall be collected, drummed and incinerated at an EPA approved incinerator.
  4. The cleaned equipment carcass shall be smelted to complete destruction at an EPA approved processing facility. Landfilling of any components is not permitted.

### 3.08 FINAL CERTIFICATIONS

- A. Upon completion of the destruction of PCB fluid, ballasts, capacitors, wiring transformers and other PCB contaminated materials, the contractor shall provide:
1. Written certification from the disposal facility that the items being disposed of were delivered to, accepted, and destroyed by the disposal facility. The person authorized by the disposal facility to accept PCB items for disposal shall sign certificates.
  2. Copies of all manifests including all manifests associated with any remanifesting procedures during storage and handling.
  3. Certificates of destruction of materials.
- B. The documentation shall include the make, serial number and year of manufacture of the transformers, their location and description, the location of the incinerator, and the quantity of disposed PCBs. Documentation shall satisfy EPA regulation with reference to record keeping.

### 3.09 WHITE GOODS AND OTHER ITEMS

- A. Environmentally hazardous materials and system components shall be removed from white goods items and properly recycled or disposed prior to disposal of the white good carcasses. Environmentally hazardous materials requiring removal from white good items include but are not limited to:
1. Capacitors

2. Dry-type transformers

- B. White goods which do not contain environmentally hazardous materials and white good items from which the Contractor has removed environmentally hazardous materials prior to their removal from the building, shall be removed transported and disposed of at approved facilities.

3.10 HANDLING AND DISPOSAL OF FLUORESCENT/HID LAMPS

- A. All fluorescent/HID lamps shall be recycled to the maximum extent possible. Lamps shall be removed from fixtures intact, prior to demolition.
- B. The Contractor shall manage fluorescent/HID lamps in the following manor:
1. Do not break or crush spent lamps
  2. Store spent lamps in a secure area protected from physical damage. This storage area should be identified within an easily read sign stating, "Spent Fluorescent/HID Lamp Storage Area".
  3. Store lamps in packaging or containers that are designated to minimize breakage during both storage and shipping.
  4. Store and ship broken lamps in a sealed vapor tight container.
- C. Use bill of lading that contains the following information when shipping to the recycler:
1. Name and address of generator, transporter and recycler.
  2. Number of lamps shipped
  3. Date of shipment and date of receipt by recycler
  4. Date and signature of recycler
- D. Broken fluorescent/HID lamps shall be placed in 55-gallon drums for disposal as either a solid waste or hazardous waste pending sampling and analyses.
- E. The Contractor shall analyze representative material samples for TCLP – Mercury in accordance with EPA Method 1311/6010/7000 with a 2-Day turnaround time using a Commonwealth of Massachusetts certified laboratory.
- F. Material exceeding the TCLP regulatory level for Mercury (TCLP-Mercury concentration of all samples greater than 0.2 mg/l) shall be classified as a RCRA characteristic hazardous waste.

- G. Material not exceeding the TCLP regulatory level for Mercury (TCLP-Mercury concentration of all samples less than 0.2 mg/l) shall be classified as a solid waste and may be disposed of accordingly.

**Hazardous Building Materials Inventory**

**Fluorescent Light Bulbs and Ballasts**

Description	Location	Manufacturer	Quantity	PCB Content (Y/N/U)
2 Bulbs, 8' Ceiling Suspended	Ground Floor Garage Area	N/A	1	No PCBs

**Equipment and Miscellaneous Hazardous Building Materials**

Description / Location	Quantity
Fire Extinguishers	~2 cylinders
Gas & Oli Cans	See Below*
Paint/Solvents	See Below*
Hydraulics/Lubricants	See Below*
Miscellaneous Containers	See Below*
Refrigerator	1 Unit
Gas Pipes	Exterior (50 LF)
Gas Cylinders (02)	1 cylinder

*\*There are many containers throughout this garage; the contractor will be responsible for inventorying all items and ensuring the proper disposal/recycling of any remaining containers found throughout the building. The majority of the containers are small (<1 gallon to 5-gallon containers).*

END OF SECTION

**SECTION 02080**

**ASBESTOS ABATEMENT**

**PART 1 - GENERAL**

1.01 GENERAL PROVISIONS

- A. Attention is directed to the GENERAL REQUIREMENTS AND COVENANTS - DIVISION I and the SPECIAL PROVISIONS - DIVISIONS IIA and IIB, the SAMPLE CONTRACT FORMS – DIVISION IV, which are hereby made a part of this Specification Section.
- B. Examine all Drawings and all Sections of the Specifications and requirements and provisions affecting the work of this section.

1.02 DESCRIPTION OF WORK

- A. The work covered by this Section includes the removal of asbestos-containing materials (ACM) indicated in the Contract Documents. All provisions of this Section relating to the health and safety of workers and the general public, as well as protection of the environment are minimum standards. The Contractor is responsible for determining whether any additional and/or more stringent protective measures are required by any legal requirements or prudent conservative work practices and implementing such measures if deemed necessary. Nothing in this Section shall be deemed to relieve the Contractor from any liability with respect to any such legal requirements or requirement of prudent conservative practice.
- B. All work under this Section shall be performed by a contractor holding a current Massachusetts Division of Labor Standards (DLS) Asbestos Abatement Contractor's license.
- C. The Engineer will render certain technical services during the work, including without limitation, the services described at 453 CMR. 6.07 (5) and described within this Section. All services performed by the Engineer shall be considered advisory to, and for the sole and exclusive benefit of the Owner.

1.03 RELATED WORK

- A. Section 02090 – Lead Paint Considerations
- B. Section 02075 – Miscellaneous Hazardous Building Materials

1.04 SCOPE OF WORK:

- A. The work covered by this Section includes the removal of asbestos-containing materials (ACM) indicated herein and on the Contract Drawings. Activities include OSHA Class I and Class II work operations involving ACM. The work also includes containment, storage, transportation and disposal of the generated ACM wastes.

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- B. The Contractor shall furnish all labor, worker training, materials, equipment, utilities, and services for the complete and proper removal and disposal of asbestos-containing materials and associated debris.
- C. The following is the approximate locations and quantities of asbestos-containing materials to be removed. The Contractor is required to examine all Contract Documents and conditions and verify quantities prior to submitting a bid for work of this Section.
- D. **ACMS WERE DETECTED IN THE EXTERIOR TAR PAPER UNDER THE WOOD SHINGLES THROUGHOUT THE BUILDING. ACMS WERE ALSO DETECTED IN THE INTERIOR JOINT COMPOUND ON THE SECOND FLOOR OFFICES. SEE TABLE 1 BELOW.**

**TABLE 1**

Materials **confirmed** to contain asbestos at the subject building are as follows:

Material	Location(s)	Estimated Quantity <sup>1</sup>	Friability
Exterior Tar Paper	Behind Wood Shingles*	~3,000 SF	Non-Friable
Interior Joint Compound	Second Floor Walls in Offices**	~300 SF	Non-Friable
Gas Pipe Putty	Exterior/Interior Gas Pipes***	~75 LF	Non-Friable

*\*If required, the Contractor shall be responsible for any MADEP Non-Traditional Work Plan Requirements including preparation of the plan, AQ36 form completion and permit fees.*

*\*\*Some of the second-floor office walls have linoleum (over gypsum wall board); the contractor will be responsible to abate all walls/partitions in this area.*

*\*\*\*Pipe putty is located on the sealed fittings throughout the pipe. Some of the pipe may be inaccessible.*

**Table 2**

The following materials are **non-ACMs** based on bulk sample analysis:

Material	Location(s)
Black Insulation Paper on Fiberglass Batting	Throughout Building
Wallboard	Throughout Building
Roof Shingles	Throughout Roof
Black Paper underlayment under Roof Shingles	Throughout Roof
Linoleum Ceiling & Wall Sheeting	Throughout Roof
Window Glazing Materials	Second Floor Offices

<sup>1</sup> SF = Square Foot; LF = Linear Foot; TBD = To Be Determined

- E. Pre-Asbestos Abatement Demolition: Prior to conducting removal of ACM, the Contractor may remove all non-ACM building materials otherwise indicated for removal providing that the non-asbestos containing building material can be removed without disturbing ACM. Demolition of any non-asbestos building material that may include disturbing ACM or otherwise exposing concealed ACM shall be conducted utilizing engineering controls and procedure as described herein.
  - 1. Prior to conducting any demolition in the building, the contractor shall identify and label all identified ACM to ensure that pre-asbestos abatement demolition activities do not impact ACM.

1.05 DISCOVERY OF UNIDENTIFIED SUSPECT ACM

- A. The Owner's Representative has inspected and sampled other building materials which were determined not to be asbestos-containing materials as defined by the EPA. The Contractor shall review this information prior to commencing Work under this Contract. If the Contractor subsequently discovers any previously untested building components suspected to contain asbestos, the Contractor shall stop all work impacting the suspect materials and notify the Owner's Representative. The Owner's Representative will sample the suspect material and submit them for analysis to a laboratory accredited under the National Institute of Standards and Technology (NIST) "National Voluntary Laboratory Accreditation Program (NVLAP)". Any additional building components identified as ACM that have been approved by the Engineer for removal shall be removed by the Contractor and will be paid for by an equitable adjustment to the contract price in accordance with the General Conditions of the Contract Documents or may be removed by the Owner's Representative under separate contract.

1.06 AUTHORITY TO STOP WORK

- A. The Owner's Representative/Engineer as a licensed/certified asbestos Project Monitor has the authority to stop the abatement work at any time the Engineer determines that conditions are not in accordance with the Specifications and applicable regulations. The stoppage of work shall continue until conditions have been corrected and corrective steps have been taken to the satisfaction of the Engineer. Standby time required for resolving violations and Specification interpretations or contractual obligations shall be at the Contractor's expense.

