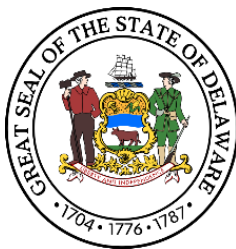


HARVARD

Environmental, Inc.

760 Pulaski Highway
Bear, Delaware 19701
302-326-2333



**State of Delaware
Division of Facilities Management
New Forensics Science Building
Asbestos Abatement Project
Asbestos Abatement Specification**

3000 Newport Gap Pike
Wilmington, Delaware 19808

Harvard Environmental Project No. 26889

State of Delaware Project # MC1002001172

January 27th, 2026

Prepared For:

Robert L. Purnell III
D&M - Indoor Air Quality Program Manager
Nasir Army
121 MLK Jr. BLVD.
Dover, Delaware 19901

Prepared By:

Harvard Environmental Inc.
760 Pulaski Highway
Bear, Delaware 19701

Approved
Facilities Management
2/10/26

Robert L. Purnell III Date



New Forensics Science Building Asbestos Abatement Project

STATE OF DELAWARE
DIVISION OF FACILITIES MANAGEMENT
OFFICE OF MANAGEMENT AND BUDGET

DATED: January 27th, 2026

SPECIFICATION: PROJECT #26889

State of Delaware Project # MC1002001172

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New Forensics Science Building Asbestos Abatement Project

STATE OF DELAWARE
DIVISION OF FACILITIES MANAGEMENT
OFFICE OF MANAGEMENT AND BUDGET

DATED: January 27th, 2026
SPECIFICATION: PROJECT #26889

State of Delaware Project # MC1002001172

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**State of Delaware
Division of Facilities Management
New Forensics Science Building - Asbestos Abatement Project
Asbestos Abatement Specification**

3000 Newport Gap Pike
Wilmington, Delaware 19808

Harvard Environmental Project No. 26889

State of Delaware Project # MC1002001172

Project Designer Signature: [Signature] Date: January 27, 2026

Printed Name: Wesley J.T. Morrison Certification: ACC-0525-10-006

ENGINEER'S STATEMENT

The attached statement has been prepared to the best of my knowledge from physical observations to the extent of engineering discipline and from the data supplied by the Owner. It is the responsibility of the contractor to inspect all existing conditions prior to commencement of the work and to comply with all current Local, State, and Federal codes and environmental regulations during the execution of the work to be performed associated with this project.

Professional Engineer Signature: [Signature] Date: 1/28/2026

Printed Name: Brandon M. Haglid



FACILITIES MANAGEMENT APPROVAL

This is to certify that the State of Delaware, Department of Facilities Management, has reviewed this specification and approves its use for the work described and is hereby approved by the Department for use in completing the work.

IAV DELAWARE CODE, TITLE 16, CHAPTER 78, PARAGRAPH 7805(1)

Signature: [Signature] Date: 2/10/26

Printed Name: Robert Purnell III
State of Delaware, Division of Facilities Management



New Forensics Science Building Asbestos Abatement Project

STATE OF DELAWARE
DIVISION OF FACILITIES MANAGEMENT
OFFICE OF MANAGEMENT AND BUDGET

DATED: February 2nd, 2026
SPECIFICATION: PROJECT #26889

State of Delaware Project # MC1002001172

1/27/26

Project Designer _____ Date: _____

Certification Number: ACC – 0525 - 10 - 006

Printed Name: Wesley J.T. Morrison

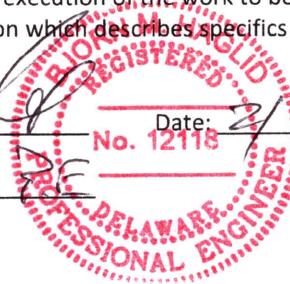
ENGINEERS STATEMENT

The attached statement has been prepared to the best of my knowledge from physical observations to the extent of engineering discipline and from the data supplied by the owner. It is the responsibility of the contractor to inspect all existing conditions prior to commencement of the work and to comply with all current Local, State, and Federal codes and Environmental regulations during the execution of the work to be performed in associated with this project. Development and approvals of a specification which describes specifics associated with the work are required for all work under this specification.

Professional Engineer Signature: _____

Date: _____

Printed Name: _____



DIVISION OF FACILITIES MANAGEMENT APPROVALS

This is to certify That the State of Delaware Facilities Management, has reviewed this specification and approves its use as the Specification is reviewed and approved by the Department prior to initiation of work.

BY THE DELAWARE CODE, TITLE 16 CHAPTER 78, PARAGRAPH 7805(1)

Signature _____ Date: 2/10/28

Printed Name: Robert Purnell III

State of Delaware, Division of Facilities Management

SECTION 00 11 16

INVITATION TO BID

OMB/DFM Contract No. MC1002001172 Project Name: **New Forensics Science Building Asbestos Abatement Project** will be received by the State of Delaware, Office of Management and Budget, Division of Facilities Management, by way of the Bonfire Portal at <https://DFM.bonfirehub.com> until **1 p.m. Local time on April 8, 2026.** Bidder bears the risk of late submission.

Bids will be opened and read aloud at **2 p.m. local time on April 8th, 2026,** at the Haslet Armory, 122 Martin Luther King Blvd. S., Dover, DE 19901.

The project involves asbestos abatement associated with New Forensics Science Building renovations and demolition.

A **MANDATORY** Pre-Bid Meeting will be held on **March 24th, 2026, at 10 a.m. local time at 3000 Newport Gap Pike, Wilmington, DE 19808,** for the purpose of answering questions. Attendees are to check in with Harvard Environmental onsite personnel. Representatives of each party to any Joint Venture must attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**

Contract documents may be obtained at 760 Pulaski Highway Bear, DE 19701 the office of Harvard Environmental, upon receipt of \$125 per set/non-refundable. Checks are to be made payable to "Harvard Environmental."

Bidders will not be subject to discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity or national origin in consideration of this award, and Minority Business Enterprises, Disadvantaged Business Enterprises, Women-Owned Business Enterprises and Veteran-Owned Business Enterprises will be afforded full opportunity to submit bids on this contract. Each bid must be accompanied by a bid security equivalent to ten percent of the bid amount and all additive alternates. The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract. The Owner reserves the right to reject any or all bids and to waive any informalities therein. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days' notice by certified delivery, facsimile machine or other electronic means to those bidders' receiving plans.

END OF SECTION



**New Forensics Science Building Asbestos Abatement Project
3000 Newport Gap Pike Newport, DE 19808
HARVARD #26889**

State of Delaware Project # MC1002001172

BID FORM

For Bids Due: (April 8th 2026 at 1p.m.)

**To: State of Delaware - Division of Facilities Management
Haslet Armory - 122 MLK Jr. Blvd. Dover, DE 19901
at <https://dfm.bonfirehub.com/>**

Name of Bidder: _____

Delaware Business License No.: _____ **Taxpayer ID No.:** _____

(A copy of Bidder's Delaware Business License must be attached to this form.)

(Other License Nos.): _____

Phone No.: () _____ - _____ **Fax No.:** () _____ - _____

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

\$ _____
(\$ _____)

ALTERNATES

Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossed-out part that does not apply.

ALTERNATE No. 1: _____ **(BRIEF DESCRIPTION)**

Add/Deduct: _____
(\$ _____)

ALTERNATE No. 2: _____ **(BRIEF DESCRIPTION)**

Add/Deduct: _____
(\$ _____)



New Forensics Science Building Asbestos Abatement Project
3000 Newport Gap Pike Newport, DE 19808
HARVARD #26889
State of Delaware Project # MC1002001172

BID FORM

Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

	<u>DEDUCT</u>	<u>ADD</u>
UNIT PRICE No. 1: <u>Pipe Insulation</u>	\$ _____	\$ _____
UNIT PRICE No. 2: <u>Floor Tile</u>	\$ _____	\$ _____
UNIT PRICE No. 3: <u>Floor Tile Mastic</u>	\$ _____	\$ _____
UNIT PRICE No. 4: <u>Cement Board Panels</u>	\$ _____	\$ _____
UNIT PRICE No. 5: <u>Fire Doors</u>	\$ _____	\$ _____
UNIT PRICE No. 5: <u>Pipe Fittings</u>	\$ _____	\$ _____



BID FORM

I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____ calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

(State of Corporation)

Business Address: _____

Witness: _____ By: _____
(Authorized Signature)

(SEAL) _____
(Title)

Date: _____

ATTACHMENTS

- Sub-Contractor List
- Non-Collusion Statement
- Affidavit(s) of Employee Drug Testing Program
- Bid Security
- (Others as Required by Project Manuals)



New Forensics Science Building Asbestos Abatement Project
3000 Newport Gap Pike Newport, DE 19808
HARVARD #26889
State of Delaware Project # MC1002001172
BID FORM

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. To provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.** This form must be filled out completely with no additions or deletions. **Note that all subcontractors listed below must have a signed Affidavit of Employee Drug Testing Program included with this bid.**

<u>Subcontractor Category</u>	<u>Subcontractor</u>	<u>Address (City & State)</u>	<u>Subcontractors taxpayer ID # or Delaware Business license #</u>
1.			
2.			
3.			
4.			



**New Forensics Science Building Asbestos Abatement Project
3000 Newport Gap Pike Newport, DE 19808
HARVARD #26889**

State of Delaware Project # MC1002001172

BID FORM

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date April 8th 2026. *(to the Office of Management and Budget, Division of Facilities Management).*

All the terms and conditions of HARVARD #26889 have been thoroughly examined and are understood.

NAME OF BIDDER:

**AUTHORIZED REPRESENTATIVE
(TYPED):**

**AUTHORIZED REPRESENTATIVE
(SIGNATURE):**

TITLE:

ADDRESS OF BIDDER:

E-MAIL:

PHONE NUMBER:

worn to and subscribed before me this _____ day of _____ 20____.

My Commission expires _____ NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.



BID TABULATION SHEET

ALL BIDS MUST BE SUBMITTED IN TRIPPLICATE AND IN THIS ORDER

PROJECT NAME: New Forensics Science Building Asbestos Abatement Project **PROJECT #**26889 **BID OPENING DATE:** April 8th 2026 at 2 p.m.

Contractor									
Base Bid									
Alternate #1									
Unit Prices									
Calendar Days									
Working Days									
Non-Collusion Statement									
Addenda Received									
Subcontractor Listing									
Bid Bond									
DE Business License									
Insurance									
Referenced Equipment									
Contractor Certificate									
Citations									



**AFFIDAVIT
OF
EMPLOYEE DRUG TESTING PROGRAM**

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects require that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.



STATE OF DELAWARE
Division of Facilities Management – Office of Management and Budget
BID BOND
TO ACCOMPANY PROPOSAL

KNOW ALL MEN BY THESE PRESENTS That: _____
_____ of _____ in the County of _____
_____ and State of _____ as **Principal**, and _____
_____ of _____ in the County of _____ and State
of _____ as **Surety**, legally authorized to do business in the State of Delaware ("**State**"), are
held and firmly unto the **State** in the sum of _____
_____ Dollars (\$ _____), or 10% percent not to exceed _____
_____ Dollars (\$ _____) of amount of bid
on Contract No. _____, to be paid to the **State** for the use and benefit of _____
_____ (*insert State agency name*) for which payment well and truly to be
made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly
and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bonded **Principal** who has
submitted to the _____ (*insert State agency name*) a certain
proposal to enter into this contract for the furnishing of certain material and/or services within the **State**,
shall be awarded this Contract, and if said **Principal** shall well and truly enter into and execute this Contract
as may be required by the terms of this Contract and approved by the _____
_____ (*insert State agency name*) this Contract to be entered into within twenty days after the
date of official notice of the award thereof in accordance with the terms of said proposal, then this
obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____ seal and dated this _____ day of _____ in the year of our Lord two
thousand and _____ (20____).

SEALED, AND DELIVERED IN THE
Presence of

Corporate
Seal

By:

Name of Bidder (Organization)

Authorized Signature

Attest _____

Title

Name of Surety

Witness: _____

By:

Title

BID BOND

00 43 13



STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET
DIVISION OF FACILITIES MANAGEMENT

PERFORMANCE BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal (**Principal**), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety (**Surety**), are held and firmly bound unto the _____ (**Owner**) (*insert State agency name*), in the amount of _____ (\$_____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrations, successors and assigns, jointly and severally, for and in the whole, firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20__

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly provide and furnish all materials, appliances and tools and perform all the work required under and pursuant to the terms and conditions of the Contract and the Contract Documents (as defined in the Contract) or any changes or modifications thereto made as therein provided, shall make good and reimburse **Owner** sufficient funds to pay the costs of completing the Contract that **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, hereby stipulates and agrees, if requested to do so by **Owner**, to fully perform and complete the work to be performed under the Contract pursuant to the terms, conditions and covenants thereof, if for any cause **Principal** fails or neglects to so fully perform and complete such work.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required thereon, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omissions or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

IN WITNESS WHEREOF, **Principal** and **Surety** have hereunto set their hand and seals, and such of them as are corporations have caused their corporate seal to be hereto affixed and these presents to be signed by their duly authorized officers, the day and year first above written.

PRINCIPAL

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____ (SEAL)

Name:

Title:

SURETY

Name: _____

Witness or Attest: Address: _____

Name:

(Corporate Seal)

By: _____ (SEAL)

Name:

Title:



STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET
DIVISION OF FACILITIES MANAGEMENT

New Forensics Science Building Asbestos Abatement Project

PAYMENT BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS, that we, _____, as principal ("**Principal**"), and _____, a _____ corporation, legally authorized to do business in the State of Delaware, as surety ("**Surety**"), are held and firmly bound unto the _____ ("**Owner**") (*insert State agency name*), in the amount of _____ (\$ _____), to be paid to **Owner**, for which payment well and truly to be made, we do bind ourselves, our and each and every of our heirs, executors, administrators, successors and assigns, jointly and severally, for and in the whole firmly by these presents.

Sealed with our seals and dated this _____ day of _____, 20__.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH, that if **Principal**, who has been awarded by **Owner** that certain contract known as Contract No. _____ dated the _____ day of _____, 20__ (the "Contract"), which Contract is incorporated herein by reference, shall well and truly pay all and every person furnishing materials or performing labor or service in and about the performance of the work under the Contract, all and every sums of money due him, her, them or any of them, for all such materials, labor and service for which **Principal** is liable, shall make good and reimburse **Owner** sufficient funds to pay such costs in the completion of the Contract as **Owner** may sustain by reason of any failure or default on the part of **Principal**, and shall also indemnify and save harmless **Owner** from all costs, damages and expenses arising out of or by reason of the performance of the Contract and for as long as provided by the Contract; then this obligation shall be void, otherwise to be and remain in full force and effect.

Surety, for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of **Surety** and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition or change in or to the Contract or the work to be performed thereunder, or by any payment thereunder before the time required thereon, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any work to be performed or any monies due or to become due thereunder; and **Surety** hereby waives notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to **Surety** as though done or omitted to be done by or in relation to **Principal**.

Surety hereby stipulates and agrees that no modifications, omission or additions in or to the terms of the Contract shall in any way whatsoever affect the obligation of **Surety** and its bond.

Any proceeding, legal or equitable, under this Bond may be brought in any court of competent jurisdiction in the State of Delaware. Notices to **Surety** or Contractor may be mailed or delivered to them at their respective addresses shown below.

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY	ASBESTOS CONTENT	ENCLOSURE TYPE	QA CRITERIA
1912 Building (Drawings 1-4)	Wall and Ceiling Plaster	48,811 SF	3% Chrysotile Asbestos	Full Enclosure under negative pressure	TEM and Visual Inspection
1912 Building (Drawings 1)	12 x 12 Floor Tile "Tan"	40 SF	5% Chrysotile Asbestos	Full Enclosure under negative pressure	TEM and Visual Inspection
1912 Building (Drawings 1)	9x9 Floor Tile "Green"	40 SF	6% Chrysotile Asbestos	Full Enclosure under negative pressure	TEM and Visual Inspection
1912 Building (Drawings 1)	Flue Packing	2 SF	4% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1,2,3)	Pipe Insulation "Air Cell"	69 LF	8% Chrysotile	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Pipe Fitting	3 EA	PACM	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Cement Board Paneling	3,930 SF	65% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Joint Compound	14,070	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawing 2)	Lab Stone Countertop	184 SF	20% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawing 2)	12x12 Floor Tile – White w/ Blue Streaks	385 SF	2% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Cove Base Mastic assoc. w/Cove Base Materials	2,811 LF	4% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	9x9 Floor Tile – Tan	1,382 SF	8% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	9x9 Floor Tile – Gray	1,704 SF	7% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Floor Tile Mastic	5,116	4% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawing 3)	Caulking assoc. w/ Cement Board Paneling	40 LF	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-2)	Door Caulk	128 LF	2% Chrysotile Asbestos	Regulated Area	Visual Inspection
Addition Building (Drawings 5-10)	Floor Tile Mastic	15,397 SF	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5,6,7,9)	Sink Undercoat - White	10 EA	7% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection

Addition Building, Room 419 (Drawing 9)	Sink Undercoat - Black	1 EA	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Room 047B (Drawing 5)	9x9 Floor Tile - Beige	10 SF	10% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Boiler Mud Packing	1,000 SF	15% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Gasket assoc. w/ Fire Suppression System	75 EA	40% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Boiler & Interior Materials	2 EA	PACM	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Condenser Tank Insulation	2 EA	PACM	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5,6,7,9)	Pipe Insulation "Air Cell"	744 LF	60% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Rooms 012 and 020 (Drawing 5)	Penetration Packing	22 SF	10% Amosite Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5,6,9)	Pipe Insulation "MAG"	34 LF	10% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5-10)	Fire Door	79 EA	15% Amosite, 8% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5-10)	Floor Tile Mastic	24,716 SF	2% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 7,8,9)	Window Glaze, Stairwell Windows	3 EA	3% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Room 503 (Drawing 10)	Pipe Fitting	2 EA	2% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5-10)	Duct Seam Mastic – Tan	4,038 LF	2% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Roof H2 (Drawing 11)	Louver Caulk	30 LF	4% Chrysotile Asbestos	Regulated Area	Visual Inspection
Addition Building, Roof H (Drawing 11)	Building Seam Caulk	20 LF	6% Chrysotile Asbestos	Regulated Area	Visual Inspection

Addition Building (Drawings 5-6)	Door Caulk	112 LF	3% Chrysotile Asbestos	Regulated Area	Visual Inspection
Addition Building (Exterior)	Expansion Joint Caulk	30 LF	2% Chrysotile Asbestos	Regulated Area	Visual Inspection
Garage (Drawing 12)	Window Glaze	8 EA	3% Chrysotile Asbestos	Regulated Area	Visual Inspection
Garage (Drawing 12)	Cementitious Panels	300 SF	20% Chrysotile Asbestos	Full Enclosure under Negative Pressure	NM and Visual Inspection

NOT FOR BIDDING PURPOSES



INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

1. DEFINITIONS
2. BIDDER'S REPRESENTATION
3. BIDDING DOCUMENTS
4. BIDDING PROCEDURES
5. CONSIDERATION OF BIDS
6. POST-BID INFORMATION
7. PERFORMANCE BOND AND PAYMENT BOND
8. FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR



ARTICLE 1: GENERAL

1.1 DEFINITIONS

1.1.1 Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

1.2 STATE: The State of Delaware.

1.3 AGENCY: Contracting State Agency as noted on cover sheet.

1.4 DESIGNATED OFFICIAL: The agent authorized to act for the Agency.

1.5 BIDDING DOCUMENTS: Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement for Bid, Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the Bid Form (including the Non-collusion Statement), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, as well as the Drawings, Specifications (Project Manual) and all Addenda issued prior to execution of the Contract.

1.6 CONTRACT DOCUMENTS: The Contract Documents consist of the Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the form of agreement between the Owner and the Contractor, Drawings (if any), Specifications (Project Manual), and all addenda.

1.7 AGREEMENT: The form of the Agreement shall be AIA Document A101, Standard Form of Agreement between Owner and Contractor where the basis of payment is a STIPULATED SUM. In the case of conflict between the Instructions contained therein and the General Requirements herein, these General Requirements shall prevail.

1.8 GENERAL REQUIREMENTS (or CONDITIONS): General Requirements (or conditions) are instructions pertaining to the Bidding Documents and to contracts in general. They contain, in summary, requirements of laws of the State; policies of the Agency and instructions to bidders.

1.9 SPECIAL PROVISIONS: Special Provisions are specific conditions or requirements peculiar to the bidding documents and to the contract under consideration and are supplemental to the General Requirements. Should the Special Provisions conflict with the General Requirements, the Special Provisions shall prevail.

1.10 ADDENDA: Written or graphic instruments issued by the Owner/Architect prior to the execution of the contract which modifies or interprets the Bidding Documents by additions, deletions, clarifications or corrections.

1.11 BIDDER OR VENDOR: A person or entity who formally submits a Bid for the material or Work contemplated, acting directly or through a duly authorized representative who meets the requirements set forth in the Bidding Documents.