1.07 DEFINITIONS

- A. Abatement: Any activity that has as its principal purpose the removal, enclosure or encapsulation of asbestos.
- B. Accessible: Any item (including ACM) or surface that can be reached by hand, provided sufficient ladders, lifts, safety lines, shoring, scaffolding and/or staging are installed to reach such item/surface, without performing any demolition of existing structures/items in order to reach such item/surface.
- C. Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways separated by a distance of at least 3 feet such that one

passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

- D. Air Monitoring: The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos monitoring follow the NIOSH Method 7400 with analysis by Phase Contrast Microscopy and/or the Transmission Electron Microscopy method.
- E. Asbestos Project Monitor: The Massachusetts Division of Safety certified professional contracted or employed by the Owner to supervise and conduct air sampling and monitor asbestos abatement activities.
- F. Amended Water: Water to which a wetting agent has been added.
- G. Asbestos: The asbestiform varieties of chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.
- H. Asbestos Containing Material (ACM): Any material containing equal to or more than one percent asbestos.
- I. Asbestos-Contaminated Objects/Surfaces: Shall mean any objects/surfaces that may be contaminated by asbestos or asbestos-containing material or water.
- J. Asbestos Containing Waste: Asbestos containing material or asbestos contaminated objects requiring disposal as asbestos.
- K. Category 1 Non-Friable Asbestos-containing Material: Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos.
- L. Class I asbestos work: Activities involving the removal of thermal system insulation, surfacing insulation and Presumed Asbestos Containing Materials.
- M. Class II asbestos work: Activities involving the removal of ACM that 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 mastics.
- N. Clean Room: An uncontaminated area or room which is a part of the worker decontamination enclosure system with provisions for storage of worker's street clothes and clean protective equipment.
- O. Competent Person: In addition to the definition in 29 CFR 1926.32(f), an individual who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take corrective measures to eliminate them. In addition, for Class I and II work, this individual must be trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for Project Designer or Supervisor, or its equivalent

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- P. Curtained Doorway: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway and securing the vertical edge of the other sheet along the opposite vertical side of the doorway. Other effective designs are permissible.
- Q. Decontamination Enclosure System: A series of connected rooms separated from the work area and from each other by airlocks and used for the decontamination of workers and equipment.
- R. Demolition: The wrecking or taking out of any building material or system together with any related handling operations
- S. Disposal Bag: 6-mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site. Each bag shall be labeled in accordance with EPA's NESHAPS, OSHA and DOT regulations.
- T. Encapsulation: The application of a coating or liquid sealant to asbestos-containing materials to reduce the tendency of the material to release fibers.
- U. Enclosure: The construction of an airtight, impermeable, permanent barrier around asbestos-containing materials or equipment containing ACM debris.
- V. Fixed Items: Equipment, mechanical systems, or other objects which cannot be removed from the work area without cutting/demolition, plus walls and floors.
- W. Friable Asbestos-Containing Material: Material that contains one percent or more asbestos, which when dry may be crumbled, pulverized, or reduced to powder by hand pressure. The term includes non-friable ACM that becomes damaged to the extent it may be crumbled, pulverized, or reduced to powder by hand pressure.
- X. HEPA Filtered Exhaust Units or Fans: A fan equipped with a High Efficiency Particulate Air (HEPA) filter, greater than 99.97 percent efficient by 0.3-micron DOP test, and complying with ANSI Z9.2 (1979), Local Exhaust Ventilation. It shall be used to create a negative pressure in a work area (reduced with respect to surrounding areas) in order to prevent the escape of asbestos fibers. It shall also be used to reduce and control the airborne concentration of asbestos fibers.
- Y. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air (absolute) filtered vacuum collection equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.
- Z. High-Efficiency Filter: A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles have a mean particle diameter of 0.3 micrometer.

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- AA. Industrial Hygienist: A professional qualified by education, training and experience to anticipate, recognize, evaluate and develop controls for occupational health hazards.
- BB. Isolation Barriers: The construction of partitions, the placement of solid materials, and the plasticizing of apertures to seal off the workplace from surrounding areas and to contain asbestos fibers in the work area.
- CC. Log: An official record of all activities that occurred during the project and it shall identify the building, agent, contractor, workers, and other pertinent information.
- DD. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
- EE. Negative Initial Exposure Assessment: A demonstration by the Contractor that employee exposure during an operation is expected to be below the PEL
- FF. Negative Pressure: Air pressure lower than surrounding areas, generally caused by exhausting air from a sealed space (work area).
- GG. Permissible Exposure Limit (PEL): An exposure limit that is published and enforced by OSHA as a legal standard.
- HH. Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.
- II. Presumed Asbestos Containing Material (PACM): Thermal system insulation and surfacing material found in buildings constructed no later than 1980.
- JJ. Project Designer: An individual who has successfully completed the training requirements for an abatement Project Designer established by 40 CFR 763 and is licensed by the Massachusetts DLS as an Asbestos Abatement Project Designer.
- KK. Protect Fixed Items: Shall mean to cover with solid enclosures and/or 6-mil polyethylene sheeting, and secure by taping or gluing water and airtight.
- LL. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.
- MM. Regulated Area: An area established by the Contractor to demarcate areas where Class I and II asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the permissible exposure limit.
- NN. Seal, or Block and Seal: Preparing a space or area such that there is no air movement or passage to and from the area. "Isolation barrier" shall mean the

system of seals or other items which prevent air movement to and from any work area.

- OO. Surface barriers, Protective Coverings or Polyethylene: The plasticizing of walls, floors, and fixed objects within the work area to prevent contamination during subsequent abatement activities.
- PP. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.
- QQ. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
- RR. Waste Generator: The Asbestos Abatement Contractor that operates and supervises work under this Section that produces asbestos-containing waste materials.
- SS. 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.
- TT. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.
- UU. Work Area: The area where asbestos related work or removal operations are performed which is defined and/or isolated to prevent the spread of asbestos dust, fibers or debris, and entry by unauthorized personnel. Work area is a Regulated Area as defined by 29 CFR 1926.1101. A work area is considered a contaminated space between the time preparation begins and the time the area is certified clean.

#### 1.08 COORDINATION AND PHASING OF WORK

- A. The Contractor shall coordinate all work with the Engineer and develop an Asbestos Abatement Plan, including a work schedule.

#### 1.09 PRE-CONSTRUCTION MEETING

- A. The Contractor shall meet with the Owner's Representative and Engineer for a Pre-Construction meeting prior to commencing work on the project. The meeting shall be at the site or at the offices of the Engineer, at a mutually convenient time and date. At the meeting, the Contractor shall be represented by authorized representatives and the field supervisor who shall run the project on a daily basis, and who shall present evidence that all requirements for initiation of the work have been met. The minimum agenda for the meeting shall be:

1. Review of "Pre-Job Submittals".

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2. Channels of communication.
3. Construction schedule, including sequence of critical work.
4. Designation of responsible personnel.
5. Procedures for safety, security, quality control, housekeeping, and related matters.
6. Use of premises, facilities, and utilities.

1.10 REFERENCE STANDARDS, REGULATIONS AND CODES

- A. All work shall be performed strictly according to the requirements of this Section and with the applicable regulations.
- B. These standards and codes shall be by reference made part of this Section and shall be complied with. Whenever regulations are conflicting, the more stringent regulation will prevail. The Contractor undertaking asbestos abatement work and persons in their employ shall comply with and be bound to requirements of the following Federal, State, and local standards, regulations, and codes:
  1. US Department of Labor; Occupational Safety and Health Act of 1970. (Particular attention is drawn to the Asbestos Regulations: CFR Title 29, Part 1910, Sec. 1910.1001 and Part 1926, Sec. 1926.1101, and the Respirator Regulations; CFR Title 29, Part 1910, Sec. 1910.134 and the Hazard Communication Program, CFR Title 29, Part 1910.1200).
  2. US Environmental Protection Agency. CFR Title 40, Part 61, Subparts A and M, National Emission Standards for Hazardous Air Pollutants; Asbestos (NESHAP) Revision, Final Rule, dated Tuesday, November 20, 1990.
  3. US Environmental Protection Agency. TSCA Title II, Asbestos Hazard and Emergency Response Act (AHERA), 40 CFR Part 763 Subpart E - "Asbestos-Containing Materials in Schools" and also 40 CFR, Part 763, Subpart G - "Worker Protection Rule".
  4. US Department of Transportation. 49 CFR Parts 172 and 173.
  5. All Commonwealth of Massachusetts laws, regulations, and standards, including the following: 453 CMR 6.00 - "The Removal, Containment or Encapsulation of Asbestos"; 310 CMR 7.15 - "Asbestos"; 310 CMR 19.00 - "Solid Waste Facility Regulations"; and MGL Chapter 21E.
  6. Other Federal, State, and local statutes, ordinances, regulations, or rules pertaining to this Section and the work described herein, including the storage, transportation and disposal of asbestos.
- C. All regulations by these and other governing agencies in their most recent version are applicable. This Section of the Specifications refers to many requirements

found in these references, but in no way is intended to cite or reiterate all provisions therein or elsewhere. It is the Contractor's responsibility to know, understand, and abide by all such regulations and common practices.

#### 1.11 PERMITS AND NOTIFICATIONS

- A. The Contractor shall be responsible for securing and paying associated fees for all necessary permits for asbestos related work, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.
- B. The Contractor shall prepare and submit the required notifications, including paying associated fees, to the following agencies. All notifications shall be completed on forms approved by the subject regulatory agency. Copies of all required notifications must be submitted to the Engineer prior to commencing asbestos abatement work.
  - 1. Massachusetts Department of Environmental Protection, and Massachusetts DLS/DOS - (10 working days in advance). Send Common Notification to:  
Commonwealth of Massachusetts  
Asbestos Program  
P.O. Box 120087  
Boston, Massachusetts 02112-0087
- C. The Contractor shall notify the Chatham Fire Department in advance of any work performed. Notification shall be prior to storage or installation of Contractor's materials on the Owner's property.

#### 1.12 SUBMITTALS

- A. Prior to commencing any work under this Section, the Contractor shall submit the following items to the Authority for review in accordance with the General Conditions. No Work under this Section may commence until the Engineer has accepted all required submittals.
- B. Asbestos Abatement Plan: Prepare an Asbestos Abatement Plan describing engineering controls and procedures that the Contractor will use to conduct the Work of this Section. The plan shall include procedures for removing all contaminated items and debris. The Plan shall be prepared and signed by a Massachusetts certified Asbestos Designer. The Plan shall include but not be limited to the following:
  - 1. The location and description of regulated areas including clean and dirty areas, enclosures, access tunnels, personnel decontamination units (clean room, shower room, equipment room), waste load-out decontamination units, and storage areas.
  - 2. Work area preparations, including pre-cleaning, installation of critical barriers and polyethylene sheeting, construction of decontamination facilities, work area enclosures, sealing, isolation, and other activities.

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3. Location of utilities (electrical power, water) and a description of proposed electrical safeguards to be implemented, including but not limited to location of transformers, GFCI outlets, lighting, etc., necessary to safely perform the job, including a description of an electrical hazards safety plan for common practices in the work area.
  4. Protection of non-ACM materials and equipment inside of work areas with two layers of polyethylene sheeting.
  5. Decontamination and clean up following removal in each designated work area.
  6. Location of HEPA filtration units sufficient to achieve a minimum of four air changes per hour in each containment.
  7. The personal protective equipment and proposed respiratory program for employees throughout all phases of the job, including make, model and NIOSH approval numbers of respirators to be used.
  8. Level of supervision.
  9. Abatement methods to be used including containment and control procedures.
  10. Interface of other trades.
  11. Storage and disposal procedures and plan.
  12. Personal exposure air monitoring plan.
  13. Fire and medical emergency response procedures.
  14. Security procedures to be used for all regulated areas.
- C. The Contractor shall develop and implement appropriate procedures, engineering controls, personal protection equipment requirements, and worker training. The contractor shall prepare a written work plan and, if required, submit to the Massachusetts Department of Environmental Protection and/or Massachusetts Division of Occupational Safety for review and approval.
- D. Copies of all notifications, permits, applications, personal licenses and like documents required by Federal, State, or local regulations obtained or submitted in proper fashion.
- E. Chain of Command of responsibility at work site including supervisors, foreman, and competent person, their names, resumes and certificates of training.
- F. List of employees to be used on this Contract.

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- G. Copies of training certificates and Massachusetts DLS asbestos licenses for each employee to be used on the Contract. (This item may be submitted upon employee's initial arrival on the Contract).
- H. Copies of "Written Physicians Opinion" required by OSHA for each employee to be used on Contract. (This item may be submitted upon employee's initial arrival on the Contract).
- I. Record of successful respiratory fit test performed by a Competent Person (as defined by OSHA) within the previous 12 months for each employee to be used on this Contract. (This item may be submitted upon employee's initial arrival on the Contract).
- J. Proposed transporter and landfill for asbestos wastes. Copy of proposed Asbestos Waste Shipment Record form.
- K. Massachusetts Asbestos Contractor's License and Certificate of Insurance.
- L. A list of all equipment to be used on site, by make and model, including negative pressure equipment, HEPA vacuums, Water Atomizing Devices, etc.
- M. Contractor's testing lab, American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) proficiency, and Certification in the Commonwealth of Massachusetts.
- N. A schedule detailing the proposed sequence of operations to perform the work specified herein.
- O. Other Submittals
  - 1. Within 30 calendar days of receipt of asbestos waste at the approved landfill, the Contractor shall submit to the Authority the original copy of the "Waste Shipment Record" acknowledging disposal of all associated waste material from the Contract showing delivery date, quantity, and appropriate signature of Contractor's transporter's, and landfill's authorized representative.
  - 2. Within 30 calendar days of completion of work of this Section, submit two copies of the following:
    - (a) Regulated area entry-exit logbooks
    - (b) Personnel exposure monitoring results as required by OSHA.
    - (c) Copies of the documents indicated in Items 3, 6, 7, and 8 in Paragraph I

1.13 TEMPORARY FACILITIES

- A. Scaffolding: Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.
- B. Water Service: Water connection (without charge) to the Facility's existing potable water system is limited to one ¾" pipe-size connection, and a maximum flow of 10

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gpm each to hot and cold-water supply. Hot water shall be supplied at a minimum temperature of 100 F. Supply hot and cold water to the Decontamination Unit.

1. Temporary Water Service Connection: All connections to the water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment.
  2. Water Hoses: Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each decontamination unit. Provide temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment. Maintain hose connections and outlet valves in leakproof condition.
  3. Hot Water Heater: Provide UL rated electric hot water heater to supply hot water for the decontamination unit shower. Wiring of the hot water heater shall be in compliance with NEC, Massachusetts modifications to the NEC, and UL standards.
  4. Hot Water: If available and authorized by the Engineer, hot water may be secured from the building hot water system, provided backflow protection is installed at point of connection.
- C. Electrical Service: Electrical service is not available at the facility. Contractor shall obtain required permits and install temporary connections to the municipal electric power supply system. Comply with applicable NEC, Massachusetts modifications to the NEC, and UL standard and governing regulations for materials and layout of temporary electric service.
1. Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work of this Section. Provide receptacle outlets equipped with ground-fault circuit interrupters (GFCI), reset button, and pilot light for circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.
  2. Provide electrical outlets and extension cords in the clean room, equipment room, and at locations inside and outside the work area as required by the Engineer for the exclusive use of the Engineer for air monitoring purposes. Outlets and cords must be in sufficient numbers and locations to allow the required number of clearance samples to be taken simultaneously.
- D. Temporary Lighting: Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work and acceptable to the Engineer. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight and portable plug-in task lighting. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed

to breakage by construction operations. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

- E. Temporary Heating: Provide temporary heat where indicated or needed for performance of the work. Use steam or hot water radiant heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter. The use of direct fired combustion units inside the work area is prohibited. No open fires or burning will be allowed.

#### 1.14 PERSONAL PROTECTION

- A. Personal protection, in the form of disposable Tyvek suits, and NIOSH-approved respirators, are required for asbestos abatement workers, Contractor supervision, Engineer, and visitors at the work site during the set-up, removal, and cleaning operations. Contractor shall provide all this protective equipment for workers, Engineer, and personnel authorized to access this work site.
- B. Each worker shall be supplied with a minimum of two complete disposable uniforms every day. Removal workers shall not be limited to two uniforms, and the Contractor shall be required to supply additional uniforms as is necessary. Under no circumstances will anyone entering the removal area be allowed to reuse a contaminated uniform.
- C. Work clothes shall consist of disposable full body suits, head covers, gloves, footwear, and eye protection.
- D. The Contractor shall supply workers and supervisory personnel with NIOSH approved protective respirators and HEPA/filters. Appropriate respirator selection shall be determined by the daily personnel samples being taken and strictly follow the guidelines set forth in the OSHA respiratory program, 29 CFR 1910.134, 29 CFR 1926.1101 and the Massachusetts DLS Regulations, 453 CMR 6.00. The respirators shall be sanitized and maintained according to the manufacturer's recommendations. PAPP's shall be supplied by the Contractor for all personnel associated with this work. Disposable respirators shall not be considered acceptable in any circumstance. The Contractor shall maintain on site a sufficient supply of disposable HEPA/filters to allow workers and supervisory personnel to change contaminated filters at least three (3) times daily. The Contractor is solely responsible for means and methods used and for compliance with applicable regulations.
- E. Respirators shall be individually assigned to removal workers for their exclusive use. All respiratory protection shall be provided to workers in accordance with the Contractor's written submitted respiratory protection program. A copy of this program shall be kept at the worksite and shall be posted in the Clean Room of the Decontamination Unit.
- F. Workers must perform negative and positive pressure fit tests each time a respirator is put on, whenever the respirator design so permits. Powered air purifying respirators shall be tested for adequate flow as specified by the manufacturer.

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1. Workers shall be given a qualitative fit test in accordance with procedures detailed in 29 CFR 1910.134 – Appendix A for all respirators to be used for asbestos abatement under this Contract. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.
2. Upon leaving the active work area, pre-filters shall be discarded, cartridges removed, and respirators cleaned in disinfectant solution and clean water rinse. Clean respirators shall be stored in plastic bags when not in use. The Contractor shall inspect respirators daily for broken, missing, or damaged parts.
3. Contractor shall provide daily personal sampling to check personal exposure levels for the purpose of establishing respiratory protection needs. The Contractor is responsible for personal sampling as required by 29 CFR 1926.1101.
4. Air sampling results shall be available at the job site in written form no more than twenty-four (24) hours after the completion of a sampling cycle. The document shall list each sample's result, sampling time and date, person monitored, flow rate, sample duration, microscope field area, number of fibers per fields counted, cassette size and analyst's name and company. Air sample analysis results shall be reported in fibers per cubic centimeter.

1.15 SPECIAL CONSIDERATIONS

- A. Final Air Clearance Tests - Where required, all final air tests will be performed by the Engineer in accordance with Massachusetts Division of Occupational Safety (DOS) regulations at 453 CMR 6.00, this Section, and other applicable Rulings (i.e., AHERA). The Contractor shall provide the required number of 20" fans and leaf blowers to facilitate aggressive air sampling as required by the regulations. The Contractor shall provide 110-volt power throughout the work area as required in order to operate fans and Engineer's sampling equipment. The first set of final clearance air tests for each removal area will be paid for by the Owner. In the event that these air tests do not pass the clearance criteria, any subsequent air tests that need to be performed shall be paid for by the Contractor. All additional sampling costs will be automatically deducted from the Contract Price until the areas in question pass the final air clearance criteria of less than 0.010 fibers per cubic centimeter for Phase Contrast Microscopy (PCM) clearance testing.

**PART 2 - PRODUCTS**

2.01 MATERIALS, TOOLS, AND EQUIPMENT

- A. Negative Air Machines: Provide the required number of asbestos air filtration units to the site in accordance with these specifications. Each unit shall include the following:
  1. Cabinet: Constructed of steel or other durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standard-size doorways. Cabinet shall be factory sealed to prevent asbestos-containing dust from being

released during use, transport, or maintenance. Access to and replacement of all air filters shall be from intake end. Unit shall be mounted on casters or wheels.

2. Fans: Rate capacity of fan according to useable air-moving capacity under actual operating conditions. Use centrifugal-type fan.
3. HEPA Filters: The final filter shall be the HEPA type. The filter media (folded into closely pleated panels) must be completely sealed on all edges with a structurally rigid frame.
  - (a) A continuous rubber gasket shall be located between the filter and the filter housing to form a tight seal.
  - (b) Each filter shall be individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles. Testing shall be in accordance with Military Standard Number 282 and Army Instructions Manual 136-300-175A. Each filter shall bear a UL 586 label to indicate ability to perform under specified conditions.
  - (c) Each filter shall be marked with the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.
4. Pre-filters: Pre-filters which protect the final filter by removing the larger particles, are required to prolong the operating life of the HEPA filter. Two stages of pre-filtration are required. The first-stage pre-filter shall be a low-efficiency type (e.g., for particles 10 um and larger). The second stage (or intermediate) filter shall have efficiency (eg., effective for particles down to 5 um). Pre-filters and intermediate filters shall be installed either on or in the intake grid of the unit and held in place with special housings or clamps. Pre-filters shall be checked for accumulation at least twice per shift, and shall be changed as frequently as conditions require, especially during asbestos removal or during times of dust creation.
5. Instrumentation: Each unit shall be equipped with a Magnahelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed. A table indicating the useable air-handling capacity for various static pressure readings on the Magnahelic gauge shall be affixed near the gauge for reference or the Magnahelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) air delivery at the point. Provide units equipped with an elapsed time meter to show the total accumulated hours of operation.
6. Safety and Warning Devices: The unit shall have an electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter or with a filter installed backwards. Units shall be equipped with automatic shutdown system to stop fan in the event of a major rupture in the HEPA filter or blocked air discharge. Warning lights and audible alarms are required to indicate normal operation, too high a pressure drop across the filters (i.e.,