1.12 SUB-BIDDER: A person or entity who submits a Bid to a Bidder for materials or labor, or both for a portion of the Work.

1.13 BID: A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.



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- 1.14 BASE BID: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids (if any are required to be stated in the bid).
- 1.15 ALTERNATE BID (or ALTERNATE): An amount stated in the Bid, where applicable, to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.
- 1.16 UNIT PRICE: An amount stated in the Bid, where applicable, as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.
- 1.17 SURETY: The corporate body which is bound with and for the Contractor, or which is liable, and which engages to be responsible for the Contractor's payments of all debts pertaining to and for his acceptable performance of the Work for which he has contracted.
- 1.18 BIDDER'S DEPOSIT: The security designated in the Bid to be furnished by the Bidder as a guaranty of good faith to enter a contract with the Agency if the Work to be performed or the material or equipment to be furnished is awarded to him.
- 1.19 CONTRACT: The written agreement covering the furnishing and delivery of material or work to be performed.
- 1.20 CONTRACTOR: Any individual, firm or corporation with whom a contract is made by the Agency.
- 1.21 SUBCONTRACTOR: An individual, partnership or corporation which has a direct contract with a contractor to furnish labor and materials at the job site, or to perform construction labor and furnish material in connection with such labor at the job site.
- 1.22 CONTRACT BOND: The approved form of security furnished by the contractor and his surety as a guaranty of good faith on the part of the contractor to execute the work in accordance with the terms of the contract.

ARTICLE 2: BIDDERS REPRESENTATIONS

- 2.1 PRE-BID MEETING
- 2.1.1 A pre-bid meeting for this project will be held at the time and place designated. Attendance at this meeting is a pre-requisite for submitting a Bid, unless this requirement is specifically waived elsewhere in the Bid Documents.
- 2.2 By submitting a Bid, the Bidder represents that:
- 2.2.1 The Bidder has read and understands the Bidding Documents and that the Bid is made in accordance therewith.
- 2.2.2 The Bidder has visited the site, become familiar with existing conditions under which the Work is to be performed, and has correlated the Bidder's his personal observations with the requirements of the proposed Contract Documents.
- 2.2.3 The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.



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2.3 JOINT VENTURE REQUIREMENTS

- 2.3.1 For Public Works Contracts, each Joint Venturer shall be qualified and capable of completing the Work with their own forces.
- 2.3.2 Included with the Bid submission, and as a requirement to bid, a copy of the executed Joint Venture Agreement shall be submitted and signed by all Joint Venturers involved.
- 2.3.3 All required Bid Bonds, Performance Bonds, Material and Labor Payment Bonds must be executed by both Joint Venturers and be placed in both of their names.
- 2.3.4 All required insurance certificates shall name both Joint Venturers.
- 2.3.5 Both Joint Venturers shall sign the Bid Form and shall submit a copy of a valid Delaware Business License with their Bid.
- 2.3.6 Both Joint Venturers shall include their Federal E.I. Number with the Bid.
- 2.3.7 In the event of a mandatory Pre-bid Meeting, each Joint Venturer shall have a representative in attendance.
- 2.3.8 Due to exceptional circumstances and for good cause shown, one or more of these provisions may be waived at the discretion of the State.

2.4 ASSIGNMENT OF ANTITRUST CLAIMS

- 2.4.1 As consideration for the award and execution by the Owner of this contract, the Contractor hereby grants, conveys, sells, assigns and transfers to the State of Delaware all of its right, title and interests in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Owner pursuant to this contract.

ARTICLE 3: BIDDING DOCUMENTS

3.1 COPIES OF BID DOCUMENTS

- 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the Architectural/Engineering firm designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein.
- 3.1.2 Bidders shall use complete sets of Bidding Documents for preparation of Bids. The issuing Agency nor the Architectural/Engineering firm assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.1.3 Any errors, inconsistencies or omissions discovered shall be reported to the Architectural/Engineering firm immediately.
- 3.1.4 The Agency and Architectural/Engineering firm may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

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3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

- 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall report any errors, inconsistencies, or ambiguities discovered to the Architectural/Engineering firm.
- 3.2.2 Bidders or Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Architectural/Engineering firm at least seven days prior to the date for receipt of Bids. Interpretations, corrections and changes to the Bidding Documents will be made by written Addendum. Interpretations, corrections, or changes to the Bidding Documents made in any other manner shall not be binding.
- 3.2.3 The apparent silence of the specifications as to any detail, or the apparent omission from it of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first quality are to be used. Proof of specification compliance will be the responsibility of the Bidder.
- 3.2.4 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all permits, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.
- 3.2.5 The Owner will bear the costs for all impact and user fees associated with the project.

3.3 SUBSTITUTIONS

- 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of quality, required function, dimension, and appearance to be met by any proposed substitution. The specification of a particular manufacturer or model number is not intended to be proprietary in any way. Substitutions of products for those named will be considered, providing that the Vendor certifies that the function, quality, and performance characteristics of the material offered is equal or superior to that specified. It shall be the Bidder's responsibility to assure that the proposed substitution will not affect the intent of the design, and to make any installation modifications required to accommodate the substitution.
- 3.3.2 Requests for substitutions shall be made in writing to the Architect at least ten days prior to the date of the Bid Opening. Such requests shall include a complete description of the proposed substitution, drawings, performance and test data, explanation of required installation modifications due to the substitution, and any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architectural/Engineering firm decision of approval or disapproval shall be final. The Architectural/Engineering firm is to notify Owner prior to any approvals.
- 3.3.3 If the Architectural/Engineering firm approves a substitution prior to the receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding.
- 3.3.4 The Architectural/Engineering firm shall have no obligation to consider any substitutions after the Contract award.

3.4 ADDENDA



- 3.4.1 Addenda will be mailed or delivered to all who are known by the Architectural/Engineering firm to have received a complete set of the Bidding Documents.

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- 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
- 3.4.3 No Addenda will be issued later than 4 days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which extends the time or changes the location for the opening of bids.
- 3.4.4 Each bidder shall ascertain prior to submitting his Bid that they have received all Addenda issued and shall acknowledge their receipt in their Bid in the appropriate space. Not acknowledging an issued Addenda could be grounds for determining a bid to be non-responsive.

ARTICLE 4: BIDDING PROCEDURES

4.1 PREPARATION OF BIDS

- 4.1.1 Submit the bids on the Bid Forms included with the Bidding Documents.
- 4.1.2 Submit the original Bid Form for each bid. Bid Forms may be removed from the project manual for this purpose.
- 4.1.3 Execute all blanks on the Bid Form in a non-erasable medium (typewriter or manually in ink).
- 4.1.4 Where so indicated by the makeup on the Bid Form, express sums in both words and figures, in case of discrepancy between the two, the written amount shall govern.
- 4.1.5 Interlineations, alterations or erasures must be initialed by the signer of the Bid.
- 4.1.6 BID ALL REQUESTED ALTERNATES AND UNIT PRICES, IF ANY. If there is no change in the Base Bid for an Alternate, enter "No change". The Contractor is responsible for verifying that they have received all addenda issued during the bidding period. Work required by Addenda shall automatically become part of the contract.
- 4.1.7 Make no additional stipulations on the Bid Form and do not qualify the Bid in any other manner.
- 4.1.8 Each copy of the Bid shall include the legal name of the Bidder and a statement whether the Bidder is a sole proprietor, a partnership, a corporation, or any legal entity, and each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current Power of Attorney attached, certifying agent's authority to bind the Bidder.
- 4.1.9 Bidder shall complete the Non-Collusion Statement form included with the Bid Forms and include it with their Bid.
- 4.1.10 In the construction of all Public Works projects for the State of Delaware or any agency thereof, preference in employment of laborers, workers or mechanics shall be given to bona fide legal citizens of the State who have established citizenship by residence of at least 90 days in the State.
- 4.1.11 Each bidder shall include in their bid a copy of a valid Delaware Business License.
- 4.1.12 Each bidder shall include signed Affidavit(s) for the Bidder and each listed Subcontractor certifying compliance with OMB Regulation 4104- "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects." "Large Public Works" is based



upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

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4.2 BID SECURITY

4.2.1 All bids shall be accompanied by a deposit of either a good and sufficient bond to the agency for the benefit of the agency, with corporate surety authorized to do business in this State, the form of the bond and the surety to be approved by the agency, or a security of the bidder assigned to the agency, for a sum equal to at least 10% of the bid plus all add alternates, or in lieu of the bid bond a security deposit in the form of a certified check, bank treasurer's check, cashier's check, money order, or other prior approved secured deposit assigned to the State. The bid bond need not be for a specific sum but may be stated to be for a sum equal to 10% of the bid plus all add alternates to which it relates and not to exceed a certain stated sum, if said sum is equal to at least 10% of the bid. The Bid Bond form used shall be the standard OMB form (attached).

4.2.2 The Agency has the right to retain the bid security of Bidders to whom an award is being considered until either a formal contract has been executed, and bond have been furnished, or the specified time has elapsed so the Bids may be withdrawn, or all Bids have been rejected.

4.2.3 In the event of any successful Bidder refusing or neglecting to execute a formal contract and bond within 20 days of the awarding of the contract, the bid bond or security deposited by the successful bidder shall be forfeited.

4.3 SUBCONTRACTOR LIST

4.3.1 As required by Delaware Code, Title 21, section 6962(d)(10)b, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form. NAME ONLY ONE SUBCONTRACTOR FOR EACH TRADE. A Bid will be considered non-responsive unless the complete list is included.

4.3.2 Provide the Name and Address for each listed subcontractor. Addresses by City, Town or Locality, plus State, will be acceptable.

4.3.3 It is the responsibility of the Contractor to ensure that their Subcontractors are in compliance with the provisions of this law. Also, if a Contractor elects to list themselves as a Subcontractor for any category, they must specifically name themselves on the Bid Form and be able to document their capability to act as Subcontractor in that category in accordance with this law.

4.4 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

4.4.1 During the performance of this contract, the contractor agrees as follows:

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take affirmative action to ensure the applicants are employed, and that employees are treated during employment, without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such actions shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.



- B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin."

INSTRUCTIONS TO BIDDERS

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4.5 PREVAILING WAGE REQUIREMENT

- 4.5.1 Wage Provisions: For renovation and new construction projects whose costs exceed the thresholds contained in Delaware Code, Title 29, Section 6960, the minimum wage rates for various classes of laborers and mechanics shall be as determined by the Department of Labor, Division of Industrial Affairs of the State of Delaware.

- 4.5.2 The employer shall pay all mechanics and labors employed directly upon the site of work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics.

- 4.5.3 The scale of the wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work.

- 4.5.4 Every contract based upon these specifications shall contain a stipulation that sworn payroll information, as required by the Department of Labor, be furnished weekly. The Department of Labor shall keep and maintain the sworn payroll information for a period of 6 months from the last day of the work week covered by the payroll.

4.6 SUBMISSION OF BIDS

- 4.6.1 Enclose the Bid, the Bid Security and any other documents required to be submitted with the Bid in a sealed opaque envelope. Address the envelope to the party receiving the Bids. Identify with the project name, project number, and the Bidder's name and address. If the Bid is sent by mail, enclose the sealed envelope in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof. The State is not responsible for the opening of bids prior to bid opening date and time that are not properly marked.

- 4.6.2 Deposit Bids at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for Bids. Bids received after the time and date for receipt of bids will be marked "LATE BID" and returned.

- 4.6.3 Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.

- 4.6.4 Oral, telephonic or telegraphic bids are invalid and will not receive consideration.

- 4.6.5 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids, provided that they are then fully in compliance with these Instructions to Bidders.

4.7 MODIFICATION OR WITHDRAW OF BIDS

- 4.7.1 Prior to the closing date for receipt of Bids, a Bidder may withdraw a Bid by personal request and by showing proper identification to the Architectural/Engineering firm. A request for withdraw by letter or fax, if the Architectural/Engineering firm is notified in writing prior to receipt of fax, is acceptable. A fax directing a modification in the bid price will render the Bid informal, causing it to be ineligible for consideration of award. Telephone directives for modification of the bid price shall not be permitted and will have no bearing on the submitted proposal in any manner.



- 4.7.2 Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.

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- 4.7.3 A Bid may not be modified, withdrawn or canceled by the Bidder during a thirty (30) day period following the time and date designated for the receipt and opening of Bids, and Bidder so agrees in submitting their Bid. Bids shall be binding for 30 days after the date of the Bid opening.

ARTICLE 5: CONSIDERATION OF BIDS

5.1 OPENING/REJECTION OF BIDS

- 5.1.1 Unless otherwise stated, Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids will be made available to Bidders.

- 5.1.2 The Agency shall have the right to reject all Bids. A Bid not accompanied by a required Bid Security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete, or irregular, is subject to rejection.

- 5.1.3 If the Bids are rejected, it will be done within thirty (30) calendar day of the Bid opening.

5.2 COMPARISON OF BIDS

- 5.2.1 After the Bids have been opened and read, the bid prices will be compared, and the result of such comparisons will be made available to the public. Comparisons of the Bids may be based on the Base Bid plus desired Alternates. The Agency shall have the right to accept Alternates in any order or combination.

- 5.2.2 The Agency reserves the right to waive technicalities, to reject any or all Bids, or any portion thereof, to advertise for new Bids, to proceed to do the Work otherwise, or to abandon the Work, if in the judgment of the Agency or its agent(s), it is in the best interest of the State.

- 5.2.3 An increase or decrease in the quantity for any item is not sufficient grounds for an increase or decrease in the Unit Price.

- 5.2.4 The prices quoted are to be those for which the material will be furnished F.O.B. Job Site and include all charges that may be imposed during the period of the Contract.

- 5.2.5 No qualifying letters or statements in or attached to the Bid, or separate discounts will be considered in determining the low Bid except as may be otherwise herein noted. Cash or separate discounts should be computed and incorporated into Unit Bid Price(s).

5.3 DISQUALIFICATION OF BIDDERS

- 5.3.1 An agency shall determine that each Bidder on any Public Works Contract is responsible before awarding the Contract. Factors to be considered in determining the responsibility of a Bidder include:

- A. The Bidder's financial, physical, personnel or other resources including Subcontracts.
- B. The Bidder's record of performance on past public or private construction projects, including, but not limited to, defaults and/or final adjudication or admission of violations of the Prevailing Wage Laws in Delaware or any other state.
- C. The Bidder's written safety plan.



- D. Whether the Bidder is qualified legally to contract with the State;

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- E. Whether the Bidder supplied all necessary information concerning its responsibility; and,
- F. Any other specific criteria for a particular procurement, which an agency may establish; provided however, that, the criteria be set forth in the Invitation to Bid and is otherwise in conformity with State and/or Federal law.

5.3.2 If an agency determines that a Bidder is nonresponsive and/or nonresponsible, the determination shall be in writing and set forth the basis for the determination. A copy of the determination shall be sent to the affected Bidder within five (5) working days of said determination.

5.3.3 In addition, any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of their Bid or Bids.

5.3.3.1 More than one Bid for the same Contract from an individual, firm or corporation under the same or different names.

5.3.3.2 Evidence of collusion among Bidders.

5.3.3.3 Unsatisfactory performance record as evidenced by experience.

5.3.3.4 If the Unit Prices are obviously unbalanced either in excess or below reasonable cost analysis values.

5.3.3.5 If there are any unauthorized additions, interlineation, conditional or alternate bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite or ambiguous as to its meaning.

5.3.3.6 If the Bid is not accompanied by the required Bid Security and other data required by the Bidding Documents.

5.3.3.7 If any exceptions or qualifications of the Bid are noted on the Bid Form.

5.4 ACCEPTANCE OF BID AND AWARD OF CONTRACT

5.4.1 A formal Contract shall be executed with the successful Bidder within twenty (20) calendar days after the award of the Contract.

5.4.2 Per Section 6962(d)(13) a., Title 29, Delaware Code, "The contracting agency shall award any public works contract within thirty (30) days of the bid opening to the lowest responsive and responsible Bidder, unless the Agency elects to award on the basis of best value, in which case the election to award on the basis of best value shall be stated in the Invitation To Bid."

5.4.3 Each Bid on any Public Works Contract must be deemed responsive by the Agency to be considered for award. A responsive Bid shall conform in all material respects to the requirements and criteria set forth in the Contract Documents and specifications.

5.4.4 The Agency shall have the right to accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid, plus accepted Alternates.



INSTRUCTIONS TO BIDDERS

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- 5.4.5 The successful Bidder shall execute a formal contract, submit the required Insurance Certificate, and furnish good and sufficient bonds, unless specifically waived in the General Requirements, in accordance with the General Requirement, within twenty (20) days of official notice of contract award. The successful Bidder shall provide two business days prior to contract execution, copies of the Employee Drug Testing Program for the Bidder and all listed Subcontractors. Bonds shall be for the benefit of the Agency with surety in the amount of 100% of the total contract award. Said Bonds shall be conditioned upon the faithful performance of the contract. Bonds shall remain in effect for period of one year after the date of substantial completion.
- 5.4.6 If the successful Bidder fails to execute the required Contract, Bond and all required information, as aforesaid, within twenty (20) calendar days after the date of official Notice of the Award of the Contract, their Bid guaranty shall immediately be taken and become the property of the State for the benefit of the Agency as liquidated damages, and not as a forfeiture or penalty. Award will then be made to the next lowest qualified Bidder of the Work or readvertised, as the Agency may decide.
- 5.4.7 Each bidder shall supply with its bid its taxpayer identification number (i.e., federal employer identification number or social security number) and a copy of its Delaware business license, and should the vendor be awarded a contract, such a vendor shall provide the agency with the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided at the later of the date on which such a subcontractor is required to be identified at the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.
- 5.4.8 The Bid Security shall be returned to the successful Bidder upon the execution of the formal contract. The Bid Securities of unsuccessful bidders shall be returned within thirty (30) calendar days after the opening of the bids.

ARTICLE 6: POST-BID INFORMATION

6.1 CONTRACTOR'S QUALIFICATION STATEMENT

- 6.1.1 Bidders to whom award of a Contract is under consideration shall, if requested by the Agency, submit a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a statement has been previously required and submitted.

6.2 BUSINESS DESIGNATION FORM

- 6.2.1 Successful bidder shall be required to accurately complete an Office of Management and Budget Business Designation Form for Subcontractors.

ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND

7.1 BOND REQUIREMENTS

- 7.1.1 The cost of furnishing the required Bonds, that are stipulated in the Bidding Documents, shall be included in the Bid.
- 7.1.2 If Bidder is required by the Agency to secure a bond from other than the Bidder's usual sources, changes in cost will be adjusted as provided in the Contract Documents.



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7.1.3 The Performance and Payment Bond forms used shall be the standard OMB forms (attached).

7.2 TIME OF DELIVERY AND FORM OF BONDS

7.2.1 The bonds shall be dated on or after the date of the Contract.

7.2.2 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix a certified and current copy of the power of attorney.

ARTICLE 8: FORM OF AGREEMENT BETWEEN AGENCY AND CONTRACTOR

8.1 Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum.

END OF INSTRUCTIONS TO BIDDERS

DRAFT AIA® Document A101® – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

« »
« »
« »
« »

and the Contractor:
(Name, legal status, address and other information)

« »
« »
« »
« »

for the following Project:
(Name, location and detailed description)

« »
« »
« »

The Architect:
(Name, legal status, address and other information)

« »
« »
« »
« »

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101®-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
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- 9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

☐ The date of this Agreement.

☐ A date set forth in a notice to proceed issued by the Owner.

☐ Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

☐

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« »] By the following date: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

« »

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « » (« ») days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 In accordance with AIA Document A201™-2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount of any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201-2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201-2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« »

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

<< >>

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

<< >>

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

<< >>

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

<< >>

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

<< >>

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

<< >>

<< >>

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<< >>

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017

☐ Litigation in a court of competent jurisdiction

☐ Other (Specify)

<< >>

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

<< >>

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

(Name, address, email address, and other information)

<< >>
<< >>
<< >>
<< >>
<< >>
<< >>

§ 8.3 The Contractor's representative:

(Name, address, email address, and other information)

<< >>
<< >>
<< >>
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<< >>
<< >>

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™-2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201-2017, may be given in accordance with a building information modeling exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with a building information modeling exhibit, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

<< >>

§ 8.7 Other provisions:

<< >>

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™-2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .4 Building information modeling exhibit, dated as indicated below:
(Insert the date of the building information modeling exhibit incorporated into this Agreement.)

<< >>

- .5 Drawings

Number	Title	Date

- .6 Specifications

Section	Title	Date	Pages

- .7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

- .8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[<< >>] AIA Document E204™-2017, Sustainable Projects Exhibit, dated as indicated below:

(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

« »« »

(Printed name and title)

CONTRACTOR (Signature)

« »« »

(Printed name and title)

AIA® Document G702® - 1992

Application and Certificate for Payment

TO OWNER:	State of Delaware Division of Facilities Management 122 MLK Blvd. Dover, DE 19901	PROJECT:	New Forensics Science Building 3000 Newport Gap Pike Newport, DE 19808 Asbestos Abatement Project	APPLICATION NO:	000	Distribution to:
FROM CONTRACTOR:		VIA ARCHITECT:	Harvard Environmental Inc. 760 Pulaski Highway Bear, DE 19701	PERIOD TO:		OWNER: ☐
				CONTRACT FOR:		ARCHITECT: ☐
				CONTRACT DATE:		CONTRACTOR: ☐
				PROJECT NOS.:	/ /	FIELD: ☐
						OTHER: ☐

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
AIA Document G703®, Continuation Sheet, is attached.