- filter overloading), and too low of a pressure drop (i.e., major rupture is HEPA filter or obstructed discharge).
7. Flexible ducts of sufficient length must be provided to allow the units to discharge outside of buildings (where possible).
  8. Electrical components shall be approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit shall be equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet shall be grounded.
- B. Respirator Protection Equipment: Provide respiratory protection equipment in accordance with the requirements of 29 CFR 1926.1101 and the Asbestos Abatement Contractor's respiratory protection program prepared in accordance with 29 CFR 1910.134.
1. Air Purifying Respirators:
    - (a) Respirator Bodies: Provide half face or full-face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.
    - (b) Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH Certification for "Radioisotopes, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Ducts and Mists" and color coded in accordance with ANSI Z88.7 (2001). In addition, a chemical cartridge section may be added, if required, for solvents, etc., in use. In this case, provide cartridges that have each section of the combination canister labeled with the appropriate color code and NIOSH Certification.
    - (c) Non-permitted respirators: Do not use any single-use, disposable or quarter face respirators.
- C. Wetting Materials: For wetting prior to disturbance of asbestos-containing materials use amended water. The material must be odorless, non-flammable, non-toxic, non-irritating, and non-carcinogenic. It shall be applied as a mist using a low-pressure sprayer recommended by the manufacturer. Use a mixture of surfactant and water which results in wetting of the asbestos containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
- D. Lock-Down Encapsulant: Provide penetrating or lock-down type encapsulants specifically designed for the use intended (as permitted). The material shall not contain organic solvents and be non-flammable, non-toxic, non-irritating, and non-carcinogenic.
- E. Polyethylene Sheeting: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size

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possible to minimize seams, 6.0 mils thick, frosted or black as required by Engineer.

- F. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to aggressively stick to sheet polyethylene.
- G. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- H. Waste Containers: For asbestos waste, provide 6 mil thick leak-tight polyethylene bags labeled with required EPA, DOT, OSHA labels. If the waste material contains sharp edges or may otherwise puncture polyethylene bags, provide drums or other closed containers for storage, transportation, and disposal.
- I. Fans and Leaf Blower: Provide one 20" diameter fan per 10,000 cubic feet of work area volume and one leaf blower to be used for aggressive sampling techniques for clearance air testing.
- J. Filters: Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos contaminated water from the work area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
  - 1. Primary Filter - Pass particles 20 microns and smaller
  - 2. Secondary Filter - Pass particles 5 microns and smaller.
- K. Sump Pump: Provide totally submersible waterproof sump pump with integral float switch. Provide unit sized to pump 2 times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide unit capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. Adjust float switch so that a minimum of 3" remains between top of liquid and top of sump pan.
- L. Warning Signs and Labels - Shall comply with 29 CFR 1926.1101, 1926.62, all other federal, state, or local codes and regulations.
- M. Ladders or Scaffolds - Shall be OSHA-approved and be of sufficient dimensions and quantities so that all work surfaces can be easily and safely accessed by the Engineer, workers, and other inspectors. Scaffold joints and ends shall be sealed with tape to prevent incursion of asbestos fibers.
- N. Hand Power Tools - Shall be equipped with HEPA-filtered local exhaust ventilation if used to drill, cut into, or otherwise disturb ACM.
- O. Pressure-Differential Recorder - Provide air pressure sensing devices equipped with recorders for continuous monitoring of work area pressure differential. Provide sufficient quantities of chart paper and maintain devices until completion of work.
- P. Lumber and Plywood - All lumber and plywood used for temporary barriers, enclosures, tunnels, platforms, and Decontamination Facilities shall be new and of

fire retardant grade to comply with the requirement for a flame spread of 25 or less with no evidence of significant progressive combustion when tested for thirty minutes duration under the Standard Test Method for surface burning characteristics of building materials (ASTM E-84, NFPA 255, UL 723 and AWPA C-20 and C-27). Lumber shall have minimum dimensions of 2" x 4" or as specified. Tongue and groove plywood shall be minimum 3/4-inch thickness, other plywood shall be minimum 1/2-inch thickness.

- Q. Vacuum Cleaning Equipment - Shall be industrial type designed for such use, equipped with High Efficiency Particulate Air (HEPA) filters. Separate dedicated vacuum cleaners shall be used for asbestos work and shall be clearly labeled as to their intended use. No other method will be permitted. Vacuuming equipment shall be Model GA72 or GA73 as manufactured by NILFISK of America, Inc.; Model CMP-1500-P as manufactured by Car-Mon Products, Inc.; equipment manufactured by J. D. Brophy, Inc. or approved equal. The equipment shall be properly operated at all times and shall contain no air leaks. Each vacuum cleaner shall be emptied and thoroughly cleaned (inside the work area) at the conclusion of the project, or each use.

### **PART 3 - EXECUTION**

#### **3.01 SEQUENCE OF WORK**

- A. The following is a typical sequence of work that Contractor shall adhere to during the asbestos abatement project.
1. Contractor shall post all required signage.
  2. Contractor shall secure area from unauthorized access.
  3. Contractor shall seal all floor drains, isolate HVAC system, isolate electrical systems, and install critical isolation barrier over windows and other building envelope openings as required.
  4. Contractor shall install HEPA filtration units, as required by this Section, sufficient to achieve a minimum of four (4) air changes per hour. All units shall exhaust to the outside of the building through windows.
  5. Contractor shall construct decontamination unit, and any other construction needed to complete the work area to the satisfaction of the Engineer.
  6. Engineer shall inspect and approve all work area preparations before permitting Contractor to begin removal work.
  7. Contractor shall construct demising barriers according to the provisions as set forth in this Section, as deemed necessary, and at the direction of the Engineer, if ceiling and wall voids are accessed during abatement activities.
  8. Contractor shall remove and dispose all asbestos-containing materials as required by these Specifications.

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9. Contractor shall decontaminate the work area upon completion of removal.
10. The Engineer shall perform a final visual inspection to assure that no visible debris exists in the work area. Contractor shall re-clean the work areas as needed until they pass a visual inspection by the Engineer.
11. Contractor shall encapsulate all surfaces in the work area.
12. The Engineer will perform final air clearance testing in each work area. Satisfactory results are required before containment may be removed.
13. Contractor shall remove all work area barriers, equipment, polyethylene sheeting, etc. and clean any areas to the satisfaction of the Engineer.

B. Approvals and Inspection

1. All temporary facilities, work procedures, equipment, materials, services, and agreements must strictly adhere to and meet the requirements of these Specifications along with EPA, OSHA, NIOSH, regulations and recommendations as well as any other Federal, State, and local regulations. Where there is overlap of these requirements and regulations, the most stringent one applies. All work performed by the Contractor is further subject to approval of the Engineer.
2. Modifications to the isolation and sealing methods, procedures, and design may be considered if all elements of proper and safe procedures to prevent contamination and exposure can be demonstrated. Written modifications to the requirements of this Section must be made to the Engineer for review before they can be used for work under this Contract.

C. Barriers and Isolation Areas

1. The Contractor shall construct and maintain suitable critical barriers within the building to separate asbestos abatement work areas from other spaces in the building. Critical barriers shall be of sufficient size and strength to prevent others from entering the work areas. Critical barriers shall be constructed at all hallways, doorways, grille openings, or other open entrances to the work area. Any seams in the critical barriers shall be sealed airtight with caulking or an approved equal method. These barriers shall be removed by Contractor at the completion of abatement work.
2. Warning signs as required in 29 CFR 1926.1101 shall be posted on the entrance to all work areas.
3. The signs shall be posted at the perimeters of asbestos removal, demolition, or construction areas where the asbestos-containing material to be removed exists.
4. The Contractor shall maintain all temporary and critical barriers, facilities, and controls as long as needed for the safe and proper completion of the work. Any breaches in the containment shall be corrected at the beginning of each

shift and as necessary during the workday. Work will not be allowed to commence until all control systems are in place and operable.

5. No barriers shall be removed until the work areas are thoroughly cleaned, all debris has been properly bagged and removed from work areas, and the air has passed final clearance tests, in accordance with provisions detailed herein.

### 3.02 ACM WORK AREA PREPARATION AND REMOVAL

- A. Preparation: Except where variance from the regulations is approved by the DLS and approved by the Engineer, the Contractor shall prepare the work area as follows:

1. Primary Barriers: Prior to construction of the asbestos removal area, all primary barriers shall be sealed with a minimum of one layer of 6-mil plastic sheeting and duct tape. Primary barriers consist of all windows, vents, closed and locked doors, and openings to adjacent spaces from the work area. HVAC systems shall be sealed, where applicable, as described previously with two layers of 6-mil polyethylene sheeting.
2. Critical Barriers: Critical barriers consist of the boundaries of the work area including floors, walls, and any constructed barrier to restrict public access to the work area. Except where flooring materials will be removed, floors shall be sealed with a minimum of two layers of six (6) mil polyethylene sheeting. There shall be a minimum overlap of two feet (24") at the floor seams and the sheeting shall run a minimum of two feet (24") up the walls.
3. The containment walls shall be constructed using a minimum of two layers of 6-mil polyethylene sheeting after sealing the floors. When walls are constructed of impervious materials as defined by the DLS and with approval of the Engineer, a single layer of 6-mil polyethylene sheeting may be used. Overlaps between the walls and floors shall be interwoven as follows:
  - (a) The first floor layer shall be taped up the wall a minimum of two feet (24"). The first wall layer shall be sealed to the floor layer at the corner of the floor and wall. The second-floor layer shall be sealed to the first wall layer at a minimum of a two-foot (24") overlap. The second wall layer shall cover all overlaps and be sealed to the floor.
  - (b) The enclosure shall be constructed so as to allow the removal of interior layers of plastic without damaging the exterior layer. The exterior layer shall stay intact for the duration of the project and be designated the critical barrier.

- B. Decontamination Unit and Procedures

1. It is the Contractor's responsibility to provide decontamination chambers consisting of an Equipment Room, Shower Room, and Clean Room for personnel involved in asbestos removal. Each of the three rooms shall be of sufficient size to accommodate authorized personnel and related equipment.

Each room shall be separate of other rooms by a double flap of 6-mil polyethylene sheeting acting as an airlock. This shall be designed to minimize fiber migration and airflow between the decontamination unit rooms. The rooms shall be rigidly framed with 2"x4" lumber or equal (e.g. plywood, plastic tubing, etc.), masked, sealed and attached to the entry/exit ways of asbestos work areas. The three rooms together shall be referred to as the Decontamination Unit. A Decontamination Unit shall be required for each separate containment area. For work areas in which only Class II asbestos abatement work is performed, a two-chamber Decontamination Unit consisting of a clean room and an equipment room may be used.

2. The Equipment Room shall serve as a transfer room and an intermediate area between the work area and any decontamination procedures to occur in the shower room. This room shall be vacuumed and washed whenever necessary in order to prevent asbestos dust and debris accumulations or when required by the Engineer. The Equipment Room will also serve as an access area to the shower for personnel leaving the work area. Workers leaving the containment shall remove and dispose of disposable protective suits and wear only respirators into the Shower. At the end of each day, bags of asbestos waste and contaminated materials shall be removed after a thorough decontamination procedure as described elsewhere in this Section. Workers performing this operation shall wear respirators and disposable full-body protective suits.
  3. The Shower Room shall have a continuous supply of cold and hot water and be suitably arranged for complete showering during decontamination. The Shower Room with curtained doorways will comprise an airlock between contaminated and clean areas. All materials being passed from the equipment room to the clean room must pass through the shower and be thoroughly decontaminated. The shower floor will not be allowed to sit at ground level but must be elevated a minimum of six inches off of the floor with a suitable catch basin for drainage into a filtration system. The shower shall be equipped with a sump pump and an in-line two stage filter. The first stage shall efficiently filter fibers greater than twenty (20) microns in length and the second stage shall filter bulk material and fibers greater than five (5) microns in length. Alternatively, shower water may be re-routed back into the work area to be bagged and disposed of as asbestos contaminated waste. The Contractor shall provide disposable towels and soap in the shower area.
  4. The Clean Room shall store asbestos worker's clean protective clothing and clean respirator equipment. Contaminated clothing, respirators, tools, equipment, or other materials shall not be allowed into the Clean Room or beyond. The Clean Room shall serve as an access for personnel entering the work area, and for the donning of respiratory protection and protective clothing. The Contractor shall provide space in the clean room
- C. HEPA Filtration: Adequate negative pressure shall be provided within the enclosure as specified below.
1. After the work area is totally isolated, and prior to commencement of work, the Engineer will perform a visual inspection of the work area. This will

consist of checking the integrity of barriers including smoke testing the containment if deemed necessary by the Engineer. This does not in any way relieve the Contractor's responsibilities to ensure the isolation of the work area. The volume of air within the contained work area shall be changed a minimum of four (4) times per hour. A pressure differential reading of 0.02 inches of water shall be maintained in the negative pressure work area relative to adjacent areas. This will consist of checking the integrity of barriers including smoke testing the containment if deemed necessary by the Engineer. This does not in any way relieve the Contractor's responsibilities to ensure the isolation of the work area.

2. Pre-filters shall be changed frequently during the removal.
  3. Air movement shall flow uninterrupted from outside the work area through the Decontamination Unit into the work area. There shall be no other openings for air to enter the containment unless approved by the Engineer in writing.
  4. HEPA filtration units shall be placed as far as possible from the air intake to the containment to prevent short cycling of fresh air.
- D. This containment, along with the decontamination chamber, shall constitute the critical containment of the work area from the surrounding areas. All openings to this critical containment are to be sealed except where air must enter the worksite due to the use of exhaust equipment. Unless approved by the Engineer, air shall enter the critical containment only through the Decontamination Unit.
- E. General ACM Removal Procedures
1. Asbestos removal shall not begin until the Engineer has given authorization in writing to proceed. This authorization will be given after the removal area has passed a visual inspection by the Engineer based on the criteria presented herein.
  2. All asbestos containing material must be soaked with amended water before removal. The material shall be sufficiently saturated to reduce fiber release so that the airborne fiber concentration does not exceed the established OSHA Permissible Exposure Limits, (PEL's). The amended water shall not be applied in amounts that will cause leakage or runoff of contaminated water from the removal area. Dry removal will not be permitted during this Contract.
  3. Asbestos-containing material shall be carefully removed and placed immediately into bags. Bags must be filled with water to the point where all asbestos is adequately wetted as defined by Federal Regulations 40 CFR 61 Subpart M. Asbestos shall not be permitted to let fall or sit on the ground before being bagged.
  4. Fine cleaning of residual asbestos-containing material shall consist of carefully scraping or brushing the material from surfaces. The recommended method for brushing a substrate after gross removal has taken place is to use a nylon brush. Wetting of the substrate shall also occur while this brushing is

- performed, since the chance of airborne fiber generation during fine cleaning still exists.
5. Water Atomizing Devices, commonly termed "mistifiers," shall be utilized by the Contractor during asbestos removal and fine cleaning phases to provide further dust control protection in the work area. The mistifiers shall be supplied with amended water and in operation continuously during these phases.
  6. Asbestos waste must be double bagged before it is removed from the contained area. The inner bag shall be HEPA vacuumed and showered before being placed in the outer bag. Vacuuming must take place in the Equipment Room of the Decontamination Unit. Washing must take place in the Shower Room of the Decontamination Unit. Bags shall normally be removed at the end of each working day and transported from the job site.
  7. Any materials considered contaminated by the Engineer that cannot be double bagged shall be wetted and containerized in disposal drums. Oversized materials or materials with sharp edges that may pierce bags shall be placed in appropriate leak-tight containers. Oversized contaminated materials shall be wrapped airtight in two layers of 6-mil polyethylene sheeting.
  8. All bags, containers or wrapped materials transported out of the work area shall be labeled with preprinted labels required by Federal EPA, OSHA and the Department of Transportation regulations. Any carts used to transport asbestos waste to the on-site holding dumpster should be HEPA vacuumed and wet wiped each day and may be inspected by the Engineer every day.
  9. Carts that are not made of an impermeable material shall be lined with a minimum of one layer of 6-mil polyethylene sheeting to be removed after each shift and disposed of as contaminated waste. The transport route and the transport of waste out of the work area shall be coordinated with the Engineer.
  10. The work area shall be cleaned of residual asbestos debris on a daily basis. The Decontamination Unit floor (top layer) shall be picked up and replaced on a daily basis.
  11. Air testing will be performed continuously outside the enclosed area. If fiber concentrations exceed 0.010 fibers/cc or background levels, work shall stop, and the Contractor shall perform clean up activities in the affected areas and check the integrity of the critical barriers. Clean up activities shall include but not be limited to wet wiping and vacuuming surfaces with a HEPA equipped vacuum. Work may continue only after the source of contamination is identified, corrected, and proper cleaning activities are implemented. Air testing will be performed by the Engineer on site in the affected areas. If the results of these air tests are not below 0.010 fibers/cc, the Contractor shall perform a thorough decontamination of the affected areas.
  12. After brushing and scraping, surfaces shall be free of visible debris and fibers. A final wipe-down of the substrate with wet, lint-free rags shall take place in

order to ensure proper cleaning. All surfaces including floors, walls, and ceilings shall also be HEPA vacuumed clean. All visible asbestos-containing material is to be removed by the Contractor before encapsulation procedures are allowed to begin. The Engineer will perform an inspection of the work area prior to giving approval to begin encapsulation of work area. Removal substrate must be clean and bare, and the entire work area must be free and clear of any suspect material for the Contractor to pass this visual inspection and begin encapsulation.

13. Where insulated substrates penetrate walls or other demising structures, remove asbestos through to the opposite side of the demising structure. After the removal of the asbestos materials at the demising structures, any resulting spaces or breeches shall be foamed or sealed airtight.

#### F. Encapsulation Procedures

1. The polyethylene barriers shall be cleaned of gross contamination before a lock-down sealant can be applied to the substrate. After the substrate has been cleaned and all polyethylene barriers of the work area are cleaned of all visible debris, the Contractor shall request a visual inspection of the work area by the Engineer. Prior to the inspection of the work area, the Contractor shall remove the inside layer of the work area polyethylene sheeting, after cleaning, and dispose of it as contaminated waste. The work area shall still have all primary barriers intact and one layer of polyethylene sheeting over floor, walls, and permanent structures within the work area during the inspection.
2. Workers performing lock-down must wear disposable protective clothing and respirators suitable for asbestos. The encapsulation process shall not be treated any differently from the removal process in this respect.
3. The lock-down material shall be applied with a low pressure (less than 500 p.s.i.), airless spray type mechanism.
4. All surfaces in the work area shall be encapsulated. A minimum of one coat of lock-down encapsulant shall be applied to prevent the generation of airborne residual fibers. The lock-down encapsulant shall be applied to both the substrate and the polyethylene sheeting serving as the containment barrier. During the encapsulation process, the Contractor shall decrease the negative pressure of the work area by shutting down some of the air filtration devices in the work area. If the lock-down material is being applied to irregular, grooved, or corrugated surfaces, it shall be administered from the opposing side, or at a right angle to the direction of the previous application. The encapsulant shall be left to dry before the commencement of final air testing. After final air clearance and inspection criteria have been met, the Contractor shall begin final take-down procedures.

#### G. Removal of Critical Barriers

1. No critical barrier shall be taken down until the final visual inspection and final clearance air tests are found to below 0.010 fibers/cc.

2. After a successful final visual inspection, encapsulation, and a successful final air test, the Contractor shall perform post abatement take-down.
3. All encapsulated polyethylene sheeting used in the construction of the Decontamination Unit and Containment Area shall be bagged and disposed of as asbestos contaminated waste. Areas exposed during this process shall be examined for traces of suspect material. If any is found, it shall be picked up by HEPA vacuuming and wet cleaning, and a coat of encapsulant shall be applied to the affected areas. Based on the amount of suspect material found, the Engineer may request the use of misters in the surrounding area. The Contractor shall then implement the use of misters as a precautionary measure.

3.03 GLOVE BAG REMOVAL METHOD:

- A. Removal of asbestos containing pipe and/or pipe fitting insulation conducted using glove bags shall be performed in accordance with the following procedure:
  1. Contractor shall set up a containment barrier around the immediate area of glove bag removal. This containment is to consist of two layers of six (6)-mil polyethylene sheeting walls and a two layer six-mil polyethylene sheeting floor forming a fully enclosed "cocoon"-like work area enclosure.
  2. As an alternative to the "cocoon" enclosure described above, Contractor is permitted to erect a containment enclosure where all openings, windows, vents, and doors in the work area are sealed with two layers of six-mil polyethylene sheeting and duct tape. In addition, walls adjacent to the piping, floor surfaces below the piping, and any object in the work area shall be covered with two layers of six-mil polyethylene sheeting.
  3. Preparation of the area shall include a minimum double-stage decontamination unit at the entrance to the contained area, equipped with a HEPA vacuum for personal decontamination. Based on the total quantity of pipe insulation to be removed, provide a decontamination facility in accordance with the requirements of Class I work (e.g., 25 linear or 10 square feet or greater – three chamber decontamination facility with shower.).
  4. The containment area surrounding the glove bag area shall be under adequate negative pressure.
  5. Pipes and fittings where glove bags are to be used must be no warmer than 150°F, as the glove bag material may melt or stick to the pipes.
- B. All workers must wear full protective suits and respirators during all phases of glove bag work, including preparation, removal, clean up, and encapsulation.
- C. Glove bags shall be placed on pipes or fittings and securely taped with tools enclosed. Bags shall not have any holes which might allow air to escape during removal. Bags shall be checked by the Contractor with smoke tubes. A HEPA vacuum shall be inserted through the appropriate hole in the bag along with the

nozzle for the water sprayer containing amended water. When such preparations are completed, approval of the Contracting Officer shall be obtained for each glove bag work area before removal begins.