1. ORIGINAL CONTRACT SUM	\$0.00
2. NET CHANGE BY CHANGE ORDERS	\$0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)	\$0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703).....	\$0.00
5. RETAINAGE:	
a. <u>0</u> % of Completed Work (Column D + E on G703: <u>\$0.00</u>) =	\$0.00
b. <u>0</u> % of Stored Material (Column F on G703: <u>\$0.00</u>) =	\$0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703).....	\$0.00
6. TOTAL EARNED LESS RETAINAGE	\$0.00
(Line 4 Less Line 5 Total)	
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	\$0.00
(Line 6 from prior Certificate)	
8. CURRENT PAYMENT DUE	\$0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	\$0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$0.00	\$0.00
Total approved this Month	\$0.00	\$0.00
TOTALS	\$0.00	\$0.00
NET CHANGES by Change Order		\$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____

Date: _____

State of: _____

County of: _____

Subscribed and sworn to before

me this _____ day of _____

Notary Public: _____

My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED..... \$0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____

Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.



APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

[illegible]



AIA® Document G706® – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: (Name and address)

ARCHITECT'S PROJECT NUMBER:

OWNER ☐

CONTRACT FOR:

ARCHITECT ☐

CONTRACTOR ☐

TO OWNER: (Name and address)

CONTRACT DATED:

SURETY ☐

OTHER ☐

STATE OF:

COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Contractor or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G706™, Consent of Surety to Final Payment, may be used for this purpose.

Indicate attachment: ☐ Yes ☐ No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof
3. Contractor's Affidavit of Release of Liens (AIA Document G706A™)

CONTRACTOR: (Name and address)

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:



AIA® Document G706®A – 1994

Contractor's Affidavit of Release of Liens

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER ☐

CONTRACT FOR:

ARCHITECT ☐

CONTRACTOR ☐

TO OWNER: *(Name and address)*

CONTRACT DATED:

SURETY ☐

OTHER ☐

STATE OF:

COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:

DRAFT AIA[®] Document A201[™] – 1997

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address):

Sample

THE OWNER:

(Name and address):

THE ARCHITECT:

(Name and address):

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This document has been approved and endorsed by The Associated General Contractors of America

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NOT FOR BIDDING PURPOSES

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 BASIC DEFINITIONS

§ 1.1.1 THE CONTRACT DOCUMENTS

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include other documents such as bidding requirements (advertisement or invitation to bid, Instructions to Bidders, sample forms the Contractor's bid or portions of Addenda relating to bidding requirements).

§ 1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Architect and Contractor, (2) between the Owner and a Subcontractor or Sub-subcontractor, (3) between the Owner and Architect, or (4) between any persons or entities other than the Owner and Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

§ 1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 THE PROJECT MANUAL

The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

§ 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 CAPITALIZATION

§ 1.3.1 Terms capitalized in these General Conditions include those which are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 INTERPRETATION

§ 1.4.1 In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 EXECUTION OF CONTRACT DOCUMENTS

§ 1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Architect shall identify such unsigned Documents upon request.

§ 1.5.2 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 1.6 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

§ 1.6.1 The Drawings, Specifications and other documents, including those in electronic form prepared by the Architect and the Architect's consultants are Instruments of Service through which the Work to be executed by the Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, Sub-subcontractor or material or equipment supplier shall own or claim a copyright in the Drawings, Specifications and other documents prepared by the Architect or the Architect's consultants, and unless otherwise indicated the Architect and the Architect's consultants shall be deemed the authors of them and will retain all common law, statutory and other reserved rights, in addition to the copyrights. All copies of Instruments of Service, except the Contractor's record set, shall be returned or suitably accounted for to the Architect, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect's consultants. The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' copyrights or other reserved rights.

ARTICLE 2 OWNER

§ 2.1 GENERAL

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as it singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

§ 2.2.1 The Owner shall, at the written request of the Contractor, prior to commencement of the Work and thereafter, furnish to the Contractor reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Furnishing of such evidence shall be a condition precedent to commencement or

continuation of the Work. After such evidence has been furnished, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.2 Except for permits and fees, including those required under Section 3.7.1, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 Information or services required of the Owner by the Contract Documents shall be furnished by the Owner with reasonable promptness. Any other information or services relevant to the Contractor's performance of the Work under the Owner's control shall be furnished by the Owner after receipt from the Contractor of a written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Contractor will be furnished, free of charge, such copies of Drawings and Project Manuals as are reasonably necessary for execution of the Work.

§ 2.3 OWNER'S RIGHT TO STOP THE WORK

§ 2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

§ 2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such seven-day period give the Contractor a second written notice to correct such deficiencies within a three-day period. If the Contractor within such three-day period after receipt of such second notice fails to commence and continue to correct any deficiencies, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 GENERAL

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 3.2.1 Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the

Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions discovered by the Contractor shall be reported promptly to the Architect as a request for information in such form as the Architect may require.

§ 3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Architect, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity discovered by or made known to the Contractor shall be reported promptly to the Architect.

§ 3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Architect in response to the Contractor's notices or requests for information pursuant to Sections 3.2.1 and 3.2.2, the Contractor shall make Claims as provided in Sections 4.3.6 and 4.3.7. If the Contractor fails to perform the obligations of Sections 3.2.1 and 3.2.2, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. The Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor recognized such error, inconsistency, omission or difference and knowingly failed to report it to the Architect.

§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any resulting loss or damage.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for or on behalf of the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 LABOR AND MATERIALS

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 The Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 3.5 WARRANTY

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 TAXES

§ 3.6.1 The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor which are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 PERMITS, FEES AND NOTICES

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Architect and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

§ 3.7.4 If the Contractor performs Work knowing it to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Architect and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.8 ALLOWANCES

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances;
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

§ 3.9 SUPERINTENDENT

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important

communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare and keep current, for the Architect's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Architect reasonable time to review submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

§ 3.11.1 The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work.

§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect without action.

§ 3.12.6 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services which constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

§ 3.13 USE OF SITE

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 CUTTING AND PATCHING

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 CLEANING UP

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

§ 3.16 ACCESS TO WORK

§ 3.16.1 The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

§ 3.17.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 INDEMNIFICATION

§ 3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Section 11.3, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ADMINISTRATION OF THE CONTRACT

§ 4.1 ARCHITECT

§ 4.1.1 The Architect is the person lawfully licensed to practice architecture or an entity lawfully practicing architecture identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Architect" means the Architect or the Architect's authorized representative.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a new Architect against whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the former Architect.

§ 4.2 ARCHITECT'S ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents, and will be an Owner's representative (1) during construction, (2) until final payment is due and (3) with the Owner's concurrence, from time to time during the one-year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

§ 4.2.2 The Architect, as a representative of the Owner, will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and

deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will neither have control over or charge of, nor be responsible for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect will have authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 7.5 and 8.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, will receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Architect shall be furnished in compliance with this Section 4.2, then delay shall not be recognized on account of failure by the Architect to furnish such interpretations until 15 days after written request is made for them.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.3 CLAIMS AND DISPUTES

§ 4.3.1 Definition. A Claim is 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 time 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.

§ 4.3.2 Time Limits on Claims. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Architect and the other party.

§ 4.3.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Section 9.7.1 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 4.3.4 Claims for Concealed or Unknown Conditions. If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, as both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall so notify the Owner and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 21 days after the Architect has given notice of the decision. If the conditions encountered are materially different, the Contract Sum and Contract Time shall be equitably adjusted, but if the Owner and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Architect for initial determination, subject to further proceedings pursuant to Section 4.3.

§ 4.3.5 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.6.

§ 4.3.6 If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Architect, (2) an order by the Owner to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Architect, (4) failure of payment by the Owner, (5) termination of the Contract by the Owner, (6) Owner's suspension or (7) other reasonable grounds, Claim shall be filed in accordance with this Section 4.3.

§ 4.3.7 Claims for Additional Time

§ 4.3.7.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 4.3.7.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 4.3.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 4.3.10 Claims for Consequential Damages. The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 4.3.10 shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 4.4 RESOLUTION OF CLAIMS AND DISPUTES

§ 4.4.1 Decision of Architect. Claims including those alleging an error or omission by the Architect but excluding those arising under Sections 10.3 through 10.5, shall be referred initially to the Architect for decision. An initial decision by the Architect shall be required as a condition precedent to mediation, arbitration or litigation of all Claims between the Contractor and Owner arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Architect with no decision having been rendered by the Architect. The Architect will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 4.4.2 The Architect will review Claims and within ten days of the receipt of the Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Architect is unable to resolve the Claim if the Architect lacks sufficient information to evaluate the merits of the Claim or if the Architect concludes that, in the Architect's sole discretion, it would be inappropriate for the Architect to resolve the Claim.

§ 4.4.3 In evaluating Claims, the Architect may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Architect in rendering a decision. The Architect may request the Owner to authorize retention of such persons at the Owner's expense.

§ 4.4.4 If the Architect requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either provide a response on the requested supporting data, advise the Architect when the response or supporting data will be furnished or advise the Architect that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Architect will either reject or approve the Claim in whole or in part.

§ 4.4.5 The Architect will approve or reject Claims by written decision, which shall state the reasons therefor and which shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be final and binding on the parties but subject to mediation and arbitration.

§ 4.4.6 When a written decision of the Architect states that (1) the decision is final but subject to mediation and arbitration and (2) a demand for arbitration of a Claim covered by such decision must be made within 30 days after the date on which the party making the demand receives the final written decision, then failure to demand arbitration within said 30 days' period shall result in the Architect's decision becoming final and binding upon the Owner and Contractor. If the Architect renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence, but shall not supersede arbitration proceedings unless the decision is acceptable to all parties concerned.

§ 4.4.7 Upon receipt of a Claim against the Contractor or at any time thereafter, the Architect or the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Architect or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 4.4.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the Claim by the Architect, by mediation or by arbitration.

§ 4.5 MEDIATION

§ 4.5.1 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Sections 4.3.10, 9.10.4 and 9.10.5 shall, after initial decision by the Architect or 30 days after submission of the Claim to the Architect, be subject to mediation as a condition precedent to arbitration or the institution of legal or equitable proceedings by either party.

§ 4.5.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. The request may be made concurrently with the filing of a demand for arbitration but, in such event, mediation shall proceed in advance of arbitration or legal or equitable proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

§ 4.5.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 4.6 ARBITRATION

§ 4.6.1 Any Claim arising out of or related to the Contract, except Claims relating to aesthetic effect and except those waived as provided for in Sections 4.3.10, 9.10.4 and 9.10.5, shall, after decision by the Architect or 30 days after submission of the Claim to the Architect, be subject to arbitration. Prior to arbitration, the parties shall endeavor to resolve disputes by mediation in accordance with the provisions of Section 4.5.

§ 4.6.2 Claims not resolved by mediation shall be decided by arbitration which, unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association currently in effect. The demand for arbitration shall be filed in writing with the other party to the Contract and with the American Arbitration Association, and a copy shall be filed with the Architect.

§ 4.6.3 A demand for arbitration shall be made within the time limits specified in Sections 4.4.6 and 4.6.1 as applicable, and in other cases within a reasonable time after the Claim has arisen, and in no event shall it be made after the date when institution of legal or equitable proceedings based on such Claim would be barred by the applicable statute of limitations as determined pursuant to Section 13.7.

§ 4.6.4 Limitation on Consolidation or Joinder. No arbitration arising out of or relating to the Contract shall include, by consolidation or joinder or in any other manner, the Architect, the Architect's employees or consultants, except by written consent containing specific reference to the Agreement and signed by the Architect, Owner, Contractor and any other person or entity sought to be joined. No arbitration shall include, by consolidation or joinder or in any other manner, parties other than the Owner, Contractor, a separate contractor as described in Article 6 and other persons substantially involved in a common question of fact or law whose presence is required if complete relief is to be accorded in arbitration. No person or entity other than the Owner, Contractor or a separate contractor as described in Article 6 shall be included as an original third party or additional third party to an arbitration whose interest or responsibility is insubstantial. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a Claim not described therein or with a person or entity not named or described therein. The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 4.6.5 Claims and Timely Assertion of Claims. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 4.6.6 Judgment on Final Award. The award rendered by the arbitrator or arbitrators may be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or the Architect, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Architect to reply promptly shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitute.

§ 5.3 SUBCONTRACTUAL RELATIONS

§ 5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner provided that:

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Section 4.3.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 MUTUAL RESPONSIBILITY

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, damage to the Work or defective construction of a separate contractor.

§ 6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 OWNER'S RIGHT TO CLEAN UP

§ 6.3.1 If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.2 CHANGE ORDERS

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect, stating their agreement upon all of the following:

- .1 change in the Work;
- .2 the amount of the adjustment, if any, in the Contract Sum; and
- .3 the extent of the adjustment, if any, in the Contract Time.

§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 as provided in Section 7.3.6.

§ 7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.6 shall be limited to the following:

- .1 costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 costs of materials, supplies and equipment including cost of transportation, whether incorporated or consumed;
- .3 rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.7 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.8 Pending final determination of the total cost of a Construction Change Directive to the Owner, amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Architect will make an interim determination for purposes of monthly certification for payment for those costs. That determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a claim in accordance with Article 4.

§ 7.3.9 When the Owner and Contractor agree with the determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

§ 7.4 MINOR CHANGES IN THE WORK

§ 7.4.1 The Architect will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out such written orders promptly.

ARTICLE 8 TIME

§ 8.1 DEFINITIONS

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 PROGRESS AND COMPLETION

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. Unless the date of commencement is established by the Contract Documents or a notice to proceed given by the Owner, the Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 DELAYS AND EXTENSIONS OF TIME

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Section 4.3.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 SCHEDULE OF VALUES

§ 9.2.1 Before the first Application for Payment, the Contractor shall submit to the Architect a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 APPLICATIONS FOR PAYMENT

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to

payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and reflecting retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.8, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submission of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Architect's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of:

- .1 defective Work not remedied;

- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or another contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 persistent failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 FAILURE OF PAYMENT

§ 9.7.1 If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 SUBSTANTIAL COMPLETION

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 PARTIAL OCCUPANCY OR USE

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 1.4.1.1 and authorized by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

§ 9.10.1 Upon receipt of written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the

final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainer stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from:

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

§ 10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 SAFETY OF PERSONS AND PROPERTY

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not load or permit any part of the construction site to be loaded so as to endanger its safety.

§ 10.3 HAZARDOUS MATERIALS

§ 10.3.1 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 The Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up, which adjustments shall be accomplished as provided in Article 7.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) and provided that such damage, loss or expense is not due to the sole negligence of a party seeking indemnity.

§ 10.4 The Owner shall not be responsible under Section 10.3 for materials and substances brought to the site by the Contractor unless such materials or substances were required by the Contract Documents.

§ 10.5 If, without negligence on the part of the Contractor, the Contractor is held liable for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.6 EMERGENCIES

§ 10.6.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Section 4.3 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- .2 claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 claims for damages insured by usual personal injury liability coverage;
- .5 claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 claims for bodily injury or property damage arising out of completed operations; and
- .8 claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Section 9.10.2. Information concerning reduction of coverage or account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

§ 11.2 OWNER'S LIABILITY INSURANCE

§ 11.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE

§ 11.3.1 Optionally, the Owner may require the Contractor to purchase and maintain Project Management Protective Liability insurance from the Contractor's usual sources as primary coverage for the Owner's, Contractor's and Architect's vicarious liability for construction operations under the Contract. Unless otherwise required by the Contract Documents, the Owner shall reimburse the Contractor by increasing the Contract Sum to pay the cost of purchasing and maintaining such optional insurance coverage, and the Contractor shall not be responsible for purchasing any other liability insurance on behalf of the Owner. The minimum limits of liability purchased with such coverage shall be equal to the aggregate of the limits required for Contractor's Liability Insurance under Sections 11.1.1.2 through 11.1.1.5.

§ 11.3.2 To the extent damages are covered by Project Management Protective Liability insurance, the Owner, Contractor and Architect waive all rights against each other for damages, except such rights as they may have to the proceeds of such insurance. The policy shall provide for such waivers of subrogation by endorsement or otherwise.

§ 11.3.3 The Owner shall not require the Contractor to include the Owner, Architect or other persons or entities as additional insureds on the Contractor's Liability Insurance coverage under Section 11.1.

§ 11.4 PROPERTY INSURANCE

§ 11.4.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.4 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, sub-contractors and Sub-subcontractors in the Project.

§ 11.4.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.4.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance which will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.4.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.4.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.4.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.4.2 Boiler and Machinery Insurance. The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.4.3 Loss of Use Insurance. The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.4.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.4.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.4.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.4.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.4. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.4.7 Waivers of Subrogation. The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.4 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.4.8 A loss insured under Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 4.4.1. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.4.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or in accordance with an arbitration award in which case the procedure shall be as provided in Section 4.6. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.4.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved as provided in Sections 4.5 and 4.6. The Owner as fiduciary shall, in the case of arbitration, make settlement with insurers in accordance with directions of the arbitrators. If distribution of insurance proceeds by arbitration is required, the arbitrators will direct such distribution.

§ 11.5 PERFORMANCE BOND AND PAYMENT BOND

§ 11.5.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 11.5.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered which the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

§ 12.2.1.1 The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work including additional testing and inspections and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5.1, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract

Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

§ 12.3.1 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

§ 13.1.1 The Contract shall be governed by the law of the place where the Project is located.

§ 13.2 SUCCESSORS AND ASSIGNS

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to an institutional lender providing construction financing for the Project. In such event, the lender shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 WRITTEN NOTICE

§ 13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice.

§ 13.4 RIGHTS AND REMEDIES

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation on duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

§ 13.5 TESTS AND INSPECTIONS

§ 13.5.1 Tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction shall be made at an appropriate time. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations concluded.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 INTEREST

§ 13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

§ 13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

§ 13.7.1 As between the Owner and Contractor:

- .1 Before Substantial Completion. As to acts or failures to act occurring prior to the relevant date of Substantial Completion, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than such date of Substantial Completion;
- .2 Between Substantial Completion and Final Certificate for Payment. As to acts or failures to act occurring subsequent to the relevant date of Substantial Completion and prior to issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of issuance of the final Certificate for Payment; and
- .3 After Final Certificate for Payment. As to acts or failures to act occurring after the relevant date of issuance of the final Certificate for Payment, any applicable statute of limitations shall commence to run and any alleged cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any Warranty provided under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor or Owner, whichever occurs last.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
- .2 an act of government, such as a declaration of national emergency which requires all Work to be stopped;
- .3 because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 the Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work

by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has persistently failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor:

- .1 persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Architect that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 accept assignment of subcontracts pursuant to Section 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Architect, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

NOT FOR BIDDING PURPOSES

SUPPLEMENTARY GENERAL CONDITIONS A201-2007

The following supplements modify the "General Conditions of the Contract for Construction," AIA Document A201-2007. Where a portion of the General Conditions is modified or deleted by the Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

TABLE OF ARTICLES

1. GENERAL PROVISIONS
2. OWNER
3. CONTRACTOR
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13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT

ARTICLE 1: GENERAL PROVISIONS**1.1 BASIC DEFINITIONS****1.1.1 THE CONTRACT DOCUMENTS**

Delete the last sentence in its entirety and replace with the following:

"The Contract Documents also include Advertisement for Bid, Instructions to Bidder, sample forms, the Bid Form, the Contractor's completed Bid and the Award Letter.

Add the following Paragraph:

1.1.1.1 In the event of conflict or discrepancies among the Contract Documents, the Documents prepared by the State of Delaware Division of Facilities Management shall take precedence over all other documents.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Paragraphs:

1.2.4 In the case of an inconsistency between the Drawings and the Specifications, or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect's interpretation.

1.2.5 The word "PROVIDE" as used in the Contract Documents shall mean "FURNISH AND INSTALL" and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work.

1.2.6 The word "PRODUCT" as used in the Contract Documents means all materials, systems and equipment.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

Delete Paragraph 1.5.1 in its entirety and replace with the following:

"All pre-design studies, drawings, specifications and other documents, including those in electronic form, prepared by the Architect under this Agreement are, and shall remain, the property of the Owner whether the Project for which they are made is executed or not. Such documents may be used by the Owner to construct one or more like Projects without the approval of, or additional compensation to, the Architect. The Contractor, Subcontractors, Sub-subcontractors and Material or Equipment Suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or Material and Equipment Supplier on other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and Architect's consultants.

The Architect shall not be liable for injury or damage resulting from the re-use of drawings and specifications if the Architect is not involved in the re-use Project. Prior to re-use of construction documents for a Project in which the Architect is not also involved, the Owner will remove from such documents all identification of the original Architect, including name, address and professional seal or stamp.”

Delete Paragraph 1.5.2 in its entirety.

ARTICLE 2: OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

To Subparagraph 2.2.3 – Add the following sentence:

“The Contractor, at their expense shall bear the costs to accurately identify the location of all underground utilities in the area of their excavation and shall bear all cost for any repairs required, out of failure to accurately identify said utilities.

Delete Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor shall be furnished free of charge up to five (5) sets of the Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling.

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Amend Paragraph 3.2.2 to state that any errors, inconsistencies or omissions discovered shall be reported to the Architect and Owner immediately.

Delete the third sentence in Paragraph 3.2.3.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Paragraphs:

3.3.2.1 The Contractor shall immediately remove from the Work, whenever requested to do so by the Owner, any person who is considered by the Owner or Architect to be incompetent or disposed to be so disorderly, or who for any reason is not satisfactory to the Owner, and that person shall not again be employed on the Work without the consent of the Owner or the Architect.

3.3.4 The Contractor must provide suitable storage facilities at the Site for the proper protection and safe storage of their materials. Consult the Owner and the Architect before storing any materials.

3.3.5 When any room is used as a shop, storeroom, office, etc., by the Contractor or Subcontractor(s) during the construction of the Work, the Contractor making use of these areas will be held responsible for any repairs, patching or cleaning arising from such use.

3.4 LABOR AND MATERIALS

Add the Following Paragraphs:

3.4.4 Before starting the Work, each Contractor shall carefully examine all preparatory Work that has been executed to receive their Work. Check carefully, by whatever means are required, to insure that its Work and adjacent, related Work, will finish to proper contours, planes and levels. Promptly notify the General Contractor/Construction Manager of any defects or imperfections in preparatory Work which will in any way affect satisfactory completion of its Work. Absence of such notification will be construed as an acceptance of preparatory Work and later claims of defects will not be recognized.

3.4.5 Under no circumstances shall the Contractor's Work proceed prior to preparatory Work having been completely cured, dried and/or otherwise made satisfactory to receive this Work. Responsibility for timely installation of all materials rests solely with the Contractor responsible for that Work, who shall maintain coordination at all times.

3.5 WARRANTY

Add the following Paragraphs:

3.5.1 The Contractor will guarantee all materials and workmanship against original defects, except injury from proper and usual wear when used for the purpose intended, for two years after Acceptance by the Owner, and will maintain all items in perfect condition during the period of guarantee.

3.5.2 Defects appearing during the period of guarantee will be made good by the Contractor at his expense upon demand of the Owner, it being required that all work will be in perfect condition when the period of guarantee will have elapsed.

3.5.3 In addition to the General Guarantee there are other guarantees required for certain items for different periods of time than the two years as above, and are particularly so stated in that part of the specifications referring to same. The said guarantees will commence at the same time as the General Guarantee.

3.5.4 If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair, or otherwise remedy the failure, defect or damage at the Contractor's expense.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Paragraphs:

3.11.1 During the course of the Work, the Contractor shall maintain a record set of drawings on which the Contractor shall mark the actual physical location of all piping, valves, equipment, conduit, outlets, access panels, controls, actuators, including all appurtenances that will be concealed once construction is complete, etc., including all invert elevations.

3.11.2 At the completion of the project, the Contractor shall obtain a set of reproducible drawings from the Architect, and neatly transfer all information outlined in 3.11.1 to provide a complete record of the as-built conditions.

- 3.11.3 The Contractor shall provide two (2) prints of the as-built conditions, along with the reproducible drawings themselves, to the Owner and one (1) set to the Architect. In addition, attach one complete set to each of the Operating and Maintenance Instructions/Manuals.

3.17 In the second sentence of the paragraph, insert "indemnify" between "shall" and "hold".

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.2 ADMINISTRATION OF THE CONTRACT

Delete the first sentence of Paragraph 4.2.7 and replace with the following:

The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples for the purpose of checking for conformance with the Contract Documents.

Delete the second sentence of Paragraph 4.2.7 and replace with the following:

The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Owner's professional judgment to permit adequate review.

Add the following Paragraph:

- 4.2.10.1 There will be no full-time project representative provided by the Owner or Architect on this project.

Add to Paragraph 4.2.13 "and in compliance with all local requirements." to the end of the sentence

ARTICLE 5: SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete Paragraph 5.2.3 in its entirety and replace with the following:

- 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection, subject to the statutory requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

Delete Paragraph 6.1.4 in its entirety.

6.2 MUTUAL RESPONSIBILITY

- 6.2.3 In the second sentence, strike the word "shall" and insert the word "may".

ARTICLE 7: CHANGES IN THE WORK

(SEE ARTICLE 7: CHANGES IN WORK IN THE GENERAL REQUIREMENTS)

ARTICLE 8: TIME**8.2 PROGRESS AND COMPLETION**

Add the following Paragraphs:

8.2.1.1 Refer to Specification Section SUMMARY OF WORK for Contract time requirements.

8.2.4 If the Work falls behind the Progress Schedule as submitted by the Contractor, the Contractor shall employ additional labor and/or equipment necessary to bring the Work into compliance with the Progress Schedule at no additional cost to the Owner.

8.3 DELAYS AND EXTENSION OF TIME

8.3.1 Strike "arbitration" and insert "remedies at law or in equity".

Add the following Paragraph:

8.3.2.1 The Contractor shall update the status of the suspension, delay, or interruption of the Work with each Application for Payment. (The Contractor shall report the termination of such cause immediately upon the termination thereof.) Failure to comply with this procedure shall constitute a waiver for any claim for adjustment of time or price based upon said cause.

Delete Paragraph 8.3.3 in its entirety and replace with the following:

8.3.3 Except in the case of a suspension of the Work directed by the Owner, an extension of time under the provisions of Paragraph 8.3.1 shall be the Contractor's sole remedy in the progress of the Work and there shall be no payment or compensation to the Contractor for any expense or damage resulting from the delay.

Add the following Paragraph:

8.3.4 By permitting the Contractor to work after the expired time for completion of the project, the Owner does not waive their rights under the Contract.

ARTICLE 9: PAYMENTS AND COMPLETION**9.1 SCHEDULE OF VALUES**

Add the following Paragraphs:

9.2.1 The Schedule of Values shall be submitted using AIA Document G702, Continuation Sheet to G703.

9.2.2 The Schedule of Values is to include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1% of the initial contract amount.

9.3 APPLICATIONS FOR PAYMENT

Add the following Paragraph:

- 9.3.1.3 Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Said Applications shall be fully executed and notarized.

Add the following Paragraphs:

- 9.3.4 Until Closeout Documents have been received and outstanding items completed the Owner will pay 95% (ninety-five percent) of the amount due the Contractor on account of progress payments.
- 9.3.5 The Contractor shall provide a current and updated Progress Schedule to the Architect with each Application for Payment. Failure to provide Schedule will be just cause for rejection of Application for Payment.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Add the following to 9.5.1:

- .8 failure to provide a current Progress Schedule;
- .9 a lien or attachment is filed;
- .10 failure to comply with mandatory requirements for maintaining Record Documents.

9.6 PROGRESS PAYMENTS

Delete Paragraph 9.6.1 in its entirety and replace with the following:

- 9.6.1 After the Architect has approved and issued a Certificate for Payment, payment shall be made by the Owner within 30 days after Owner's receipt of the Certificate for Payment.

9.7 FAILURE OF PAYMENT

In first sentence, strike "seven" and insert "thirty (30)". Also strike "binding dispute resolution" and insert "remedies at law or in equity".

9.8 SUBSTANTIAL COMPLETION

To Subparagraph 9.8.3 - Add the following sentence:

"If the Architect is required to make more than 2 inspections of the same portion of work, the Contractor shall be responsible for all costs associated with subsequent inspections including but not limited to any Architect's fees."

- 9.8.5 In the second sentence, strike "shall" and insert "may".

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY**10.1 SAFETY PRECAUTIONS AND PROGRAMS**

Add the following Paragraphs:

10.1.1.1.1 Each Contractor shall develop a safety program in accordance with the Occupational Safety and Health Act of 1970. A copy of said plan shall be furnished to the Owner and Architect prior to the commencement of that Contractor's Work.

10.1.2 Each Contractor shall appoint a Safety Representative. Safety Representatives shall be someone who is on site on a full time basis. If deemed necessary by the Owner or Architect, Contractor Safety meetings will be scheduled. The attendance of all Safety Representatives will be required. Minutes will be recorded of said meetings by the Contractor and will be distributed to all parties as well as posted in all job offices/trailers etc.

10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Paragraph:

10.2.4.1 As required in the Hazardous Chemical Act of June 1984, all vendors supplying any material that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a caution warning on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in foreseeable emergency situations. Material Safety Data Sheets shall be provided directly to the Owner, along with the shipping slips that include those products.

10.3 HAZARDOUS MATERIALS

Delete Paragraph 10.3.5 in its entirety.

Delete Paragraph 10.3.6 in its entirety.

ARTICLE 11: INSURANCE AND BONDS**11.1 CONTRACTOR'S LIABILITY INSURANCE**

11.1.4 Strike "the Owner" immediately following "(1)" and strike "and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations."

11.2 OWNER'S LIABILITY INSURANCE

Delete Paragraph 11.2 in its entirety.

11.3 PROPERTY INSURANCE

Delete Paragraph 11.3 in its entirety and replace with the following:

11.3 The State will not provide Builder's All Risk Insurance for the Project. The Contractor and all Subcontractors shall provide property coverage for their tools and equipment, as necessary. Any mandatory deductible required by the Contractor's Insurance shall be the responsibility of the Contractor.

11.4 PERFORMANCE BOND AND PAYMENT BOND

- 11.4.1 Add the following sentence: "The bonds will conform to those forms approved by the Office of Management and Budget."

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK**12.2.2 AFTER SUBSTANTIAL COMPLETION**

Add the following Paragraph:

- 12.2.2.1.1 At any time during the progress of the Work, or in any case where the nature of the defects will be such that it is not expedient to have corrected, the Owner, at its option, will have the right to deduct such sum, or sums, of money from the amount of the Contract as it considers justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.
- 12.2.2.1 Strike "one" and insert "two".
- 12.2.2.2 Strike "one" and insert "two".
- 12.2.2.3 Strike "one" and insert "two".
- 12.2.5 In second sentence, strike "one" and insert "two".

ARTICLE 13: MISCELLANEOUS PROVISIONS**13.1 GOVERNING LAW**

Strike "except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4."

13.6 INTEREST

Strike "the date payment is due at such rate as the parties may agree upon in writing or, in the absence hereof, at the legal rate prevailing from time to time at the place where the Project is located." Insert "30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month."

13.7 TIME LIMITS ON CLAIMS

Strike the last sentence.

Add the following Paragraph:

13.8 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS

- 13.8.1 If any provision, specifications or requirement of the Contract Documents conflict or is inconsistent with any statute, law or regulation of the government of the United State of America, the Contractor shall notify the Architect and Owner immediately upon discovery.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT**14.4 TERMINATION BY THE OWNER FOR CONVENIENCE**

Delete Paragraph 14.4.3 in its entirety and replace with the following:

- 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and cost incurred by reason of such termination along with reasonable overhead.

ARTICLE 15: CLAIMS AND DISPUTES

- 15.1.2 Throughout the Paragraph strike "21" and insert "45".

15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

Delete Paragraph 15.1.6 in its entirety.

15.2 INITIAL DECISION

Delete Paragraph 15.2.5 in its entirety and replace with the following:

- 15.2.5 The Architect will approve or reject Claims by written decision, which shall state the reasons therefore and shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be subject to mediation and other remedies at law or in equity.

Delete Paragraph 15.2.6 and its subparagraphs in their entirety.

15.3 MEDIATION

- 15.3.1 Strike "binding dispute resolution" and insert "any or all remedies at law or in equity".

- 15.3.2 In the first sentence, delete "administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement," Strike "binding dispute resolution" and insert "remedies at law and in equity".

15.4 ARBITRATION

Delete Paragraph 15.4 and its sub-sections in its entirety.

END OF SUPPLEMENTARY GENERAL CONDITIONS

GENERAL REQUIREMENTS

TABLE OF ARTICLES

1. GENERAL PROVISIONS
2. OWNER
3. CONTRACTOR
4. ADMINISTRATION OF THE CONTRACT
5. SUBCONTRACTORS
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11. INSURANCE AND BONDS
12. UNCOVERING AND CORRECTION OF WORK
13. MISCELLANEOUS PROVISIONS
14. TERMINATION OR SUSPENSION OF THE CONTRACT

ARTICLE 1: GENERAL**1.1 CONTRACT DOCUMENTS**

1.1.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to an extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

1.1.2 Work including material purchases shall not begin until the Contractor is in receipt of a bonafide State of Delaware Purchase Order. Any work performed or material purchases prior to the issuance of the Purchase Order is done at the Contractor's own risk and cost.

1.2 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

1.2.1 For Public Works Projects financed in whole or in part by state appropriation the Contractor agrees that during the performance of this contract:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin."

ARTICLE 2: OWNER

(NO ADDITIONAL GENERAL REQUIREMENTS – SEE SUPPLEMENTARY GENERAL CONDITIONS)

ARTICLE 3: CONTRACTOR

3.1 Schedule of Values: The successful Bidder shall within twenty (20) days after receiving notice to proceed with the work, furnish to the Owner a complete schedule of values on the various items comprising the work.

3.2 Subcontracts: Upon approval of Subcontractors, the Contractor shall award their Subcontracts as soon as possible after the signing of their own contract and see that all material, their own and those of their Subcontractors, are promptly ordered so that the work will not be delayed by failure of materials to arrive on time.

3.3 Before commencing any work or construction, the General Contractor is to consult with the Owner as to matters in connection with access to the site and the allocation of Ground Areas for the various features of hauling, storage, etc.

- 3.4 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions.
- 3.5 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.
- 3.6 The Contractor warrants to the Owner that materials and equipment furnished will be new and of good quality, unless otherwise permitted, and that the work will be free from defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved, may be considered defective. If required by the Owner, the Contractor shall furnish evidence as to the kind and quality of materials and equipment provided.
- 3.7 Unless otherwise provided, the Contractor shall pay all sales, consumer, use and other similar taxes, and shall secure and pay for required permits, fees, licenses, and inspections necessary for proper execution of the Work.
- 3.8 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith.
- 3.9 The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under contract with the Contractor.
- 3.10 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove from and about the Project all waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials. The Contractor shall be responsible for returning all damaged areas to their original conditions.
- 3.11 STATE LICENSE AND TAX REQUIREMENTS
- 3.11.1 Each Contractor and Subcontractor shall be licensed to do business in the State of Delaware and shall pay all fees and taxes due under State laws. In conformance with Section 2503, Chapter 25, Title 30, Delaware Code, "the Contractor shall furnish the Delaware Department of Finance within ten (10) days after entering into any contract with a contractor or subcontractor not a resident of this State, a statement of total value of such contract or contracts together with the names and addresses of the contracting parties."
- 3.12 The Contractor shall comply with all requirements set forth in Section 6962, Chapter 69, Title 29 of the Delaware Code.

- 3.13 During the contract Work, the Contractor and each Subcontractor, shall implement an Employee Drug Testing Program in accordance with OMB Regulation 4104 - "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects". "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.1 CONTRACT SURETY

4.1.1 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

- 4.1.2 All bonds will be required as follows unless specifically waived elsewhere in the Bidding Documents.

- 4.1.3 Contents of Performance Bonds – The bond shall be in the form approved by the Office of Management and Budget. The bond shall be conditioned upon the faithful compliance and performance by the successful bidder of each and every term and condition of the contract and the proposal, plans, specifications, and bid documents thereof. Each term and condition shall be met at the time and in the manner prescribed by the Contract, Bid documents and the specifications, including the payment in full to every person furnishing material or performing labor in the performance of the Contract, of all sums of money due the person for such labor and material. (The bond shall also contain the successful bidder's guarantee to indemnify and save harmless the State and the agency from all costs, damages and expenses growing out of or by reason of the Contract in accordance with the Contract.)

- 4.1.4 Invoking a Performance Bond – The agency may, when it considers that the interest of the State so require, cause judgment to be confessed upon the bond.

- 4.1.5 Within twenty (20) days after the date of notice of award of contract, the Bidder to whom the award is made shall furnish a Performance Bond and Labor and Material Payment Bond, each equal to the full amount of the Contract price to guarantee the faithful performance of all terms, covenants and conditions of the same. The bonds are to be issued by an acceptable Bonding Company licensed to do business in the State of Delaware and shall be issued in duplicate.

- 4.1.6 Performance and Payment Bonds shall be maintained in full force (warranty bond) for a period of two (2) years after the date of the Certificate for Final Payment. The Performance Bond shall guarantee the satisfactory completion of the Project and that the Contractor will make good any faults or defects in his work which may develop during the period of said guarantees as a result of improper or defective workmanship, material or apparatus, whether furnished by themselves or their Sub-Contractors. The Payment Bond shall guarantee that the Contractor shall pay in full all persons, firms or corporations who furnish labor or material or both labor and material for, or on account of, the work included herein. The bonds shall be paid for by this Contractor. The Owner shall have the right to demand that the proof parties signing the bonds are duly authorized to do so.

4.2 FAILURE TO COMPLY WITH CONTRACT

- 4.2.1 If any firm entering into a contract with the State, or Agency that neglects or refuses to perform or fails to comply with the terms thereof, the Agency which signed the Contract may terminate the Contract and proceed to award a new contract in accordance with this Chapter 69, Title 29 of the Delaware Code or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond. Nothing herein shall preclude the Agency from pursuing additional remedies as otherwise provided by law.

4.3 CONTRACT INSURANCE AND CONTRACT LIABILITY

- 4.3.1 In addition to the bond requirements stated in the Bid Documents, each successful Bidder shall purchase adequate insurance for the performance of the Contract and, by submission of a Bid, agrees to indemnify and save harmless and to defend all legal or equitable actions brought against the State, any Agency, officer and/or employee of the State, for and from all claims of liability which is or may be the result of the successful Bidder's actions during the performance of the Contract.

- 4.3.2 The purchase or nonpurchase of such insurance or the involvement of the successful Bidder in any legal or equitable defense of any action brought against the successful Bidder based upon work performed pursuant to the Contract will not waive any defense which the State, its agencies and their respective officers, employees and agents might otherwise have against such claims, specifically including the defense of sovereign immunity, where applicable, and by the terms of this section, the State and all agencies, officers and employees thereof shall not be financially responsible for the consequences of work performed, pursuant to said contract.

4.4 RIGHT TO AUDIT RECORDS

- 4.4.1 The Owner shall have the right to audit the books and records of a Contractor or any Subcontractor under any Contract or Subcontract to the extent that the books and records relate to the performance of the Contract or Subcontract.

- 4.4.2 Said books and records shall be maintained by the Contractor for a period of seven (7) years from the date of final payment under the Prime Contract and by the Subcontractor for a period of seven (7) years from the date of final payment under the Subcontract.

ARTICLE 5: SUBCONTRACTORS

5.1 SUBCONTRACTING REQUIREMENTS

- 5.1.1 All contracts for the construction, reconstruction, alteration or repair of any public building (not a road, street or highway) shall be subject to the following provisions:
1. A contract shall be awarded only to a Bidder whose Bid is accompanied by a statement containing, for each Subcontractor category, the name and address (city or town and State only – street number and P.O. Box addresses not required) of the subcontractor whose services the Bidder intends to use in performing the Work and providing the material for such Subcontractor category.

2. A Bid will not be accepted nor will an award of any Contract be made to any Bidder which, as the Prime Contractor, has listed itself as the Subcontractor for any Subcontractor unless:

- A. It has been established to the satisfaction of the awarding Agency that the Bidder has customarily performed the specialty work of such Subcontractor category by artisans regularly employed by the Bidder's firm;
- B. That the Bidder is duly licensed by the State to engage in such specialty work, if the State requires licenses; and
- C. That the Bidder is recognized in the industry as a bona fide Subcontractor or Contractor in such specialty work and Subcontractor category.

5.1.2 The decision of the awarding Agency as to whether a Bidder who list itself as the Subcontractor for a Subcontractor category shall be final and binding upon all Bidders, and no action of any nature shall lie against any awarding agency or its employees or officers because of its decision in this regard.

5.1.3 After such a Contract has been awarded, the successful Bidder shall not substitute another Subcontractor for any Subcontractor whose name was set forth in the statement which accompanied the Bid without the written consent of the awarding Agency.

5.1.4 No Agency shall consent to any substitution of Subcontractors unless the Agency is satisfied that the Subcontractor whose name is on the Bidders accompanying statement:

- A. Is unqualified to perform the work required;
- B. Has failed to execute a timely reasonable Subcontract;
- C. Has defaulted in the performance on the portion of the work covered by the Subcontract;
- D. Is no longer engaged in such business.

5.1.5 Should a Bidder be awarded a contract, such successful Bidder shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.1.6 The Contractor may employ additional Subcontractors on the jobsite only after submitting a copy of the Subcontractor's Employee Drug Testing Program to the Owner for approval. A Contractor or Subcontractor shall not commence work until the Owner has concluded its review and determined that the submitted Employee Drug Testing Program complies with OMB Regulation 4104.