- D. Removal shall be performed by two-person teams. One shall support the vacuum and assist with wetting the material in the bag while the other does the actual cutting of the material. Once the material is removed and the pipes are clean and bare, the material in the bag shall be thoroughly wetted down and forced to the bottom of the bag. All air in the bag shall be vacuumed out, and the bottom portion of the bag containing all of the asbestos shall be twisted around before separating the bag from the pipe. Bags shall then be immediately placed in another labeled bag for disposal purposes. Glove bags shall not be permitted to accumulate in the work area after removal but shall be removed daily.
- E. All surfaces in the glove bag area shall be wet-wiped and HEPA-vacuumed. Polyethylene sheeting used to protect the immediate area shall be discarded as asbestos waste. Enclosure barriers shall be left up until results of clearance air samples are acceptable. Contractor shall encapsulate the pipes and fittings for inspection by the Contracting Officer.
- F. Lock-down must be done with a pre-approved encapsulant, after the pipe is essentially dry. Workers performing lock-down must wear disposable protective clothing and suitable respirators. The lock-down material shall be applied with a low pressure (less than 500 psi), airless, spray-type mechanism or be hand-applied. A minimum of one coat of lock-down encapsulant shall be applied. The lock-down encapsulant shall be applied to both the substrate and the polyethylene sheeting, if in place. If the lock-down material is being applied to irregular, grooved, or corrugated surfaces, it should be administered from the opposing side, or at a right angle to the direction of the previous application.
- G. Personal samples, containment area samples taken during glove bag operations, and/or final clearance air samples must not exceed 0.010 fibers/cc or above background levels. If this occurs, the area inside the containment must be thoroughly cleaned and encapsulated. Clearance air samples will then be taken with acceptance criteria of 0.010 f/cc required before the enclosure can be dismantled.
- H. Glove bag work areas will be post-tested in the same manner and with the same acceptance criteria as specified for total isolation removal, (i.e., 0.010 f/cc).

### 3.04 REMOVAL OF NON-FRIABLE ASBESTOS-CONTAINING ROOFING/SIDING MATERIALS

- A. Category 1 roofing materials shall be removed intact and not become friable during the removal process. Removal of Category 1 non-friable roofing material not intact or otherwise made friable during the removal process must be conducted utilizing full negative-air containment procedures, including final clearance inspection and air sampling, as defined herein. Work area enclosures provided exterior of the building shall be constructed to remain intact and withstand expected weather conditions.

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- B. Category I non-friable asbestos-containing roofing materials shall be removed from the roof and disposed in accordance with all regulations of applicable federal, state and local authorities concerning roofing materials, including the Interpretive Rule for Roof Removal Operations under the Asbestos NESHAP (40 CFR 61, Appendix A to Subpart M). The Department of Environmental Protection (DEP) has a policy statement that addresses the requirements for handling Category I non-friable asbestos-containing roofing materials. In addition, the following minimum work practices shall be adhered to:
1. Contractor shall post all OSHA required signage.
  2. Persons not involved in the removal shall be excluded from the roof areas.
  3. Workers shall wear protective clothing and respirators.
  4. All openings into the building near the work area shall be sealed with polyethylene sheeting or other appropriate covering.
  5. A minimum of a two-chambered worker decontamination enclosure system shall be provided on site in accordance with OSHA 29 CFR 1926.1101, Appendix G. Procedures for the utilization of this system shall be established which prevent contamination of areas outside the roof area.
  6. Category I Non-friable ACM shall be removed in small sections and containerized when wet. At no time shall material be allowed to accumulate or become dry.
  7. The roofing materials shall be wetted down with amended water and shall be maintained in damp condition throughout the demolition and disposal process. Mechanical methods of cutting are prohibited.
- C. Wood or metal substrate material on which ACM roofing materials is adhered shall be removed and disposed of as asbestos waste. Other non-ACM material adhered to ACM roofing material (e.g., sprayed-on foam insulation) shall be removed and disposed of as asbestos waste.
- D. Roofing/facade caulking and sealants shall be removed intact without saw cutting through ACM or grinding or other methods that may make the material friable.
- E. Category I Non-friable ACM shall not be dropped or thrown to the floor/ground level. For roofs of heights greater than fifty (50) feet above the floor/ground, a dust-tight enclosed chute shall be constructed to transport removed Category I Non-friable ACM to containers on the floor/ground.
- F. All Category I Non-friable ACM shall be adequately wetted before being placed into containers for disposal. Dispose of all non-friable, Category I asbestos-containing roof material and associated demolition debris in a landfill that legally accepts the material.
- G. A coating of encapsulating agent shall be applied to any porous surfaces that have been stripped of Category I Non-friable ACM to securely seal any residual fibers

that may be present. The encapsulating agent should be chosen so as to be compatible with subsequent coverings.

- H. Clean-up procedures using HEPA vacuuming and wet cleaning techniques shall be performed following abatement.

### 3.05 REMOVAL OF CAULKING, SEALANTS AND GLAZING COMPOUND:

- A. Removal of asbestos-containing caulking, sealants, and glazing compound from windows, doors, expansion joints and other similar materials shall be in accordance with all applicable regulations. At a minimum, the following work practices shall apply:

1. Workers shall wear protective clothing and half-mask, dual-cartridge, HEPA-filtered respirator, at a minimum.
2. The work area shall be isolated as required by regulations and to the satisfaction of the Contracting Officer.
3. Place polyethylene sheeting below area where caulking, sealants, and glazing compound is being removed, both inside and outside the building.
4. Using wet methods, remove caulking, sealants, and glazing compound in a manner which precludes the caulking from becoming friable.
5. Properly decontaminate all non-ACM materials in contact with the asbestos-containing caulking, sealants, and glazing compound, and dispose of as construction debris. All non-ACM materials in contact with the asbestos-containing window and door caulking, not properly decontaminated, shall be wrapped in two layers of six-mil polyethylene sheeting and disposed of as asbestos contaminated waste.
6. Properly wet and double bag all caulking, sealants, and glazing compound and associated debris, and all non-ACM materials contaminated with asbestos for disposal as ACM debris.
7. Using a HEPA vacuum clean all residual asbestos-containing window and door caulking remaining in the work area.

### 3.06 DISPOSAL OF ASBESTOS WASTE

- A. Waste removal procedure shall be done in accordance with all regulations as set forth by the agencies having authority to regulate.
- B. The Contractor shall provide proof that disposal sites for the waste materials have current and valid permits to receive asbestos waste at the time of the pre-construction meeting.
- C. Receipts shall be obtained by the Contractor from the dumping site(s) and submitted to the Engineer upon request for final payment.

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- D. Warning labels having permanent, waterproof print and adhesive shall be affixed to all bags, trucks, drums (lids and sides), and other containers used to store and/or transport asbestos-containing material. All labels shall comply with applicable DOT, EPA, and OSHA requirements.
- E. The Contractor shall be responsible for all necessary precautions to prevent pollution by spilling during the performance of services and shall assume full responsibility for all Contractor caused spills, which shall be cleaned up at the Contractor's expense.
- F. Temporary storage of asbestos waste on-site must be approved by the Engineer.

3.07 HOUSEKEEPING

- A. Throughout the work period, the Contractor shall maintain the building and site in a standard of cleanliness as specified throughout these Specifications.
- B. Contaminated disposable clothing, respirator filters, and other debris shall be bagged and sealed at the end of each workday.
- C. All asbestos generated by either removal or repair, shall be bagged immediately and not allowed to be left exposed at the end of each workday.
- D. Respirators shall be thoroughly cleaned at the end of each workday and stored for the next day's use.
- E. The Contractor shall retain all stored items in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection materials
- F. The Contractor shall not allow the accumulation of scrap, debris, waste material, and other items not required for completion of the work.
- G. Daily, and more often if necessary, the Contractor shall inspect the work areas and adjoining spaces, and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.
- H. The Contractor shall maintain the site in a neat and orderly condition at all times.

3.08 AIR MONITORING AND WORK AREA CLEARANCE BY ENGINEER

- A. Background (pre-testing) air and appropriate dust samples may be taken to represent conditions before the Contractor starts masking and sealing operations.
- B. During removal, area samples will be collected by the Engineer outside major openings in the containment: in the clean room, at other critical points outside the work areas, just outside the clean room, inside the contained work sites, and at HEPA exhaust locations. Contractor shall be responsible for all OSHA personal sampling.

- C. At completion of all asbestos removal work and prior to removing containment and engineering controls, the Engineer will conduct a final visual inspection of the work area. The area must be free and clear of any visible debris. At the option of the Engineer, the Engineer may obtain representative substrate samples to confirm complete removal of all asbestos. Substrates that may be sampled by the Engineer include, but are not limited to, concrete ceilings or floors from which mastics or glue dots were removed. The Engineer will analyze substrate samples by polarized light microscopy in accordance with EPA protocols. If trace amounts or greater of asbestos is detected in any one sample, or if visual debris is present, then the Engineer will not consider the asbestos removal work complete. The Contractor shall be required to re-clean the designated work site and then the Engineer will repeat the final inspection prior to conducting clearance air testing.
- D. Final clearance air samples will be collected inside the contained removal work area after the visual inspection has determined that the area is free and clear of any suspect material.
- E. Air shall be agitated by means of a small leaf blower prior to the test and kept agitated by means of a small electric fan. The results of air samples must be less than 0.010 fibers per cubic centimeter (f/cc) for PCM analysis or less than an average of 70 structures per square millimeter for Transmission Electron Microscopy (TEM) to be in compliance with clearance criteria as described in this Section, Massachusetts DOS regulations, and AHERA regulations. The first set of final clearance air tests for each removal area will be paid by the Owner. In the event that these air tests do not pass the clearance criteria, any subsequent air tests that need to be performed shall be paid for by the Contractor. If the Contractor fails to meet the criterion, the Contractor shall be required to re-clean the designated work site and then the Engineer will repeat the final air clearance testing. Cleaning and testing shall be repeated until the specified criterion is met.