5.2 PENALTY FOR SUBSTITUTION OF SUBCONTRACTORS

- 5.2.1 Should the Contractor fail to utilize any or all of the Subcontractors in the Contractor's Bid statement in the performance of the Work on the public bidding, the Contractor shall be penalized in the amount of (project specific amount*). The Agency may determine to deduct payments of the penalty from the Contractor or have the amount paid directly to the Agency. Any penalty amount assessed against the Contractor may be remitted or refunded, in whole or in part, by the Agency awarding the Contract, only if it is established to the satisfaction of the Agency that the Subcontractor in question has defaulted or is no longer engaged in such business. No claim for the remission or refund of any penalty shall be granted unless an application is filed within one year after the liability of the successful Bidder accrues. All penalty amounts assessed and not refunded or remitted to the contractor shall be reverted to the State.

*one (1) percent of contract amount not to exceed \$10,000

5.3 ASBESTOS ABATEMENT

- 5.3.1 The selection of any Contractor to perform asbestos abatement for State-funded projects shall be approved by the Office of Management and Budget, Division of Facilities Management pursuant to Chapter 78 of Title 16.

5.4 STANDARDS OF CONSTRUCTION FOR THE PROTECTION OF THE PHYSICALLY HANDICAPPED

- 5.4.1 All Contracts shall conform with the standard established by the Delaware Architectural Accessibility Board unless otherwise exempted by the Board.

5.5 CONTRACT PERFORMANCE

- 5.5.1 Any firm entering into a Public Works Contract that neglects or refuses to perform or fails to comply with its terms, the Agency may terminate the Contract and proceed to award a new Contract or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond.

ARTICLE 6: CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

- 6.1 The Owner reserves the right to simultaneously perform other construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other Projects at the same site.

- 6.2 The Contractor shall afford the Owner and other Contractors reasonable opportunity for access and storage of materials and equipment, and for the performance of their activities, and shall connect and coordinate their activities with other forces as required by the Contract Documents.

ARTICLE 7: CHANGES IN THE WORK

- 7.1 The Owner, without invalidating the Contract, may order changes in the Work consisting of Additions, Deletions, Modifications or Substitutions, with the Contract Sum and Contract completion date being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Professional, as the duly authorized agent, the Contractor and the Owner.

- 7.2 The Contract Sum and Contract Completion Date shall be adjusted only by a fully executed Change Order.
- 7.3 The additional cost, or credit to the Owner resulting from a change in the Work shall be by mutual agreement of the Owner, Contractor and the Architect. In all cases, this cost or credit shall be based on the 'DPE' wages required and the "invoice price" of the materials/equipment needed.
- 7.3.1 "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes prevailing wage rates plus a maximum multiplier of 1.35 times DPE. For example if the prevailing wage rate is \$50/hour, the DPE would be \$67.50/hour (50×1.35).
- 7.3.2 "Invoice price" of materials/equipment shall be defined to mean the actual cost of materials and/or equipment that is paid by the Contractor, (or subcontractor), to a material distributor, direct factory vendor, store, material provider, or equipment leasing entity. Rates for equipment that is leased and/or owned by the Contractor or subcontractor(s) shall not exceed those listed in the latest version of the "Means Building Construction Cost Data" publication.
- 7.3.3 In addition to the above, the General Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the General Contractor's own forces. For additional subcontractor work, the Subcontractor is allowed a fifteen (15) percent overhead and profit on change order work above and beyond the direct costs stated previously. To this amount, the General Contractor will be allowed a mark-up not exceeding seven and one half percent (7.5%) on the subcontractors work. These mark-ups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc. No markup is permitted on the work of the subcontractors subcontractor. No additional costs shall be allowed for changes related to the Contractor's onsite superintendent/staff, or project manager, unless a change in the work changes the project duration and is identified by the CPM schedule. There will be no other costs associated with the change order.

ARTICLE 8: TIME

- 8.1 Time limits, if any, are as stated in the Project Manual. By executing the Agreement, the Contractor confirms that the stipulated limits are reasonable, and that the Work will be completed within the anticipated time frame.
- 8.2 If progress of the Work is delayed at any time by changes ordered by the Owner, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be extended for such reasonable time as the Owner may determine.
- 8.3 Any extension of time beyond the date fixed for completion of the construction and acceptance of any part of the Work called for by the Contract, or the occupancy of the building by the Owner, in whole or in part, previous to the completion shall not be deemed a waiver by the Owner of his right to annul or terminate the Contract for abandonment or delay in the matter provided for, nor relieve the Contractor of full responsibility.

8.4 SUSPENSION AND DEBARMENT

8.4.1 Per Section 6962(d)(14), Title 29, Delaware Code, "Any Contractor who fails to perform a public works contract or complete a public works project within the time schedule established by the Agency in the Invitation To Bid, may be subject to Suspension or Debarment for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the Project."

8.4.2 "Upon such failure for any of the above stated reasons, the Agency that contracted for the public works project may petition the Director of the Office of Management and Budget for Suspension or Debarment of the Contractor. The Agency shall send a copy of the petition to the Contractor within three (3) working days of filing with the Director. If the Director concludes that the petition has merit, the Director shall schedule and hold a hearing to determine whether to suspend the Contractor, debar the Contractor or deny the petition. The Agency shall have the burden of proving, by a preponderance of the evidence, that the Contractor failed to perform or complete the public works project within the time schedule established by the Agency and failed to do so for one or more of the following reasons: a) failure to supply the adequate labor supply ratio for the project; b) inadequate financial resources; or, c) poor performance on the project. Upon a finding in favor of the Agency, the Director may suspend a Contractor from Bidding on any project funded, in whole or in part, with public funds for up to 1 year for a first offense, up to 3 years for a second offense and permanently debar the Contractor for a third offense. The Director shall issue a written decision and shall send a copy to the Contractor and the Agency. Such decision may be appealed to the Superior Court within thirty (30) days for a review on the record."

8.5 RETAINAGE

8.5.1 Per Section 6962(d)(5) a 2, Title 29, Delaware Code: The Agency may at the beginning of each public works project establish a time schedule for the completion of the project. If the project is delayed beyond the completion date due to the Contractor's failure to meet their responsibilities, the Agency may forfeit, at its discretion, all or part of the Contractor's retainage.

8.5.2 This forfeiture of retainage also applies to the timely completion of the punchlist. A punchlist will only be prepared upon the mutual agreement of the Owner, Architect and Contractor. Once the punchlist is prepared, all three parties will by mutual agreement, establish a schedule for its completion. Should completion of the punchlist be delayed beyond the established date due to the Contractor's failure to meet their responsibilities, the Agency may hold permanently, at its discretion, all or part of the Contractor's retainage.

ARTICLE 9: PAYMENTS AND COMPLETION

9.1 APPLICATION FOR PAYMENT

9.1.1 Applications for payment shall be made upon AIA Document G702. There will be a five percent (5%) retainage on all Contractor's monthly invoices until completion of the project. This retainage may become payable upon receipt of all required closeout documentation, provided all other requirements of the Contract Documents have been met.

9.1.2 A date will be fixed for the taking of the monthly account of work done. Upon receipt of Contractor's itemized application for payment, such application will be audited, modified, if found necessary, and approved for the amount. Statement shall be submitted to the Owner.

GENERAL REQUIREMENTS

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9.1.3 Section 6516, Title 29 of the Delaware Code annualized interest is not to exceed 12% per annum beginning thirty (30) days after the "presentment" (as opposed to the date) of the invoice.

9.2 PARTIAL PAYMENTS

9.2.1 Any public works Contract executed by any Agency may provide for partial payments at the option of the Owner with respect to materials placed along or upon the sites or stored at secured locations, which are suitable for use in the performance of the contract.

9.2.2 When approved by the agency, partial payment may include the values of tested and acceptable materials of a nonperishable or noncontaminative nature which have been produced or furnished for incorporation as a permanent part of the work yet to be completed, provided acceptable provisions have been made for storage.

9.2.2.1 Any allowance made for materials on hand will not exceed the delivered cost of the materials as verified by invoices furnished by the Contractor, nor will it exceed the contract bid price for the material complete in place.

9.2.3 If requested by the Agency, receipted bills from all Contractors, Subcontractors, and material, men, etc., for the previous payment must accompany each application for payment. Following such a request, no payment will be made until these receipted bills have been received by the Owner.

9.3 SUBSTANTIAL COMPLETION

9.3.1 When the building has been made suitable for occupancy, but still requires small items of miscellaneous work, the Owner will determine the date when the project has been substantially completed.

9.3.2 If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and without terminating the Contract, the Owner may make payment of the balance due for the portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment that it shall not constitute a waiver of claims.

9.3.3 On projects where commissioning is included, the commissioning work as defined in the specifications must be complete prior to the issuance of substantial completion.

9.4 FINAL PAYMENT

9.4.1 Final payment, including the five percent (5%) retainage if determined appropriate, shall be made within thirty (30) days after the Work is fully completed and the Contract fully performed and provided that the Contractor has submitted the following closeout documentation (in addition to any other documentation required elsewhere in the Contract Documents):

9.4.1.1 Evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid,

9.4.1.2 An acceptable RELEASE OF LIENS,

9.4.1.3 Copies of all applicable warranties,

9.4.1.4 As-built drawings,

- 9.4.1.5 Operations and Maintenance Manuals,
- 9.4.1.6 Instruction Manuals,
- 9.4.1.7 Consent of Surety to final payment.
- 9.4.1.8 The Owner reserves the right to retain payments, or parts thereof, for its protection until the foregoing conditions have been complied with, defective work corrected and all unsatisfactory conditions remedied.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

- 10.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take all reasonable precautions to prevent damage, injury or loss to: workers, persons nearby who may be affected, the Work, materials and equipment to be incorporated, and existing property at the site or adjacent thereto. The Contractor shall give notices and comply with applicable laws ordinances, rules regulations, and lawful orders of public authorities bearing on the safety of persons and property and their protection from injury, damage, or loss. The Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by the Contractor, a Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.
- 10.2 The Contractor shall notify the Owner in the event any existing hazardous material such as lead, PCBs, asbestos, etc. is encountered on the project. The Owner will arrange with a qualified specialist for the identification, testing, removal, handling and protection against exposure or environmental pollution to comply with applicable regulation laws and ordinances. The Contractor and Architect will not be required to participate in or to perform this operation. Upon completion of this work, the Owner will notify the Contractor and Architect in writing the area has been cleared and approved by the authorities in order for the work to proceed. The Contractor shall attach documentation from the authorities of said approval.
- 10.3 As required in the Hazardous Chemical Information Act of June 1984, all vendors supplying any materials that may be defined as hazardous, must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a warning caution on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation. Material Safety Data Sheets must be provided directly to the Owner along with the shipping slips that include those products.
- 10.4 The Contractor shall certify to the Owner that materials incorporated into the Work are free of all asbestos. This certification may be in the form of Material Safety Data Sheet (MSDS) provided by the product manufacturer for the materials used in construction, as specified or as provided by the Contractor.

ARTICLE 11: INSURANCE AND BONDS

- 11.1 The Contractor shall carry all insurance required by law, such as Unemployment Insurance, etc. The Contractor shall carry such insurance coverage as they desire on their own property such as a field office, storage sheds or other structures erected upon the project site that belong to them and for their own use. The Subcontractors involved with this project shall carry whatever insurance protection they consider necessary to cover the loss of any of their personal property, etc.

- 11.2 Upon being awarded the Contract, the Contractor shall obtain a minimum of two (2) copies of all required insurance certificates called for herein, and submit one (1) copy of each certificate, to the Owner, within 20 days of contract award.
- 11.3 Bodily Injury Liability and Property Damage Liability Insurance shall, in addition to the coverage included herein, include coverage for injury to or destruction of any property arising out of the collapse of or structural injury to any building or structure due to demolition work and evidence of these coverages shall be filed with and approved by the Owner.
- 11.4 The Contractor's Property Damage Liability Insurance shall, in addition to the coverage noted herein, include coverage on all real and personal property in their care, custody and control damaged in any way by the Contractor or their Subcontractors during the entire construction period on this project.
- 11.5 Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, shall not be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and their Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.
- 11.6 Certificates of the insurance company or companies stating the amount and type of coverage, terms of policies, etc., shall be furnished to the Owner, within 20 days of contract award.
- 11.7 The Contractor shall, at their own expense, (in addition to the above) carry the following forms of insurance:

11.7.1 Contractor's Contractual Liability Insurance

Minimum coverage to be:

Bodily Injury	\$500,000 \$1,000,000 \$1,000,000	for each person for each occurrence aggregate
Property Damage	\$500,000 \$1,000,000	for each occurrence aggregate

11.7.2 Contractor's Protective Liability Insurance

Minimum coverage to be:

Bodily Injury	\$500,000 \$1,000,000 \$1,000,000	for each person for each occurrence aggregate
Property Damage	\$500,000 \$500,000	for each occurrence aggregate

11.7.3 Automobile Liability Insurance

Minimum coverage to be:

Bodily Injury	\$1,000,000	for each person
	\$1,000,000	for each occurrence
Property Damage	\$500,000	per accident

11.7.4 Prime Contractor's and Subcontractors' policies shall include contingent and contractual liability coverage in the same minimum amounts as 11.7.1 above.

11.7.5 Workmen's Compensation (including Employer's Liability):

11.7.5.1 Minimum Limit on employer's liability to be as required by law.

11.7.5.2 Minimum Limit for all employees working at one site.

11.7.6 Certificates of Insurance must be filed with the Owner guaranteeing fifteen (15) days prior notice of cancellation, non-renewal, or any change in coverages and limits of liability shown as included on certificates.

11.7.7 Social Security Liability

11.7.7.1 With respect to all persons at any time employed by or on the payroll of the Contractor or performing any work for or on their behalf or in connection with or arising out of the Contractor's business, the Contractor shall accept full and exclusive liability for the payment of any and all contributions or taxes or unemployment insurance, or old age retirement benefits, pensions or annuities now or hereafter imposed by the Government of the United States and the State or political subdivision thereof, whether the same be measured by wages, salaries or other remuneration paid to such persons or otherwise.

11.7.7.2 Upon request, the Contractor shall furnish Owner such information on payrolls or employment records as may be necessary to enable it to fully comply with the law imposing the aforesaid contributions or taxes.

11.7.7.3 If the Owner is required by law to and does pay any and/or all of the aforesaid contributions or taxes, the Contractor shall forthwith reimburse the Owner for the entire amount so paid by the Owner.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.1 The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of two years from the date of Substantial Completion, or by terms of an applicable special warranty required by the Contract Documents. The provisions of this Article apply to work done by Subcontractors as well as to Work done by direct employees of the Contractor.

12.2 At any time during the progress of the work, or in any case where the nature of the defects shall be such that it is not expedient to have them corrected, the Owner, at their option, shall have the right to deduct such sum, or sums, of money from the amount of the contract as they consider justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

ARTICLE 13: MISCELLANEOUS PROVISIONS**13.1 CUTTING AND PATCHING**

- 13.1.1 The Contractor shall be responsible for all cutting and patching. The Contractor shall coordinate the work of the various trades involved.

13.2 DIMENSIONS

- 13.2.1 All dimensions shown shall be verified by the Contractor by actual measurements at the project site. Any discrepancies between the drawings and specifications and the existing conditions shall be referred to the Owner for adjustment before any work affected thereby has been performed.

13.3 LABORATORY TESTS

- 13.3.1 Any specified laboratory tests of material and finished articles to be incorporated in the work shall be made by bureaus, laboratories or agencies approved by the Owner and reports of such tests shall be submitted to the Owner. The cost of the testing shall be paid for by the Contractor.

- 13.3.2 The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by the Owner.

13.4 ARCHAEOLOGICAL EVIDENCE

- 13.4.1 Whenever, in the course of construction, any archaeological evidence is encountered on the surface or below the surface of the ground, the Contractor shall notify the authorities of the State Historic Preservation Office and suspend work in the immediate area for a reasonable time to permit those authorities, or persons designated by them, to examine the area and ensure the proper removal of the archaeological evidence for suitable preservation by the Division of Historical and Cultural Affairs.

13.5 GLASS REPLACEMENT AND CLEANING

- 13.5.1 The General Contractor shall replace without expense to the Owner all glass broken during the construction of the project. If job conditions warrant, at completion of the job the General Contractor shall have all glass cleaned and polished.

13.6 WARRANTY

- 13.6.1 For a period of two (2) years from the date of substantial completion, as evidenced by the date of final acceptance of the work, the contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or workmanship performed by the contractor or any of his subcontractors or suppliers. However, manufacturer's warranties and guarantees, if for a period longer than two (2) years, shall take precedence over the above warranties. The contractor shall remedy, at his own expense, any such failure to conform or any such defect. The protection of this warranty shall be included in the Contractor's Performance Bond.

ARTICLE 14: TERMINATION OF CONTRACT

- 14.1 If the Contractor defaults or persistently fails or neglects to carry out the Work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor, may make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, and the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. If the costs of finishing the Work exceed any unpaid compensation due the Contractor, the Contractor shall pay the difference to the Owner.
- 14.2 "If the continuation of this Agreement is contingent upon the appropriation of adequate state, or federal funds, this Agreement may be terminated on the date beginning on the first fiscal year for which funds are not appropriated or at the exhaustion of the appropriation. The Owner may terminate this Agreement by providing written notice to the parties of such non-appropriation. All payment obligations of the Owner will cease upon the date of termination. Notwithstanding the foregoing, the Owner agrees that it will use its best efforts to obtain approval of necessary funds to continue the Agreement by taking appropriate action to request adequate funds to continue the Agreement."

END OF GENERAL REQUIREMENTS

PART 1. GENERAL

1.1. RELATED DOCUMENTS

- A. Site sketch and general provisions of the Contract, including General and Supplementary Conditions and Master Specification Sections, apply to this Section and other bound materials within this Scope Specific document.
- B. All work associated with this project is to be performed in accordance with this Scope Specific 01013 Document, dated January 27, 2026 and Master Specifications, dated July 28th 2025, approved by DFM.

1.2. WORK COVERED BY CONTRACT DOCUMENTS

- A. The Project consists of the removal, packaging, transportation, and disposal, of designated asbestos materials and non-asbestos materials as indicated within this Scope Specific Specification.
- B. This Work includes the performance of all supplemental Work indicated which is required to accomplish the project. These items may include but are not limited to the following:
 - 1. Construct a 3-stage decontamination (decon) unit with shower to be used for personnel and equipment with separate waste load out chamber.
 - 2. Construct a full containment enclosure system under negative pressure with a differential of -.025 inches of water. Attach 2 stage decon and waste loadout to enclosure system.
 - 3. Collection and packaging of universal waste that may be impacted during the asbestos abatement project.
 - 4. Collection and packaging of universal waste.
 - 5. Perform demolition of all non-asbestos building materials (ceiling tiles, ceiling grid/track and wood wall paneling to access all asbestos containing materials.
 - 6. Removal of asbestos materials on the within full enclosure systems in accordance with industry standards.
 - 7. Transportation and disposal of asbestos waste to DSWA Cherry Island Landfill in accordance with State of Delaware and Federal EPA regulations.
 - 8. Specific work areas are identified Part 4 of this specification and the Sketch.
 - 9. Refer to section 1.7 of this specification for tasks relating to the COVID-19 pandemic.

Any asbestos abatement related activities inclusive of mobilizing equipment and preparatory work that is covered under this contract will not commence until a certified Project Monitor (the Owner's Representative from a Certified Professional Service Firm) is on site. The Project monitor shall always remain on site during the project.

- C. Project Location: **New Forensics Science Building
3000 Newport Gap Pike
Wilmington, Delaware 19808**
- D. Owner: **State of Delaware
Division of Facilities Management**
- E. Contract Documents: **Scope Specific 01013 Document, dated January 27, 2026 and
Master Specifications, dated, July 28th 2025, prepared by:

Harvard Environmental, Inc.
760 Pulaski Highway
Bear, Delaware 19701**

1.3. GENERAL INCLUSIONS

- A. Bonding will be required for the project.
- B. All work shall conform to contract specifications and shall be performed in strict compliance with all applicable federal, state, and local regulations. Regulatory compliance is the sole responsibility of the Contractor.
- C. The Contractor shall obtain all permits which may be required to complete this project.
- D. The Contractor shall be responsible for notifying all external organizations which require notification, these notifications may include but are not limited to, EPA Regional Office, Governing State Bodies, Local Municipalities, Emergency Personnel, and Waste Disposal Site.
- E. Copies of all notifications, on their official forms, shall be provided to the Owner's Representative prior to project commencement. Any revisions required to the notifications are the sole responsibility of the Contractor. Copies shall be provided to the Owner's Representative immediately upon submittal.
- F. The Contractor shall be responsible for all damages incurred from project-related activities and/or personnel assigned to the project. This aspect of accountability includes interior and exterior damages.
- G. During the time which areas are considered regulated, all personnel entering the area to perform any type of support services shall adhere to the safety procedures and training requirements required for the entry.
- H. The work area and job site shall be restricted to designated contract personnel and authorized visitors. All visitors will require site authorization, safety health and environmental orientation, and clearance from the Owner or the Owner's Representative prior to entering the site.
- I. A copy of this "Scope Specific Document" as well as the Master Specification shall be always in the possession of the Contractor's assigned Supervision during the execution of this project.

1.4. COMPLIANCE WITH LAWS

- A. The contractor shall be responsible for complying with all aspects of the scope and specifications. All work shall be performed in strict accordance with applicable local, state, and federal regulations governing materials and activities in address in the specifications.
- B. Contractor shall notify the Owner and the Owner's Representative promptly, in writing, if any scope or specifications are at variance with any laws or regulations. The contractor shall bear any cost incurred in the event of its failure to give such notice.

1.5. ASBESTOS-CONTAINING MATERIALS

- A. The Work of this contract involves activities that will disturb asbestos-containing materials (ACM). The location and type of ACM known to be present at the worksite is set forth in the sketch. If any other ACM or presumed asbestos containing material (PACM) is found, notify the owner, other employers and employees about the location and quantity of the ACM or PACM within 24 hours of the discovery.

1.6. ASBESTOS HEALTH RISK

- A. The disturbance or dislocation of ACM may cause asbestos fibers to be released into the building's atmosphere, thereby creating a potential health risk to workers, and building occupants. Apprise all workers, supervisory personnel, subcontractors, and consultants who will be at the job site of the seriousness of the risk and of proper work procedures which must be followed.
- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants may encounter, disturb, or otherwise function in the immediate vicinity of any identified ACM, take appropriate continuous measures as necessary to protect all building occupants from the risk of exposure to airborne asbestos. Such measures shall include the procedures and methods described herein, and compliance with regulations of applicable federal, state, and local agencies.

1.7. OTHER HEALTH RISKS

- A. Contractors shall be required to abide by any facility, agency, Federal, and State of Delaware regulations related to COVID-19, including disinfection and cleaning, restricted access, face coverings, and social distancing. The contractor shall make necessary adjustments to daily routines to comply with all rules.
- B. Contractors shall submit their company's standard operating procedure (SOP) for performing contract work at remote sites prior to entering the facility for the commencement of the work. The SOP should include but not limited to:
 - 1. Current state of the art PPE.
 - 2. Appropriate personal hygiene management and controls.
 - 3. Initiatives for 'distancing' amongst co-workers and interest parties to the contract.
 - 4. Cleaning and disinfecting procedures and products for employees, materials, and equipment in accordance with CDC and EPA recommendations for the COVID-19 virus.

1.8. CONTRACTOR USE OF PREMISES

- A. General: During the construction period the Contractor shall be provide temporary bathroom/washroom facilities during all phases of project.
- B. Use of the Site: Limit use of the premises to work in the areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 - 1. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles always. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment onsite.
 - 2. Smoking: Smoking, tobacco products and open fires will not be permitted within the building or on grounds.

1.9. FUTURE WORK

- C. Future Contract: It is the intention of renovating the remaining 1912 Building and demolition of section of structure titled "Addition". Others to install new and repair 1912 building upon completion of the abatement contractor's work.

1.10. WORK UNDER OTHER CONTRACTS

- A. Separate Contract: The Owner has awarded a separate contract for performance of certain construction operations at the site. Those operations will be conducted continuous with work under this Contract. That Contract includes the following:

1. Contract: A separate contract has been awarded to Harvard Environmental, Inc. to act as the Owner's Representative in support of on and off-site project-related work as indicated in the project specifications.

1.11. PROJECT SCOPE SPECIFIC ISSUES AND COORDINATION

A. WORK SCHEDULES

1. All work associated with this project shall be conducted on Monday through Friday 8:00 AM to 3:30 PM. Commencement date is to be determined.
2. Working on the site beyond the hours indicated above will require written approval by the Owner or the Owner's Representative.

B. WORK SEQUENCE

1. The work will be conducted under a single mobilization by the contractor. Phasing of the work shall be performed consistently with the schedules provided herein. **Multiple phases may be performed concurrently provided that critical barriers are installed and maintained, cross-contamination is prevented and final air clearance has been completed.**

Phase #1 – Mobilization

- a. Mobilization
- b. Deliver necessary equipment and waste dumpsters onsite.
- c. Fabrication of remote 3-stage decon (Main Entrance/Main Laydown Area) and waste loadout chamber at entrance to work area.

Phase #2 – 1912 Building – 3rd Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 3rd Floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate 1912 Building 3rd floor from remaining work areas

Phase #3 – 1912 Building - 2nd Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.

- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 2nd Floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate 1912 Building 2nd floor from remaining work areas.

Phase #4 – 1912 Building – 1st Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 1st Floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate 1912 Building 1st floor from remaining work areas.

Phase #5 – 1912 Building – Basement

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located in the basement level.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate 1912 Building basement from remaining work areas.

Phase #6 – Addition – 5th Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.

- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 5th floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate Addition 5th Floor from remaining work areas.

Phase #7 – Addition – 4th Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 4th floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate Addition 4th Floor from remaining work areas.

Phase #8 – Addition – 3rd Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 3rd floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate Addition 3rd floor from remaining work areas.

Phase #9 – Addition – 2nd Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 2nd floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate Addition 2nd floor from remaining work areas.

Phase #10 – Addition – 1st Floor

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the 1st floor.
- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate Addition 1st floor from remaining work areas.

Phase #11 – Addition – Basement

- a. Fabrication of attached 2-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Perform all non-asbestos building material interior demolition (ceiling tiles, ceiling grid and wood wall paneling).
- j. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- k. Removal of all interior asbestos materials located on the basement level.

- l. Packaging of asbestos waste labeled for transportation to landfill.
- m. Interior asbestos final visual clearance inspection.
- n. TEM air clearance sampling and analysis.
- o. Isolate Addition Basement Level from remaining work areas.

Phase #12 – Addition and 1912 – Exterior

- a. Construct regulated areas utilize asbestos red tape and install drop cloth at location of window removal, building caulk removal.
- b. Removal of all exterior asbestos materials (Windows, Building Caulking and Roofing Materials).
- c. Exterior asbestos final visual inspection.
- d. Remove all critical barriers installed to prevent cross-contamination of work sequence.
- e. Demobilization of all equipment and personnel from the site.
- f. Transportation of all remaining waste to approved asbestos waste landfill.

Phase #13 – Garage

- a. Fabrication of attached 3-stage decon and waste loadout chamber with manometer.
- b. Establish sufficient negative air within work area/containment.
- c. Install critical barriers throughout work area.
- d. Decontaminate all movable furnishings/objects within the building.
- e. Dispose of all furnishing/objects once decontaminated into construction dumpster.
- f. Pre-cleaning of work area.
- g. Pre-cleaning inspection of work area.
- h. Fabrication of enclosure systems/containment.
- i. Collect and package all universal waste scheduled to be disturbed during asbestos abatement.
- j. Removal of all interior cement panels asbestos materials.
- k. Packaging of asbestos waste labeled for transportation to landfill.
- l. Interior asbestos final visual clearance inspection.
- m. TEM air clearance sampling and analysis.
- n. Removal of asbestos containing window materials.
- o. Packaging of asbestos waste labeled for transportation to landfill.
- p. Exterior asbestos final visual inspection.

C. EXISTING ELECTRICAL SYSTEMS

- 1. Contractor will utilize portable generators during all phases of the project.
- 2. All power at the site is currently inactive.
- 3. Contractors shall provide GFCI electrical protection to all equipment to support the project.

D. EXISTING WATER FACILITIES

- 1. Cold water services are currently inactive, and contractors are required to bring water sources on site for the project.
- 2. The Contractor shall be responsible for bringing the temporary water to the areas of work and to provide a portable hot water heater to support the personnel shower supply.

E. SPRINKLER / FIRE DETECTION SYSTEM CONSIDERATIONS

- 1. Current sprinkler system/fire detection system within the structure are not operational.
- 2. The Contractor shall provide necessary fire extinguishers within all work areas in case of fire during execution of the work.

F. ASBESTOS REMOVAL AND CONTROL MEASURES

1. Work under the contract shall include the complete removal and disposal of the materials identified on the plan.
2. Fabrication of a 3-stage decon unit for use by personnel and equipment at the main entrance to the enclosures systems and 2-stage decon attached to active designated work area enclosures systems. Contractor will decontaminate at 2-stage decon the immediately proceed to 3-stage remote decontamination unit.
3. Removal of asbestos materials using industry standard hand tool methods.
4. Preparation of work area for final visual and air clearances using TEM AHERA method of sampling and analysis. The samples must yield ≤ 70 structures to achieve "clean air" results as a protocol for release.
5. Packaging of asbestos waste in double 6 mil thick poly bags labeled for transportation to landfill.

G. POST PROJECT – CONDITION OF THE FACILITIES

1. The Contractor shall be expected to leave the facilities in a like condition as at the on-set of the project.

1.12. OTHER PROJECT CONSIDERATIONS

A. WORKER PROTECTION

1. Respiratory protection for all phases of the project will be PAPR with HEPA filtration.
2. Contractor shall poly spun, Tyvek or equivalent materials during all phases of the project.
3. Contractor's personnel and Subcontractors shall wear hard hats, safety toe work shoes, and safety glasses with side shields always while on site.
4. Safety glasses, including all components (frames, lenses, and side shields) shall conform to ANSI Standard Z87.1. Slip on, flimsy plastic side shields are not permitted.
5. Leather gloves are required when doing work in which cuts and punctures may occur. During instances of handling knives and razors, composite gloves which incorporate cut resistant fibers, shall be worn opposite the cutting hand.
6. All Personal Protective Equipment shall be provided by the Contractor at no cost to the Owner or the Owner's Representative.
7. Non-Compliance with the site requirements regarding use of PPE shall warrant removal of personnel from the premises.

B. WORKER TRAINING

1. AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).
2. State and Local License: All workers are to be trained, certified, and accredited as required by the State of Delaware.
3. Training - Class I: Train in accordance with 29 CFR 1926.1101. Provide training for all workers who will perform Class I operations that is the equivalent in curriculum, training method and length to the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

C. MEDICAL SURVEILLANCE

1. Provide a medical surveillance program for all employees who are:
 - a. engaged in Class I, II and III work for a combined total of 30 or more days per year, or,
 - b. are exposed at or above the permissible exposure limit or excursion limit, or,
 - c. before an employee can be assigned to work requiring use of a respirator.

2. Provide a medical surveillance program and physician's opinion before a respirator is assigned as required by 29 CFR 1910.134 and 29 CFR 1926.103(e)(10) .
3. Provide medical examination that as a minimum meets OSHA requirement as set forth in 29 CFR 1926.1101. In addition, require that the physician provides an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.

D. SMOKING AND TOBACCO USE

1. Smoking or use of tobacco products by Contractor employees shall be considered cause to require the Contractor to remove that employee from the site.

1.13. AIR MONITORING BY THE OWNER

- A. The Owner has contracted for air monitoring. Air monitoring will be conducted both inside and outside of the work area while work is in progress. PCM shall be the analysis method for all asbestos removal phases of the project. PCM Samples shall be collected and read onsite by the Harvard Representative in support of evaluating possible overload conditions.

1. Inside of the work area: The Owner's air monitoring firm will sample air inside of the building to detect airborne asbestos concentrations which may challenge the ability of the work area isolation procedures to protect the balance of the building or outside of the building from concentration by airborne fibers.
2. Work Area Clearance: Clearance air sampling by the Owner's air monitor at the completion of asbestos abatement work shall be performed. TEM AHERA shall be the clearance criteria for phases. Clearance testing shall be conducted in accordance with the TEM AHERA method.

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

1.14. SCHEDULE OF AIR SAMPLES BY OWNER

- A. Sample cassettes: Samples will be collected on 25 mm. cassettes as follows:

1. PCM: 0.8 micrometer mixed cellulose ester.

- B. Number and Volume of Samples: The number and volume of air samples given in the schedules is approximate. The exact number and volume of samples collected by the Owner may vary depending upon job conditions and the analytical method used.

- C. Sample Volume and Sensitivity:

1. PCM. The sample volumes collected by the Owner's air monitor will be determined by the following formula:

$$Volume = \frac{\left(\frac{Number of Fibers}{Area of 100 fields} \right) \times Total Filter Area}{\left(\frac{Limit Value}{4} \right)}$$

Where:

Number of fibers	=	5 fibers/100 fields, based on a limit of detection (LOD) of 7 fibers/mm ² on the filter
Area of 100 fields	=	0.785mm ²
Total Filter Area	=	385mm ²
Limit Value	=	as specified in the schedules of samples below

2. For purposes of this specification, the sample volume calculated above will be considered to be of sufficient size so that there is a 95% level of confidence that the value measured by each individual sample at the limit of detection (LOD) is less than or equal to the limit values specified below.
3. For purposes of this specification, the Limit of Detection (LOD) is defined as 7 fibers/m³ on the filter or 5 fibers/100 fields.
4. For purposes of this specification overloaded samples will be considered as exceeding the applicable limit value.

D. Baseline Sampling and Analysis:

1. Before starting work, the Owner will collect baseline air samples.
2. PCM Samples:

Location	Number Of Samples	Limit Value (Fibers/cc)	Approx. Volume (Liters)	Rate (Liters/Minute)
Inside the Work Areas	~5	0.01	1,000	1 – 10
Outside the Work Areas	~3	0.01	1,000	1 – 10

E. During Asbestos Removal:

1. From start of work from start of work of Section 01526 Temporary Enclosures through the work of Section 01711 Project Decontamination, the Owner will collect air samples, the Owner will collect air samples.
2. Sample volume and sensitivity: inside the work area may vary depending upon conditions in the work area. If samples are overloaded at the sample volume required for a limit value equal to the "Stop Action Levels" or "Immediate Stop Action Levels" given later in this section, the level is considered to have been exceeded.
3. PCM Samples:

Location	Number Of Samples/Shift	Limit Value (Fibers/cc)	Approx. Volume (Liters)	Rate (Liters/Minute)
Work Area	2	0.1	100	1 – 10
Outside the Work Area at Critical Barriers	2	0.01	1,000	1 – 10
Clean Room (Decon)	2	0.01	1,000	1 – 10
Dirty/Equipment Room (Decon)	2	0.01	1,000	1 – 10

F. Post Abatement:

1. Following the Final Visual Inspection of each phase of work, the Owner will secure air samples to establish that the clean air criteria are met.
2. TEM Samples:

Location	Number Of Samples/Area	Clearance Criteria (Structures)	Minimum Volume (Liters)	Rate (Liters/Minute)
Inside Work Area	5	≤70	1,200	10

- G. Additional samples may be taken at Owner's or Owner's Representative's discretion. If airborne fiber counts exceed allowed limits additional samples may be taken as necessary to monitor fiber levels.

1.15. ANALYTICAL METHODS USED BY THE OWNER

- A. The following methods will be used by the Owner in analyzing filters used to collect air samples. Sampling rates may be varied from printed standards to allow for high volume sampling.
 - 1. Phase Contrast Microscopy (PCM) will be performed using the NIOSH 7400 method.
 - 2. Transmission Electron Microscopy (TEM) will be performed using AHERA TEM method.

1.16. LABORATORY TESTING BY OWNER

- A. The Owner's Air Monitoring Firm will be employed for analyses of the air samples. A microscope and technician will be setup at the job site, so that verbal reports on air samples can be obtained immediately.
- B. A complete record of all air monitoring and results will be furnished to the Owner, and the Contractor.
- C. Written Reports: of all air monitoring tests will be posted at the job site daily.

1.17. FIBERS AND STRUCTURES

- A. Fibers Counted: The following procedure will be used to resolve any disputes regarding fiber types when a project has been stopped due to excessive airborne fiber counts.
 - 1. Large Fibers: "Airborne Fibers" referred to above include all fibers regardless of composition as counted by phase contrast microscopy (PCM), unless additional analysis by transmission or scanning electron microscopy demonstrates to the satisfaction of the Owner's Representative that non-asbestos fibers are being counted. "Airborne Fibers" counted in samples analyzed by transmission electron microscopy shall be asbestos fibers, greater than 5 microns in length. For purposes of stop action levels, after analysis by electron microscopy, the number of "Airborne Fibers" shall be determined by multiplying the number of fibers, regardless of composition, counted by PCM by the proportion of fibers that are asbestos as determined by TEM (a number equal to, asbestos fibers counted, divided by all fibers counted in the electron microscopy analysis).
 - 2. Small Structures: "Airborne Fibers" referred to above include asbestos structures (fibers, bundles, clusters, or matrices) of any diameter and any length greater than 0.5 microns.

1.18. ADDITIONAL TESTING

- A. The Contractor may conduct air monitoring and laboratory testing. If he elects to do this, the cost of such air monitoring and laboratory testing shall be at no additional cost to the Owner or the Owner's Representative.

1.19. PERSONAL MONITORING

- A. Owner will not perform air monitoring for the Contractor to meet Contractor's OSHA requirements for personal sampling or any other purpose.

PART 2. PRODUCTS (NOT APPLICABLE)

PART 3. EXECUTION

3.1. STOP ACTION LEVELS

- A. Inside Work Area: Maintain an average airborne count in the Work Area of less than 0.5 fibers per cubic centimeter. If the fiber counts rise above this figure for any sample taken, revise work

procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8-hour period exceeds 0.5 fibers per cubic centimeter, stop all work, leave Pressure Differential System in operation, and notify Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Owner's Representative.

1. If airborne fiber counts exceed 2.5 fibers per cubic centimeter for any period of time cease all work except corrective action until fiber counts fall below 0.5 fibers per cubic centimeter and notify Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Owner's Representative.

- B. Inside Work Area: Maintain an average airborne count in the work area of less than the Stop Action Level given below for the type of respiratory protection in use. If the fiber counts rise above this figure for any sample taken, revise work procedures to lower fiber counts. If the Time Weighted Average (TWA) fiber count for any work shift or 8-hour period exceeds the Stop Action Level, stop all work except corrective action, leave pressure differential and air circulation system in operation and notify Owner's Representative. After correcting cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by Owner's Representative.

Stop Action Level (Fibers/cc)	Immediately Stop Level (Fibers/cc)	Minimum Respirator Required	Protection Factor
1.0	2.5	PAPR	1,000

1. If airborne fiber counts exceed Immediate Stop Level given above for type of respiratory protection in use for any period cease all work except corrective action. Notify Owner's Representative. Do not recommence work until fiber counts fall below the Stop Action Level given above for the type of respiratory protection in use. After correcting the cause of high fiber levels, do not recommence work for 24 hours unless otherwise authorized, in writing, by the Owner's Representative.

- C. Outside Work Area: If any air sample taken outside of the Work Area exceeds the base line established in Part 1 of this section, immediately and automatically stop all work except corrective action. The Owner's Representative will determine the source of the high reading and so notify the Contractor in writing.

- a. If the high reading was the result of a failure of Work Area isolation measures initiate the following actions.
- b. Immediately erect new critical barriers as set forth in Section 01526 Temporary Enclosures to isolate the affected area from the balance of the building. Erect Critical Barriers at the next existing structural isolation of the space involved (e.g., wall, ceiling, and floor).
- c. Decontaminate the affected area in accordance with Section 01712 Cleaning & Decontamination Procedures.
- d. Require that respiratory protection as set forth in Section 01562 Respiratory Protection be worn in affected area until area is cleared for re-occupancy in accordance with Section 01711 Project Decontamination.
- e. Leave Critical Barriers in place until completion of work and ensure that the operation of the pressure differential system in the Work Area results in a flow of air from the balance of the building into the affected area.
- f. If the exit from the clean room of the personnel decontamination unit enters the affected area, establish a decontamination facility consisting of a Shower Room and Changing Room as set forth in Section 01563 Decontamination Units at entry point to affected area.

- g. After the Certification of Visual Inspection in the Work Area remove critical barriers separating the work area from the affected area. Final air samples will be taken within the entire area as set forth in Section 01711 Project Decontamination.

- D. Effect on Contract Sum: Complete corrective work with no change in the Contract Sum if high airborne fiber counts were caused by Contractor's activities. The Contract Sum and schedule will be adjusted for additional work caused by high airborne fiber counts beyond the contractor's control.

3.2. STOP WORK

- A. If the Owner or Owner's Representative presents a written stop work order, immediately and automatically conform to that stop work order, while maintaining temporary enclosures and pressure differential. Do not recommence abatement work until authorized in writing by Owner or Owner's Representative.
- B. Immediately initiate the following actions: After being presented with a stop work order immediately:
1. Cease all asbestos removal activities, or any other activities that disturbs ACM.
 2. Repair any fallen, ripped or otherwise failed work area isolation measures.
 3. Maintain in operation all work area isolation measures including those required by Sections 01526 "Temporary Enclosures," 01513 "Temporary Pressure Differential & Air Circulation System," 01563 "Decontamination Units."
 4. Maintain all worker protections including those required by Sections 01560 "Worker Protection - Asbestos Abatement," and 01562 "Respiratory Protection."
 5. Fog the air in the work area with a mist of amended water to reduce airborne fiber levels.
- C. Do not recommence work until authorized in writing by the Owner or Owner's Representative.