### 3.09 WORK REVIEW

- A. The Engineer will review Contractor's work practices prior to the start of and periodically during asbestos related work and will report any noted violations of the requirements of this Section to the Contractor. If the Contractor fails to correct deficiencies in a timely manner, the Engineer will be notified in writing, and work may be stopped. The Engineer will review the containment structure and negative air conditions before work begins and after the Contractor Site Supervisor has given approval. Outside containment airborne fiber concentrations must not exceed 0.010 fibers/cc or pre-abatement levels, whichever is greater. If concentrations exceed this level, then work must be stopped, conditions reviewed as to the probable cause, and then corrected. A description of procedures regarding fiber concentrations greater than 0.010 fibers/cc outside the containment can be found above.

END OF SECTION

## SECTION 02090

### LEAD PAINT CONSIDERATIONS

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. The Attention is directed to the GENERAL REQUIREMENTS AND COVENANTS - DIVISION I, the SPECIAL PROVISIONS - DIVISIONS IIA and IIB, the SAMPLE CONTRACT FORMS – DIVISION IV, which are hereby made a part of this Specification Section.
- B. Examine all applicable Drawings and all Sections of the Specifications from requirements and provisions affecting the work of this section.

##### 1.02 DESCRIPTION OF WORK

- A. The work of this Section specifies minimum requirements for the disturbance, removal, containment, and disposal of lead-containing paint, building components coated with lead-containing paint, and associated waste generated as a result of paint removal activities as indicated in the Contract Documents. **Lead paint test results are attached to these specifications.** This work includes the following:
  - 1. Demolition of building components coated with lead containing paint. In general, removal of lead-containing paint from building components is not required prior to demolition unless otherwise indicated or as otherwise required by the Contractor's Lead Compliance Program.
- B. The procedures described herein shall apply to demolition of building components and/or to all paint removal work where a worker may be occupationally exposed to lead, as well as the disposal requirements of the paint building components and debris. The Contractor shall assume that any painted surface, for which representative test results are not otherwise available, to be coated with lead-containing paint. It shall be the Contractor's responsibility to protect workers performing under this Contract. This may require additional testing by the Contractor to verify lead content.
- C. The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State and local regulations pertaining to work practices, hauling and disposal of demolition debris and hazardous waste, protection of workers and visitors to the site, and persons occupying areas adjacent to the site. The Contractor shall hold the Owners Representative and Engineer harmless for failure to comply with any applicable work, hauling, disposal, safety, health or regulation on the part of himself, his workers or his subcontractors.
- D. The Contractor is required to ensure the protection of workers performing any work that will affect surfaces coated with lead paint as well as protecting the public and the environment from exposure to lead dust.

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- E. In general, if the amount of LCP in the demolition debris waste stream is relatively small, the dilution often results in passing TCLP testing. However, since there are many paints with lead TCLP testing may not be advisable. If the level of lead in the waste stream is not sufficiently diluted painted wood and other building materials (e.g. plaster) can be packaged and transported to other reprocessing or disposal facilities that are appropriately licensed to accept lead paint containing waste. The Owners Representative recommends choosing recycling over disposal and choosing licensed facilities that are most cost effective.
- F. Finally, the General Contractor (GC) should be made aware of the presence of lead paint testing results to satisfy the hazard communication requirements set forth by OSHA regulations. Specifically, contractors and subcontractors should be required to comply with OSHA regulations including 29 CFR 1926.62, *Lead Exposure in Construction: Interim Final Rule* and 29 CFR 1926.59, *Hazard Communication for the Construction Industry*.

### 1.03 RELATED WORK

- A. Section 02080 – Asbestos Abatement
- B. Section 02075 – Hazardous Building Materials

### 1.04 CODES AND STANDARDS

- A. All work shall conform to the standards set by applicable Federal, State and local laws, regulations, ordinances, and guidelines in such form in which they exist at the time of the work on the contract and as may be required by subsequent regulations.
- B. In addition to any detailed requirements of the Specification, the Contractor shall at his own cost and expense comply with all laws, ordinances, rules and regulations of Federal, State, Regional and Local Authorities regarding handling and storing of lead waste material.
- C. The following regulations and guidelines are cited for the information and guidance of the Contractor. The list below is not all-inclusive; the Contractor shall be responsible for a thorough knowledge and full implementation of all requirements for the removal, transport and disposal of lead-containing materials.
  - 1. U.S. Environmental Protection Agency 40 CFR Parts 260 – 272.
  - 2. Commonwealth of Massachusetts. 310 Code of Massachusetts Regulations (CMR) 19 and 30.
  - 3. U.S. Department of Transportation (DOT) Title 49 Code of Federal Regulation (CFR) Parts 100-177 and Parts 350-399. The latest versions shall apply.
  - 4. Federal Occupational Safety and Health Administration (OSHA) Title 29 CFR 1910 and 29 CFR 1926, including but not limited to:
    - (a) 29 CFR 1926.62 – Lead in Construction

- (b) 29 CFR 1910.134 – Respiratory Protection
- 5. American National Standards Institute (ANSI) Publications:
  - (a) Fundamentals Governing the Design and Operation of Local Exhaust Systems
  - (b) Practices for Respiratory Protection
- 6. National Institute of Occupational Safety and Health (NIOSH) Publications:
  - (a) Manual of Analytical Methods, 4<sup>th</sup> Ed.
- 7. Underwriters Laboratories, Inc. (UL) Fire Resistance Directory Publications:
  - (a) 586-77 (R 1982) Test Performance of High Efficiency Particulate, Air Filter Units.
- D. All regulations by the above and other governing agencies in their most current version are applicable throughout this project. It is the contractor's responsibility to know, understand, and abide by all such regulations and practices. Where there is a conflict between this Specification and the cited State, Federal, or local regulations, the more restrictive or stringent requirements shall prevail.

#### 1.05 DEFINITIONS

- A. Action Level: Employee exposure, without regard to the use of respirators to an airborne concentration of lead of 30 micrograms/cubic meter ( $\mu\text{g}/\text{m}^3$ ) calculated as an 8-hour time-weighted average (TWA).
- B. Area Monitoring: Sampling of lead concentrations within the work area and outside the work area that is representative of the airborne concentrations of lead.
- C. HEPA Filter Equipment: High efficiency particulate air (HEPA) filtered vacuuming or exhaust ventilation equipment with a UL 586 filter system. Filters shall be of 99.97 percent efficiency for retaining 0.3-micrometer diameter particles.
- D. Lead Paint: Paint, varnish, or stain that contains lead in excess of 0.5% lead by weight (paint chip sample analysis by AA) or  $>1.0 \text{ mg}/\text{cm}^2$  by XRF.
- E. Permissible Exposure Limit (PEL): 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) of air, based upon an 8-hour time-weighted average.
- F. Sample Location: Area or place where an air sample is collected.
- G. SSPC-SP6: Society for Protective Coatings/Surface Preparation - Commercial Blast Cleaning.
- H. Time Weighted Average (TWA): The TWA is an 8-hour time-weighted average for the test of the concentration of lead for worker exposure.
- I. Wet Cleaning: The process of removing lead contamination from building surfaces,

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equipment and other objects by using cloths, mops, or other cleaning tools, which have been dampened with water, and by afterwards disposing of these cleaning tools as, lead contaminated wastes.

- J. Work Area: A controlled-access work area that has plastic sheeting or other containment barriers erected to separate the trades and the public from entering.

#### 1.06 SUBMITTALS

- A. Contractor's Lead Compliance Program as required by 29 CFR 1926.62, including proposed worker training, respiratory protection program and medical monitoring for all employees throughout all phases of the job, including make, model and NIOSH approval numbers of respirators to be used; worker orientation plan; written description of all proposed procedures, methods, or equipment to be utilized, including those that may differ from the Contract Specifications. In all instances, Contractor must comply with all applicable federal, state and local regulations.
- B. Site specific work plan identifying specific work areas, engineering controls, procedures and methods, and proposed schedule to be used on project.
- C. Copies of all notifications, permits, applications, licenses and like documents required by Federal, State, or local regulations and this specification obtained or submitted in proper fashion.
- D. List of total number of supervisors and workers intended to be assigned to the project, including name and lead awareness qualifications.
- E. Copies of written medical opinions for each employee who may be occupationally exposed to lead as required by 29 CFR 1926.62 (j)(3)(v).
- F. Record of successful respirator fit testing performed by a qualified individual within the previous 12 months for each employee who may be occupationally exposed to lead or otherwise required to use respiratory protection.
- G. Material Safety Data Sheets on potentially hazardous materials to be used on the project
- H. Waste Disposal Plan which describes the waste stream and the disposal means (e.g., demolition debris, hazardous waste, landfill, recycle, etc.) and includes the name, address, and ID number of the proposed hazardous waste hauler, waste transfer route, and proposed disposal reclamation or treatment facility. Procedures for sampling and classifying the waste stream in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA) and the receiving facility shall also be included
- I. Post-Construction submittal package:
  - 1. Copies of waste manifests and receipts acknowledging disposal and recycling of all lead waste material from the project, showing delivery date, quantity, and appropriate signature of landfill's authorized representative,

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2. All personal monitoring results, and
3. All waste stream Toxic Characteristic Leaching Procedure (TCLP) testing results.

#### 1.07 SPECIAL CONSIDERATIONS

- A. Work Affected: In general, the following activities are minimum requirements of this Section and affect the renovation performed on the painted components:
  - B. No torch cutting, mechanical sanding or stripping, or abrasive methods of paint removal shall occur until the employer performs an employee exposure assessment as required under 29 CFR 1926.62 and determines actual employee exposure. The employer shall provide to employees performing these tasks with interim protection as follows and according to 29 CFR 1926.62:
    1. Appropriate respiratory protection,
    2. Appropriate personal protective clothing and equipment,
    3. Change areas,
    4. Hand washing facilities,
    5. Biological monitoring to consist of blood sampling and analysis for lead and zinc protoporphyrin levels, and
    6. Training as required regarding 29 CFR 1926.59, Hazard Communication; training as required regarding use of respirators; and training in accordance with 29 CFR 1926.21, Safety training and education.
- C. Workers shall be informed of the components to be impacted during renovation that have been identified as containing lead.
- D. Separation of Trades: Unprotected, untrained workers or trades shall not perform any related work within the same vicinity as work involving components identified with lead.