PART 4. SCHEDULE OF ASBESTOS-CONTAINING MATERIALS

LOCATION	MATERIAL DESCRIPTION	ESTIMATED QUANTITY	ASBESTOS CONTENT	ENCLOSURE TYPE	QA CRITERIA
1912 Building (Drawings 1-4)	Wall and Ceiling Plaster	48,811 SF	3% Chrysotile Asbestos	Full Enclosure under negative pressure	TEM and Visual Inspection
1912 Building (Drawings 1)	12 x 12 Floor Tile "Tan"	40 SF	5% Chrysotile Asbestos	Full Enclosure under negative pressure	TEM and Visual Inspection
1912 Building (Drawings 1)	9x9 Floor Tile "Green"	40 SF	6% Chrysotile Asbestos	Full Enclosure under negative pressure	TEM and Visual Inspection
1912 Building (Drawings 1)	Flue Packing	2 SF	4% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1,2,3)	Pipe Insulation "Air Cell"	69 LF	8% Chrysotile	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Pipe Fitting	3 EA	PACM	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Cement Board Paneling	3,930 SF	65% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Joint Compound	14,070	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection

1912 Building (Drawing 2)	Lab Stone Countertop	184 SF	20% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawing 2)	12x12 Floor Tile – White w/ Blue Streaks	385 SF	4% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Cove Base Mastic assoc. w/Cove Base Materials	2,811 LF	4% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	9x9 Floor Tile – Tan	1,082 SF	8% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	9x9 Floor Tile – Gray	1,704 SF	7% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-4)	Floor Tile Mastic	5,116	4% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawing 3)	Caulking assoc. w/ Cement Board Paneling	40 LF	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
1912 Building (Drawings 1-2)	Door Caulk	128 LF	20% Chrysotile Asbestos	Regulated Area	Visual Inspection
Addition Building (Drawings 5-10)	Floor Tile Mastic	15,397 SF	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5,6,7,9)	Sink Undercoat - White	10 EA	7% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Room 419 (Drawing 9)	Sink Undercoat - Black	1 EA	5% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Room 047B (Drawing 5)	9x9 Floor Tile - Beige	10 SF	10% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Boiler Mud Packing	1,000 SF	15% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Gasket assoc. w/ Fire Suppression System	75 EA	40% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Boiler & Interior Materials	2 EA	PACM	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Boiler Room (Drawing 5)	Condenser Tank Insulation	2 EA	PACM	Full Enclosure under Negative Pressure	TEM and Visual Inspection

Addition Building (Drawings 5,6,7,9)	Pipe Insulation "Air Cell"	744 LF	60% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Rooms 012 and 020 (Drawing 5)	Penetration Packing	22 SF	8% Amosite Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5,6,9)	Pipe Insulation "MAG"	341 LF	10% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5-10)	Fire Door	79 EA	15% Amosite, 8% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5-10)	Floor Tile Mastic	24,716 SF	2% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 7,8,9)	Window Glaze – Stairwell Windows	3 EA	3% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Room 503 (Drawing 10)	Pipe Fitting	2 EA	2% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building (Drawings 5-10)	Duct Seam Mastic – Tan	4,038 LF	2% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection
Addition Building, Roof H2 (Drawing 11)	Louver Caulk	3 LF	4% Chrysotile Asbestos	Regulated Area	Visual Inspection
Addition Building, Roof H (Drawing 11)	Building Seam Caulk	20 LF	6% Chrysotile Asbestos	Regulated Area	Visual Inspection
Addition Building (Drawings 5-6)	Door Caulk	112 LF	3% Chrysotile Asbestos	Regulated Area	Visual Inspection
Addition Building (Exterior)	Expansion Joint Caulk	30 LF	2% Chrysotile Asbestos	Regulated Area	Visual Inspection
Garage (Drawing 12)	Window Glaze	8 EA	3% Chrysotile Asbestos	Regulated Area	Visual Inspection
Garage (Drawing 12)	Cementitious Panels	300 SF	20% Chrysotile Asbestos	Full Enclosure under Negative Pressure	TEM and Visual Inspection



SECTION 01028 - APPLICATIONS FOR PAYMENT - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements governing the Contractor's Applications for Payment.
 - 1. Coordinate the Schedule of Values and Application for Payment with the Contractor's Construction Schedule, Submittal Schedule, and List of Subcontracts.
- B. Related Sections - The following Sections contain requirements that relate to this Section.
 - 1. Contractor's Construction Schedule: The Contractor's Construction Schedule is specified in Division 1 Section "Coordination - Asbestos Abatement." Section 1043.
 - 2. Submittal Schedule: The Submittal Schedule is specified in Division 1 Section "Submittals." 1301.

1.3 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors.
 - d. Schedule of allowances.
 - e. Schedule of alternates.
 - f. List of products.
 - g. Schedule of submittals.
 - 2. Submit the Schedule of Values to the Owner's Representative at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.
- B. Form: Submit Schedule of Values on the form at the end of this section.



- C. Format and Content: Submit a Schedule of Values that is based on functional, measurable, observable portions of the Work. Where appropriate breakdown the Work into phases, building areas or floors.
1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Owner's Representative.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Sections or Divisions
 - b. Description of Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value.

(2) Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manager table of contents. Where appropriate, break principal subcontract amounts down into several line items.
 4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
 5. Unit-Cost Allowances: Show the line-item value of unit-cost allowances, as a product of the unit cost, multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents and field measurements.
 - a. All estimate quantities will require written confirmation by the Owner's Representative.
 6. Margins of Cost: Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.
 7. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.



1.4 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Owner's Representative and paid for by the Owner.
1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment-Application Times: Each progress-payment date is indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
1. If the Agreement does not state payment dates, the following requirements will apply.
 - a. The date for each progress payment is the 10th day of each month.
 - b. The period covered by each application for payment starts on the day following the end of the preceding month.
- C. Payment-Application Forms: Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment. Sample Payment-Application forms are not provided in the Contract Document. The Contractor shall be expected to obtain AIA Documents forms listed above.
1. In the event other Payment –Application Forms are utilized as approved by the Owner, the Contractor shall be provided these forms prior to bid submittal.
- D. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Owner's Representative will return incomplete applications without action.
1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions are made.
 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
- E. Transmittal: Submit 4 signed and notarized original copies of each Application for Payment to the Owner's Representative by a method ensuring receipt within 24 hours. One copy shall be complete, including waivers of lien and similar attachments, when required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Owner's Representative.
- Waivers of Mechanics Lien: With each Application for Payment, submit partial waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application.
1. Submit partial waivers from each subcontractor, sub-contractor or supplier on each item provided by such an entity, for the amount requested, prior to deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers from the subcontractors, sub-subcontractors and suppliers providing that item.
 3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.



- G. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.
- H. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:
1. Submittals designated as required "Before Start of Work" by individual specification sections.
 2. List of subcontractors.
 3. List of principal suppliers and fabricators.
 4. Schedule of Values.
 5. Contractor's Construction Schedule (preliminary if not final).
 6. Schedule of principal products.
 7. Schedule of unit prices.
 8. Submittal Schedule (preliminary if not final).
 9. List of Contractor's staff assignments.
 10. List of Contractor's principal consultants.
 11. Copies of building permits.
 12. Copies of authorizations and licenses from governing authorities for performance of the Work.
 13. Initial progress report.
 14. Report of preconstruction meeting.
 15. Certificates of insurance and insurance policies.
 16. Initial settlement survey and damage report, if required.
- I. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 2. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Changeover information related to Owner's occupancy, use, operation, and maintenance.
 - b. Final cleaning.
 - c. Application for reduction of retainage and consent of surety.
 - d. List of incomplete Work, recognized as exceptions to Owner's Representative's Certificate of Substantial Completion.



- J. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:
1. Completion of Project closeout requirements.
 2. Completion of items specified for completion after Substantial Completion.
 3. Ensure that unsettled claims will be settled.
 4. Ensure that incomplete work is not accepted and will be completed without undue delay.
 5. Transmittal of required project construction records to the Owner.
 6. Proof that taxes, fees, and similar obligations were paid.
 7. Removal of temporary facilities and services.
 8. Removal of surplus materials, rubbish, and similar elements.
 9. Change of door locks to Owner's access.
 10. Disposal receipts, bills of lading and other required documentation of transportation and disposal of asbestos-containing waste.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01028



SCHEDULE OF VALUES

Project: _____ Date: _____

Contractor: _____ Owner's: HARVARD ENVIRONMENTAL, INC.
_____ Rep. _____

Description	Related Work Sections	Amount
Preparation of Work Area	01503 Temporary Facilities - Asbestos Abatement 01513 Temporary Pressure Differential & Air Circulation System 01526 Temporary Enclosures 01563 Decontamination Units	_____
Site Demolition	02061 Building Component Demolition - Asbestos Abatement 02062 Non-Asbestos Demolition	_____
Asbestos Abatement	02063 Removal of Asbestos Contaminated Materials 02081 Removal of Asbestos-Containing Materials 02084 Disposal of Regulated Asbestos-Containing Material 02085 Resilient Floor Covering Manufacturers' Recommended Work Practices 02087 Resilient Flooring Removal - Asbestos Abatement 09805 Encapsulation of Asbestos-Containing Materials	_____
Project Decontamination	01711 Project Decontamination 01712 Cleaning & Decontamination Procedures 01713 Project Decontamination - Microfibers	_____
Other Work	01527 Regulated Areas 01528 Entry into Controlled Areas	_____
Project Closeout	01701 Project Closeout-Asbestos Abatement	_____
	Total	_____



SECTION 01043 - COORDINATION - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. Plan of Action.
2. Contingency Plan.
3. Notifications.
4. Pre-Construction Inspection.
5. Contractor's Construction Schedule.
6. Administrative and supervisory personnel.
7. Pre-Construction Conference.
8. Progress Meetings.
9. Coordination meetings.
10. Record Keeping.
11. Special Reports.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

1. "Section 01301 - Submittals - Asbestos Abatement" for administrative procedures regarding submittals.
2. "Section 01601 - Materials and Equipment - Asbestos Abatement" for coordinating general installation.
3. "Section 01701 - Project Closeout - Asbestos Abatement" for coordinating contract closeout.

1.3 COORDINATION

- A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly completion of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.



1. Schedule construction operations in the sequence required to obtain the best results where execution of one part of the Work depends on execution of other components, before or after its own execution.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 1. Preparation of schedules.
 2. Installation and removal of temporary facilities.
 3. Delivery and processing of submittals.
 4. Progress meetings.
 5. Project closeout activities.
- D. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.
 1. Salvage materials and equipment involved in performance of but not actually incorporated in the Work.

1.4 PLAN OF ACTION:

- A. Prepare a detailed plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location and layout of decontamination areas, the sequencing of asbestos work, the interface of trades involved in the performance of work, methods to be used to assure the safety of building occupants and visitors to the site, disposal plan including location of approved disposal site, and a detailed description of the methods to be employed to control pollution. Expand upon the use of portable HEPA ventilation system, closing out of the building's HVAC system, method of removal to prohibit visible emissions, and packaging of removed asbestos debris.
 1. Submit the Plan of Action to the Owner's Representative for information only, prior to the start of work.

1.5 CONTINGENCY PLAN:

- A. Contingency Plan: Prepare a contingency plan for emergencies or any other event that may require breaching of work area containment or modification or abridgement of decontamination or work area isolation procedures. Include in this plan procedures for performing electrical and mechanical repairs inside containment after abatement work has begun. Include in plan specific procedures for decontamination or work area isolation. Note that nothing in this specification should impede safe



exiting or providing of adequate medical attention in the event of an emergency. Items to be addressed in the plan include, but are not limited to the following:

1. Fire
2. Accident
3. Life threatening injury
4. Non life threatening injury
5. Rescue
6. Power Failure
7. Pressure differential system failure
8. Breach of containment
9. Electrical faults or shock
10. Supplied air system failure
11. Waste spills
12. Unauthorized entry into work area
13. Elevated air samples outside of containment
14. Repairs inside containment

1.6 NOTIFICATIONS

- A. Notify other entities at the job site of the nature of the asbestos abatement activities, location of asbestos-containing materials (ACM), requirements relative to asbestos set forth in these specifications and applicable regulations. Advance notification will be made to:
 1. Employees who will perform asbestos abatement work or related activities, or who will be in the work area during the course of the work of this contract.
 2. Employers of employees who work and/or will be working in adjacent areas during the course of the work of this contract.
- B. Notify emergency service agencies including fire, ambulance, police or other agencies that may service the abatement work site in case of an emergency. Notification includes methods of entering work area, emergency entry and exit locations, modifications to fire notification or fire fighting equipment, and other information needed by agencies providing emergency services.
- C. Notifications of Emergency: Any individual at the job site may notify emergency service agencies if necessary without effect on this Contract or the Contract Sum.

1.7 PRE-CONSTRUCTION INSPECTION:

- A. Inspect areas in which work will be performed, prior to commencement of work. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be



misconstrued as damage resulting from the work. Photograph or videotape existing conditions as necessary to document conditions. Submit to the Owner's Representative for record purposes prior to starting work.

1.8 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor's construction schedule. Submit within 5 days prior to mobilization.
1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values."
 2. Within each time bar, indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; including minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
 5. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
 6. Indicate Clearance of each Work Area in advance of the dates established for Clearance. Allow time for testing and other Owner's Representative's procedures necessary for certification of Clearance.
 7. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Owner's Representative's procedures necessary for certification of Substantial Completion.
- B. Phasing: On the schedule, show how requirements for phased completion to permit Work by separate Contractors affect the sequence of Work.
- C. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.
- D. Cost Correlation: At the head of the schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of Work performed as of the dates used for preparation of payment requests.
1. Refer to Division 1 Section "Applications for Payment" for cost reporting and payment procedures.



- E. Distribution: Following response to the initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
 - 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- F. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.9 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. Project Supervisor: Provide a full-time Project Supervisor at the work site who is experienced in administration and supervision of asbestos abatement projects including work practices, protective measures for building and personnel, disposal procedures, project scheduling, management, etc. This person is the Contractor's Representative and will function as the 'competent person' at the work site responsible for compliance with all applicable federal, state and local regulations, particularly those relating to ACM.
 - 1. Training: The General Superintendent must have a current certification from a state approved trainer for a course that meets the requirements of the EPA Model Accreditation Plan for asbestos abatement contractor/supervisor (40 CFR part 763, Subpart E, Appendix C).
 - 2. Experience: The General Superintendent must have demonstrated experience in the successful management of asbestos abatement projects that are like the work of this contract.
 - a. The General Superintendent must have a minimum of two (2) years' experience in the on-site management of asbestos abatement projects.
 - b. The General Superintendent must have had responsible charge of a minimum of ten (10) asbestos abatement projects similar in size and type to the work of this contract.
 - 3. Competent Person: The General Superintendent is to be a Competent Person as required by OSHA in 29 CFR 1926.

1.10 PRE-CONSTRUCTION CONFERENCE:

- A. An initial progress meeting, recognized as the "Pre-Construction Conference" will be convened by the Owner's Representative prior to start of any work. The preconstruction conference will be scheduled before the start of construction, at a time convenient to the Owner and the Owner's Representative. Meet at the project site, or as otherwise directed, with General Superintendent, Owner, Owner's Representative, Project Administrator, and other entities concerned with the asbestos abatement work.
- B. Attendees: Authorized representatives of the Owner, Owner's Representative, and their consultants will be in attendance. An authorized representative of the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall



attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

1. 48-hour advance notice will be provided to all participants prior to convening Pre-Construction Conference.

C. Agenda: This is an organizational meeting, to review responsibilities and personnel assignments, to locate regulated areas and temporary facilities including power, light, water, etc. Items of significance that could affect progress will be discussed, including the following:

1. Tentative construction schedule.
2. Critical work sequencing.
3. Designation of responsible personnel.
4. Procedures for processing field decisions and Change Orders.
5. Procedures for processing Applications for Payment.
6. Distribution of Contract Documents.
7. Submittal of Shop Drawings, Product Data, and Samples.
8. Preparation of record documents.
9. Use of the premises.
10. Parking availability.
11. Office, work, and storage areas.
12. Equipment deliveries and priorities.
13. Safety procedures.
14. First aid.
15. Security.
16. Housekeeping.
17. Working hours.

1.11 PROGRESS MEETINGS:

- A. General: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, the Owner's Representative will hold general progress meetings as required. These meetings will be scheduled, where possible, at time of preparation of payment request.
- B. Attendees: Representatives of the Owner and/or the Owner's Representative will attend these meetings. In addition to representatives of the Contractor, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the work. Require each



entity then involved in planning, coordination or performance of work to be properly represented at each meeting.

C. Agenda: Be prepared to discuss the following items at the progress meetings. Review other items of significance that could affect progress.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1.12 RECORD KEEPING:

A. Daily Log: Maintain a Daily Log (in an area accessible to the Owner, Owner's Representative and Project Administrator) as a bound, sequential, hand-written record carefully prepared daily that documents but is not limited to the following items:

1. Meetings; purpose, attendees, brief discussion
2. Special or unusual events, i.e. barrier breaching, equipment failures, accidents
3. Documentation of Contractor's completion of the following:
4. Inspection of work area preparation prior to start of removal and daily thereafter.
 - a. Removal of any sheet plastic barriers
 - b. Contractor's inspections prior to spray back, lock back, encapsulation, enclosure or any other operation that will conceal the condition of ACM or the substrate from which such materials have been removed.
 - c. Removal of waste materials from work area
 - d. Decontamination of equipment (list items)
 - e. Contractor's final inspection/final air test analysis.

B. Entry/Exit Log: Maintain within the Decontamination Unit a daily log documenting the dates and time of but not limited to, the following items:

1. Visitations; authorized and unauthorized with the following information
 - a. Name
 - b. Organization
 - c. Entry time
 - d. Exit Time
 - e. Respiratory protection
2. Personnel, by name, entering and leaving the work area with the following information



- a. Printed Name
 - b. Identification Number
 - c. Entry Time
 - d. Exit Time
 - e. Respiratory Protection
- C. Air Monitoring Results: Post personnel and area air monitoring results in Decontamination Unit within 24 hours of sample collection. Post the respiratory protection requirements for the work in progress.
- D. Records in Decontamination Unit: Maintain the following documentation in the Decontamination Unit, in a location accessible to workers.
- 1. Documentation of inspections by OSHA, EPA or local authority
 - 2. Respiratory Protection Program.
- E. Other records: Maintain other documentation in a location that is accessible to the Owner, Owner's Representative, and Project Administrator including:
- 1. Waste Manifests and shipping records
 - 2. Landfill receipts.
 - 3. Accident reports.
- F. Copies of all records listed above shall be submitted to the Owners Representative upon completion of the project.

1.13 SPECIAL REPORTS:

- A. General: Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to Owner's Representative and others affected by occurrence.
- B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site (examples: failure of pressure differential system, rupture of temporary enclosures), prepare and submit report. List chain of events, persons participating, and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner in advance at earliest possible date.
- C. Reporting Accidents: Prepare and submit reports of significant accidents, at site and anywhere else work is in progress. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, property loss of substance is sustained, where the event posed a significant threat of loss or personal injury, or where work was stopped for over four hours during a scheduled shift.
- D. Report Discovered Conditions: When an unusual condition of the building is discovered during work (e.g. leaks, termites, corrosion) prepare and submit a special indication condition discovered.



1.14 SUBMITTALS

- A. Before the Start of Work: Submit the following to the Owner's Representative in the same manner as product data. Do not begin work until these submittals are returned with Owner's Representative's action stamp indicating that all submittals have been "received-not reviewed".
1. Plan of Action.
 2. Contingency Plans.
 3. Project Directory.
 4. Notifications: copy of notification sent to other entities at the work site and to emergency service agencies.
 5. Pre-Construction Inspection: Report on inspection carried out as required by this section. Include copies of all photographs, video tapes, etc.
 6. Contractor's Construction Schedule.
 7. Accreditation: Submit evidence in the form of training course certificates for the General Superintendent, Supervisors, and Forepersons as asbestos abatement supervisors in accordance with AHERA requirements. Submit evidence in the form of training course certificates that each worker is trained as an asbestos abatement worker in accordance with AHERA requirements.
 8. Resume: Submit resume of General Superintendent
- B. Submit daily: Provide two (2) copies for information purposes of all documents indicated in the following sub-sections to Project Administrator by end of the next working day after the day they are received by Contractor.
1. Section on Record Keeping.
 2. Section on Special Reports.
- C. Project Close-out: Submit two (2) copies for information purposes of all documents indicated in the following sections at final closeout of project as a project close-out submittal.
1. Section on Record Keeping.
 2. Section on Special Reports.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

END OF SECTION - 01043



SECTION 01097 - REFERENCE STANDARDS AND DEFINITIONS - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.
- B. Drawings prepared for communication of the work are intended to be schematic by design and may not necessarily reflect actual field dimensions as identified in the field. The Contractor shall be expected to field validate all aspects of the drawings and draw upon professional experience regarding the work conveyed.