#### 1.08 REPORT OF FINDINGS

- A. The Owners Representative has conducted limited testing for lead paint on representative painted components in the building which indicated the presence in of lead in existing paints on building components. Results can be obtained from the Owners Representative. The testing conducting by the Owners Representative was not all inclusive of all building materials that may be impacted by the work. The Contractor shall assume that all paints impacted by the work contain lead unless testing by either the Owners Representative or the Contractor has determined otherwise.

A complete listing of the testing results can be found attached to these specifications.

The HUD<sup>1</sup> lead paint standard classifies lead-based paint (LBP) as paint having  $\geq 1.0$  mg/cm<sup>2</sup> as measured by the XRF or  $\geq 0.5\%$  of lead by weight as analyzed by Atomic Absorption. With respect to renovation and demolition work, OSHA defines an LCP as any paint containing detectable amounts of lead.

Lead paint (>0.5%) was detected in exterior paint on the horizontal and vertical trim (grey paint) throughout the building.

#### 1.09 FEES, PERMITS & LICENSES

- A. The Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or process in the performance of the work specified in this section. The Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Contractor shall hold the Owners Representative harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights. If the Specification requests the use of any product, design, invention, or process that requires a licensing, patent or royalty fee for use in the performance of the job, the Contractor shall be responsible for the fee or royalty fee and shall disclose the existence of such rights.
- B. Contractor shall be responsible for costs for all licensing requirements, where applicable and notification requirements, and all other fees related to the Contractor's ability to perform the work in this Section.
- C. Secure all necessary permits for work under this Section, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

#### 1.10 CLEAN UP

- A. Maintain the work site in a neat and orderly manner at all times, so as not to interrupt or infringe upon the work of other trades.
- B. Comply with all requirements for release of work areas as described in the project specification.
- C. It is the prerogative of the Engineer to inspect whenever deemed necessary and the Contractor is responsible for meeting and correcting any deficiencies discovered which do not meet the current applicable regulations and requirements of these specifications.

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<sup>1</sup> U.S. Department of Housing and Urban Development

1.11 COORDINATION

- A. Extend full cooperation to Engineer in all matters involving the use of the Owners Representative's facilities. At no time shall Contractor cause or allow to be caused conditions that may cause risk or hazard to the general public or conditions that might impair safe use of the facility. The use of the facility's electricity, water or like utilities by the Contractor shall be as specified in the General Conditions.
- B. Unless specifically authorized by the Owners Representative, the work of this project shall be conducted in accordance with the working hours agreed upon in the Contract.
- C. Inspections: The Engineer may perform visual inspections during the work of this section, as described below.
  - 1. During: Prior to the commencement of a proposed alternative method other than specified.
  - 2. Post Inspection: At the completion of work and final clean-up, prior to clearance or removal of any critical barriers from the work area and release to other trades.
  - 3. Waste Removal Inspection: Prior to removal of hazardous waste from the site, Engineer may inspect the quantity and type.

1.12 EMERGENCY PRECAUTIONS

- A. The Contractor shall establish emergency and fire exits from the work area.
- B. When an injury occurs, the Contractor shall stop work until the injured person has been removed from the work area.

1.13 DISPOSAL OF WASTE MATERIAL

- A. The Contractor shall comply with the Resource Conservation and Recovery ACT (RCRA) and with all applicable state and local regulations.
- B. Contractor shall be responsible for disposing of all waste determined by Toxicity Characteristic Leachate Procedure (TCLP) to be hazardous. If TCLP testing has not been performed, the Contractor shall be responsible and pay for testing the waste.
- C. Contractor shall comply with all EPA regulations.

1.14 AUTHORITY TO STOP WORK

- A. The Engineer has the authority to stop the work at any time it is determined that conditions are not within the specifications and applicable regulations. The stoppage of work shall continue until conditions have been corrected and corrective steps have been taken to the satisfaction of the Engineer. Standby time required to resolve violations shall be at the Contractor's expense and shall not be cause for extending the completion date.

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## **PART 2 - PRODUCTS**

### 2.01 MATERIALS

- A. All material and equipment proposed to be used on this project shall be subject to the acceptance of the Engineer.
1. Polyethylene sheeting, minimum thickness of six (6)-mil, fire retardant;
  2. Plastic bags, minimum thickness of six (6)-mil;
  3. High Quality Duct Tape;
  4. Lead Warning Signs, as described in OSHA;
  5. Spray adhesive, fire retardant;
  6. Personal Protective Equipment, NIOSH approved respirators and filters;
  7. HEPA vacuums;
  8. Trisodium-Phosphate (TSP), product data;
  9. Other materials, tools and equipment necessary for lead based paint abatement;
  10. Cloth Tarpaulins; and
  11. Chemical Strippers, where applicable, not containing methylene chloride and/or flammable materials

## **PART 3 - EXECUTION**

### 3.01 SCHEDULING

- A. The Contractor shall coordinate all scheduling with the Owners Representative. A schedule of work shall be submitted to the Owners Representative prior to contract performance.

### 3.02 IDENTIFICATION OF HAZARDS

- A. The contractor shall identify all work activities in which a worker may be occupationally exposed to lead.
- B. The Contractor shall initially determine if any worker may be exposed to lead above the action level.

### 3.03 BARRIERS AND ISOLATION AREAS

- A. Containment controls (including critical barriers, protective coverings, HEPA-filtered ventilation and decontamination facilities) will be required for the paint removal work. The degree of containment shall be appropriate for the anticipated levels of airborne lead dust. The lower the level of airborne lead, the lesser the requirements necessary to control lead emissions at the job site.
- B. Work Area Isolation
1. The Contractor shall isolate work areas for the duration of work by completely sealing off all openings in the work area. Isolation shall be accomplished by constructing critical barriers where necessary around the work area perimeter. The work area shall be sealed airtight to the greatest extent possible.
  2. Shut down and disconnect all electrical power to the work area so that there is no possibility of reactivation and electrical shock during the work. Provide temporary power and lighting (with ground fault circuit interrupt protection) to the work areas and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements, and OSHA requirements for temporary lighting in the environment normal to renovation areas.
- C. All work areas involving lead shall remain isolated from all other trades on the project and remain inaccessible to the public. Contractor shall monitor the access to the renovation work areas. The below listed items are required to control the generation of lead dust during renovation activities. The Contractor is ultimately responsible for cleaning all generated dust and paint debris from renovation operations and must maintain work areas free from lead dust generated from renovation activities.
1. Signs shall be posted at all approaches to the work area warning that work involving lead is being conducted in the vicinity. Signs shall be in bold lettering not smaller than two inches tall.
  2. Barriers shall not be removed until the work areas are thoroughly cleaned.
- D. Exterior work area isolation for paint removal using hand scraping methods or for removal of painted components shall include at a minimum yellow caution barrier tape at a sufficient enough distance to keep bystanders out of the immediate area. Appropriate signage shall be posted around the work area. The ground shall be covered a minimum of 12 feet out from the foundation with tarps.
- E. Abrasive blasting or other abrasive paint removal techniques will not be allowed on exterior surfaces without the use of full enclosures and other appropriate engineering controls and procedures. The Contractor shall submit containment plans and proposed engineering controls to the Engineer.

### 3.04 PAINT REMOVAL

- A. No torch cutting, mechanical sanding or stripping, or abrasive methods of paint

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removal shall occur until the employer performs an employee exposure assessment as required under 29 CFR 1926.62 and determines actual employee exposure. The employer shall provide to employees performing these tasks with interim protection as follows and according to 29 CFR 1926.62:

1. Appropriate respiratory protection,
2. Appropriate personal protective clothing and equipment,
3. Change areas,
4. Hand washing facilities,
5. Biological monitoring to consist of blood sampling and analysis for lead and zinc protoporphyrin levels, and
6. Training as required regarding 29 CFR 1926.59, Hazard Communication; training as required regarding use of respirators; and training in accordance with 29 CFR 1926.21, Safety training and education.

- B. All paint chips, slurry, waste, and debris generated from paint removal shall be removed immediately upon generation during the work.
- C. Paint removal shall occur only when proper barriers and protection are in place and approval has been given regarding barrier set-up and methods of paint removal.

### 3.05 PERSONAL SAMPLING - CONTRACTOR

- A. Perform personnel air sampling during all renovation work to determine worker exposure limits. The results of such sampling shall be posted, provided to individual workers, and submitted to Engineer as described herein.
- B. Air sampling results shall be transmitted to the Engineer and individual workers available at the job site in written form no more than forty-eight (48) hours after the completion of a sampling cycle. The reporting document shall list each sample's result, sampling time and date, personnel monitored and their social security numbers, flow rate, sample duration, sample yield, cassette size, and analyst's name and company, and shall include an interpretation of the results. Air sample analysis results will be reported in micrograms/cubic meter ( $\mu\text{g}/\text{m}^3$ )
- C. The Contractor's testing lab shall be AIHA accredited for analysis of metals. Contractor shall submit for Engineer's review and acceptance the name and address of the laboratory, certification(s) of AIHA accreditation for metal analysis, listing of relevant experience in air lead analysis, and presentation of a documented Quality Assurance and Quality Control program
- D. Air monitoring frequency will be established in accordance with the requirements set forth in 29 CFR 1926.62.

### 3.06 WORK PROCEDURES

- A. The contractor shall initiate, and continue, sufficient engineering and work practice controls, as described in the Contractor's Lead Compliance Program, to reduce and maintain worker exposures to lead at or below the Action Level
- B. The following work practices are specifically required by these specifications:
  - 1. All persons except those directly involved in the work shall be excluded from the work area. Physical barriers shall be used, where necessary, to limit access to the work area for the duration of the demolition operations.
  - 2. Provide hand-washing facilities and ensure that all workers thoroughly wash their hands and face upon exiting the work area.
  - 3. All equipment used by the workers inside the work area shall be either left in the work area or thoroughly decontaminated before being removed from the area. Extra work clothing (in addition to the disposable suits supplied by the Contractor) shall be left in the clean area until the completion of work in that area. The clean area shall be cleaned of all visible debris and disposable materials daily.
  - 4. Under no circumstances shall workers or supervisory personnel eat, drink, smoke, chew gum, or chew tobacco in the work area.

### 3.07 STORAGE OF WASTE

- A. Use of waste containers on site shall be controlled under the following requirements:
  - 1. Wastes shall be handled, packaged, transported and disposed of in accordance with applicable federal and state regulations.
  - 2. Location of waste containers on site shall be coordinated with the Engineer.
  - 3. Waste containers shall be lined with two layers of six-mil polyethylene sheeting, be solid enclosed containers, locked and sealed at all times. This requirement applies to waste classified as hazardous based on TCLP testing.
- B. Contractor shall comply with all federal, state, and local regulations and ordinances regarding lead waste and recyclable storage.

END OF SECTION