1.2 DEFINITIONS

- A. General: Basic contract definitions are included in the Conditions of the Contract.
 1. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the reader locate the reference. Location is not limited.
 2. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Owner's Representative, requested by the Owner's Representative, and similar phrases.
 3. "Approved": The term "approved," when used in conjunction with the Owner's Representative's action on the Contractor's submittals, applications, and requests, is limited to the Owner's Representative's duties and responsibilities as stated in the Conditions of the Contract.
 4. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
 5. "Furnish": The term "furnish" means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
 6. "Install": The term "install" describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
 7. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.
 8. "Installer": An installer is the Contractor, or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.



- a. The term "experienced," when used with the term "installer," means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.
 - b. Trades: Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that the requirements specified apply exclusively to trades people of the corresponding generic name.
 - c. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities should be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements under which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
 - (1) This requirement shall not be interpreted as conflicting with enforcing building codes and similar regulations governing the work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.
9. "Project Site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
10. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
11. "Owner's Representative": This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction." All references to Architect or Engineer in the Contract Documents in all cases refer to the Owner's Representative. The Owner's Representative will represent the Owner during construction and until final payment is due. The Owner's Representative will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Owner's Representative.
12. "Project Administrator": This is the entity described as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction." The Project Administrator is a full time representative of the Owner at the job site with authority to stop the work upon written or verbal order if requirements of the Contract Documents are not met, or if in the sole judgement of the Project Administrator, Owner's Representative, or Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.



13. "Stop Work Order": is a written order to cease asbestos removal, encapsulation or enclosure activities. The Contractor must maintain work area enclosure, pressure differential isolation and ventilation of the work area, and decontamination units during the period that a Stop Work Order is in affect.
14. "General Superintendent": This is the Contractor's Representative at the work site. This person must be a Competent Person as defined by OSHA in 29 CFR 1926.

B. Definitions Relative to Asbestos Abatement:

1. "Adequately Wet" means to sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from the asbestos-containing material (ACM), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wetted.
2. "Asbestos": The asbestiform varieties of chrysotile (serpentine), amosite (cummingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite, actinolite, and any of these minerals that has been chemically treated and/or altered. For purposes of the contract documents materials described in the contract documents as asbestos are to be considered as asbestos.
3. "Asbestos-Containing Material (ACM)": any material containing more than 1% asbestos as determined using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.
4. "Asbestos-Containing Waste Material": any waste that contains asbestos. This term includes filters and other materials contaminated with asbestos. This term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.
5. "Asbestos debris": pieces of ACM that can be identified by color, texture, or composition, or dust, if the dust is determined by an accredited inspector to be ACM.
6. "Certified Industrial Hygienist (C.I.H.)": one certified in the practice of industrial hygiene by the American Board of Industrial Hygiene.
7. "Competent person": an individual who meets the requirements of OSHA as a "competent person" for the specific activity involved in the work. The "competent person" must meet the requirements of 29 CFR 1926.32(f), and 29 CFR 1926.1101.
8. "Filter": A media component used to remove solid or liquid particles from air and water.
9. "Friable Asbestos": any asbestos-containing material that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
10. "Grinding": to reduce to powder or small fragments and includes manual or mechanical chipping or drilling.
11. "HEPA Filter": A High Efficiency Particulate Air (HEPA) filter capable of trapping and retaining 99.97% of all mono-dispersed particles of 0.3 microns in diameter.
12. "HEPA Filter Vacuum Collection Equipment (or vacuum cleaner)": High efficiency particulate air filtered vacuum collection equipment with a HEPA filter.



13. "Intact": that the ACM has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix.
14. "Leak-tight": that solids or liquids cannot escape or spill out. It also means dust-tight.
15. "Negative Pressure Enclosure (NPE)": A pressure differential and ventilation system where the work area is maintained at a negative pressure relative to air pressure outside the work area.
16. "Non-friable Material": any material that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure and has not been rendered friable.
17. "Personal Monitoring": Sampling of the asbestos fiber concentration within the breathing zone of an employee.
18. "Surfacing material": material that is sprayed troweled-on, or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).
19. "Thermal system insulation (TSI)": insulation applied to pipes, fittings, boilers, breeching, tanks, ducts or other components to prevent heat loss or gain.
20. "Time Weighted Average (TWA)": The average concentration of a contaminant in air during a specific time period as determined by the method prescribed in Appendix A of 29 CFR part 1926.1101.
21. "Visible Emissions": Any emissions containing particulate material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.
22. "Working Day": Monday through Friday and includes holidays that fall on any of the days Monday through Friday as indicated in the notification requirements.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on CSRS 16-Division format and Master Format's numbering system.

B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Streamlined Language: The Specifications generally use the imperative mood and streamlined language. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.



1.4 INDUSTRY STANDARDS

- A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made as part of the Contract Documents by reference.
- B. Conflicting Requirements: Where compliance with 2 or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels comply with the most stringent requirement. Refer to the Owner's Representative before proceeding for a decision on requirements that are different but apparently equal, and where it is uncertain which requirement is the most stringent.
1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum acceptable. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Owner's Representative for a decision before proceeding.
- C. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
- D. Standards: which apply to asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
1. American National Standards Institute (ANSI)
1430 Broadway
New York, New York 10018
(212) 351-3300
 - a. Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2
 - b. Practices for Respiratory Protection Publication Z88.2
 2. American Society for Testing and Materials (ASTM)
100 Bar Harbor Drive
West Conshohocken, PA 19428-2959
(610) 832-9585
 - a. Safety and Health Requirements Relating to Occupational Exposure to Asbestos E 849
 - b. ASTM Standard Practice for Visual Inspection of Asbestos Abatement Projects E1368
- E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in the



Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up to date as of the date of the Contract Documents.

1. ACI American Concrete Institute
P.O. Box 19150
Detroit, MI 48219 (313) 532-2600
2. ACIL American Council of Independent Laboratories
1629 K St., NW
Washington, DC 20006 (202) 881-5812
3. ACPA American Concrete Pipe Assoc.
8300 Boone Blvd., Suite 400
Vienna, VA 22186 (703) 821-1990
4. ACGIH American Conference of Governmental Industrial Hygienists
1330 Ferner Meadow Dr.
Cincinnati, OH 45240 (513) 742-2020
5. AIA The American Institute of Architects
1735 New York Ave., NW
Washington, DC 20006 (202) 626-7300
6. AIHA American Industrial Hygiene Assoc.
2700 Prosperity Ave., Suite 250
Fairfax, VA 22031 (703) 849-8888
7. ANSI American National Standards Institute
11 West 42nd St., 13th Floor
New York, NY 10036 (212) 642-4900
8. ASHRAE American Society of Heating,
Refrigerating and Air-Conditioning Engineers
1791 Tullie Circle, NE
Atlanta, GA 30329 (404) 636-8400
9. ASME American Society of Mechanical Engineers
345 East 47th St.
New York, NY 10017 (212) 705-7722
10. ASPE American Society of Plumbing Engineers
3617 Thousand Oaks Blvd., Suite 210



Westlake, CA 91362 (805) 495-7120

11. ASTM American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959 (610) 832-9585

12. CGA Compressed Gas Assoc.
1725 Jefferson Davis Highway, Suite 1004
Arlington, VA 22202-4100 (703) 453-0900

13. FM Factory Mutual Systems
1151 Boston-Providence Turnpike
P.O. Box 9102
Norwood, MA 02062 (617) 762-4300

14. GA Gypsum Association
810 First St., N.E. Suite 510
Washington, DC 20002 (202) 289-5440

15. IEEE Institute of Electrical and Electronic Engineers
345 E. 47th St.
New York, NY 10017 (212) 705-7900

16. IETA International Electrical Testing Assoc.
P.O. Box 687
Morrison, CO 80465 (303) 697-8441

17. IRI Industrial Risk Insurers
P.O. Box 5010
85 Woodland St.
Hartford, CT 06102-5010 (203) 520-7300

18. ISA Instrument Society of America
P.O. Box 12277
67 Alexander Dr.
Research Triangle Park, NC 27709 (919) 549-8411

19. ISO International Standards Organization

20. NEC National Electrical Code (from NFPA)

21. NECA National Electrical Contractors Assoc.



3 Bethesda Metro Center, Suite 1100
Bethesda, MD 20814 (301) 657-3110

22. NEMA

National Electrical Manufacturers Assoc.
2101 L St., NW, Suite 300
Washington, DC 20037 (202) 457-8400

23. NFPA

National Fire Protection Assoc.
One Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101 (617) 770-3900 (800) 344-3555

24. NRCA

National Roofing Contractors Assoc.
10255 W. Higgins Rd., Suite 600
Rosemont, IL 60018-5607 (708) 299-9070

25. RFCI

Resilient Floor Covering Institute
966 Hungerford Dr., Suite 12-B
Rockville, MD 20805 (301) 340-8580

26. UL

Underwriters Laboratories
333 Pfingsten Rd.
Northbrook, IL 60062 (708) 272-8800

27. White Lion Association

PO Box 1483
Baltimore, MD 21203

F. Federal Government Agencies: Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up to date as of the date of the Contract Documents.

1. CE

Corps of Engineers
(U.S. Department of the Army)
Chief of Engineers - Referral
Washington, DC 20314 (202) 272-0660

2. CFR Code of Federal Regulations

(Available from the Government Printing Office)
N. Capitol St. between G and H St., NW



Washington, DC 20402 (202) 783-3238
(Material is usually first published in the "Federal Register")

3. CPSC Consumer Product Safety Commission
5401 Westbard Ave.
Bethesda, MD 20207 (800) 638-2772
4. CS Commercial Standard
(U.S. Department of Commerce)
Government Printing Office
Washington, DC 20402 (202) 783-3238
5. DOC Department of Commerce
14th St. and Constitution Ave., NW
Washington, DC 20230 (202) 482-2000
6. DOT Department of Transportation
400 Seventh St., SW
Washington, DC 20590 (202) 366-4000
7. EPA Environmental Protection Agency
8. FS Federal Specification (from GSA)
Specifications Unit (WFSIS)
7th and D St., SW
Washington, DC 20407 (202) 708-9205
9. GSA General Services Administration
F St. and 18th St., NW
Washington, DC 20405 (202) 708-5082
10. MIL Military Standardization Documents
(U.S. Department of Defense)
Naval Publications and Forms Center
5801 Tabor Ave.
Philadelphia, PA 19120
11. NIST National Institute of Standards and Technology
(U.S. Department of Commerce)
Gaithersburg, MD 20899 (301) 975-2000



12. OSHA Occupational Safety and Health Administration
(U.S. Department of Labor)
200 Constitution Ave., NW
Washington, DC 20210 (202) 219-6091

13. PS Product Standard of NBS
(U.S. Department of Commerce)
Government Printing Office
Washington, DC 20402 (202) 783-2338

14. USPS U.S. Postal Service
475 L'Enfant Plaza, SW
Washington, DC 20260-0010 (202) 268-2000

G. Trade Union Jurisdictions: The Contractor shall maintain, and require subcontractors to maintain, complete current information on jurisdictional matters, regulations and pending actions, as applicable to construction activities. The way Contract Documents have been organized and subdivided is not intended to be indicative of trade union or jurisdictional agreements.

1. Discuss new developments at project meetings at the earliest feasible dates. Record relevant information and actions agreed upon.
2. Assign and subcontract construction activities and employ tradesmen and laborers in a manner that will not unduly risk jurisdictional disputes that could result in conflicts, delays, claims and losses.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01097



SECTION 01098 - CODES, REGULATIONS AND STANDARDS - ASBESTOS ABATEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplemental Conditions and other Division-1 Specification Sections, apply to this section.

1.2 SUMMARY

- A. This section sets forth governmental regulations which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.
 - 1. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.
 - 2. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations and standards.

1.3 CODES, REGULATIONS AND STANDARDS

- A. General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the Contract Documents, all applicable codes and regulations have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the Contract Documents, or as if published copies are bound herewith.
- B. Contractor Responsibility: The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and people occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Owner's Representative harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of the contractor, the contractor's employees, or subcontractors.
- C. Federal Requirements: which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
 - 1. OSHA: U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:
 - a. Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite.



Final Rules Title 29, Part 1910, Section 1001 of the Code of Federal Regulations

Final Rules Title 29, Part 1926, Section 1101 of the Code of Federal Regulations

b. Respiratory Protection

Title 29, Part 1910, Section 134 of the Code of Federal Regulations

Title 29, Part 1926, Section 103 of the Code of Federal Regulations

c. Personal Protective Equipment for General Industry

Title 29, Part 1910, Section 132 of the Code of Federal Regulations

Title 29, Part 1926, Sections 95 - 107 of the Code of Federal Regulations

d. Access to Employee Exposure and Medical Records

Title 29, Part 1926, Section 33 of the Code of Federal Regulations

e. Hazard Communication

Title 29, Part 1926, Section 59 of the Code of Federal Regulations

f. Specifications for Accident Prevention Signs and Tags

Title 29, Part 1910, Section 145 of the Code of Federal Regulations

g. Permit Required Confined Space

Title 29, Part 1910, Section 146 of the Code of Federal Regulations

h. Construction Industry

Title 29, Part 1910, Section 1001 of the Code of Federal Regulations

Title 29, Part 1926, Section 1101 of the Code of Federal Regulations

Construction Industry - General Duty Standards

Title 29, Part 1926, Sections 20 through 35 of the Code of Federal Regulations

j. Shipyard Industry

Title 29 Part 1915 Section 1001 of the Code of Federal Regulations

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

a. Hazardous Substances

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

b. Hazardous Material Regulations

General Awareness and Training Requirements for Handlers, Loaders and Drivers

Title 49, Parts 171-180 of the Code of Federal Regulations

c. Hazardous Material Regulations

Editorial and Technical Revisions

Title 49, Parts 171-180 of the Code of Federal Regulations



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

- a. Asbestos Abatement Projects; Worker Protection Rule
Title 40 Part 763, Sub-part G of the Code of Federal Regulations
- b. Asbestos Hazard Emergency Response Act (AHERA) Regulation
Title 40, Part 763, Sub-part E of the Code of Federal Regulations
- c. EPA Model Accreditation Plan - Asbestos Containing Materials
Final Rule & Notice
Title 40, Part 763, Sub-part E, Appendix C of the Code of Federal Regulations
- d. National Emission Standard for Hazardous Air Pollutants (NESHAP)
National Emission Standard for Asbestos
Title 40, Part 61, Sub-part A and Sub-part M (Revised Sub-part B) of the Code of Federal Regulations

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

1. State of Delaware, Department of Natural Resources and Environmental Control, "Delaware Regulations Governing the Control of Air Pollution Emissions Standards for Asbestos". November 27, 1985, Updated June 16, 1995.
2. State of Delaware Asbestos Contractor, Supervisor and Worker Certifications Program.
3. State of Delaware Hazardous Chemical Information Act.
4. Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

1.4 NOTICES:

A. U.S. ENVIRONMENTAL PROTECTION AGENCY

1. Postmark or Deliver Written Notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M) to the regional Asbestos NESHAP Contact at least 10 working days prior to beginning any work on asbestos-containing materials (ACM). Send notification to the following address:

- a. REGION 3
Asbestos NESHAP Contact
Air Management Division
USEPA
841 Chestnut Street
Philadelphia, PA 19107
(215) 597-6550



2. Notification: Include the following information in the notification sent to the NESHAP contact:

- a. Indication whether the notification is original or revised notification
- b. Name, address, and telephone number of owner or operator
- c. Name, address, and telephone number of contractor
- d. Type of Operation (demolition or renovation)
- e. Description of the facility or affected part of the facility being demolished or renovated, including the size (square feet [square meters], number of floors), age, present and prior use of the facility.
- f. Estimate of the approximate amount of RACM to be removed from the facility in terms of linear meters [linear feet] of pipe, and surface area in square meters [square feet] of other facility components. Also estimate the approximate amount of Category I and Category II non-friable ACM in the affected part of the facility that will not be removed before demolition.
- g. For facilities in which the amount of friable asbestos materials less than 80 linear meters (260 linear feet) on pipes and less than 45 square meters (160 square feet) or 1 cubic meter (35 cubic feet) if the length and width could not be measured. On other facility components, explain techniques of estimation.
- h. Location and street address (including building number or name and floor or room number, if appropriate), city county, and state, of the facility being demolished or renovated.
- i. Scheduled starting and completion dates of asbestos removal work (or any other activity, such as site preparation that would break up, dislodge, or similarly disturb asbestos material) in a demolition or renovation; planned renovation operations involving individual nonscheduled operations shall only include the beginning and ending dates of the report period as described in paragraph (a) (4) (iii) of 40 CFR 61.145.
- j. Scheduled starting and completion dates of demolition or renovation.
- k. Nature of planned demolition or renovation and method(s) to be used, including demolition or renovation techniques to be used and description of affected facility components.
- l. Procedures to be used to comply with the requirements of USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61 Subpart M).



- m. Name and location of the waste disposal site where the asbestos containing waste material will be deposited.
- n. A certification that at least one person trained as required by paragraph (c) (8) of 40 CFR 61.145 will supervise the stripping and removal described by this notification.
- o. Description of procedures to be followed if the unexpected ACM is found or Category II non-friable ACM becomes crumbled, pulverized, or reduced to powder.
- p. Name, address, and telephone number of the waste transporter.

B. STATE AND LOCAL AGENCIES:

- 1. Send written notification as required by state and local regulations prior to beginning any work on ACM.

1.5 PERMITS:

- A. Permit: All asbestos containing waste are to be transported by an entity maintaining the current "Industrial waste hauler permit" specifically for ACM, as required for transporting of waste ACM to a disposal site.
- B. Contractor is responsible for obtaining any demolition, building, renovation or other permits, and for paying application fees, if any, where required by State or Local jurisdictions.

1.6 LICENSES:

- A. Licenses: Maintain current licenses as required by applicable state or local jurisdictions for the removal, transporting, disposal or other regulated activity related to the work of this contract.

1.7 POSTING AND FILING OF REGULATIONS

- A. Posting and Filing of Regulations: Post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulations and standard. Maintain one copy of each at job site. Keep on file in Contractor's office one copy of each.

1.8 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. No work shall begin until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.
 - 1. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work including:



- a. State and Local Regulations: Submit copies of codes and regulations applicable to the work if requested by the Owner's Representative.
2. Notices: Submit notices required by federal, state and local regulations together with proof of timely transmittal to the agency requiring the notice.
3. Permits: Submit copies of current valid permits required by state and local regulations.
4. Licenses: Submit copies of all State and local licenses and permits necessary to carry out the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01098

NOT FOR BIDDING PURPOSES



SECTION 01301 - SUBMITTALS - ASBESTOS ABATEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including the following:
- B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:
 - 1. Insurance Certificates
 - 2. Non-Collusion Statement
 - 3. Performance Bond
 - 4. Labor /Material Payment Bond
 - 5. Contractor's Construction Schedule
 - 6. Schedule of Values
 - 7. 10 Day Notification
 - 8. Certificates and Licenses:
 - a. Delaware Specific State Licenses
 - b. Asbestos Abatement Worker Certification – Employees
 - c. Asbestos Abatement Supervisors Certifications
 - 9. Worker Acknowledgement Forms
 - 10. Worker Medicals
 - 11. Respiratory Protection Plan
 - 12. Plan of Action
 - 13. Contingency Plan
 - 14. List of Subcontractors
 - 15. Product – MSDS
 - 16. Equipment List – Manufacture's Data



17. Permits

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related elements in the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Owner's Representative reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
- B. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
1. Allow 2 weeks for initial review. Allow additional time if the Owner's Representative must delay processing to permit coordination with subsequent submittals.
 2. If an intermediate submittal is necessary, process the same as the initial submittal.
 3. Allow 2 weeks for reprocessing each submittal.
 4. No extension of Contract Time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the work to permit processing.
- C. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4 by 5 inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of the Owner's Representative.
 - d. Name and address of the Contractor.
 - e. Name and address of the subcontractor.
 - f. Name and address of the supplier.
 - g. Name of the manufacturer.
 - h. Number and title of appropriate Specification Section.



- i. Drawing number and detail references, as appropriate.
- D. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Owner's Representative using a transmittal form. The Owner's Representative will not accept submittals received from sources other than the Contractor.
 1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.4 SUBMITTAL SCHEDULE

- A. Listing: At the end of this section is a listing of the principal submittals required for the work. This listing is not necessarily complete, nor does the listing reflect the significance of each submittal requirement. The listing is included only for the convenience of users of the Contract Documents.
- B. Submittal Schedule: After development and acceptance of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for submitting the Contractor's Construction Schedule.
 1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Contractor's Construction Schedule.
 2. Prepare the schedule in chronological order. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category (Shop Drawings, Product Data, or Samples).
 - d. Name of the subcontractor.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for resubmittal.
 - g. Scheduled date for the Owner's Representative's final release or approval.
- C. Distribution: Following response to the initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- D. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.



1.5 SHOP DRAWINGS

- A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
 1. Dimensions.
 2. Identification of products and materials included by sheet and detail number.
 3. Compliance with specified standards.
 4. Notation of coordination requirements.
 5. Notation of dimensions established by field measurement.
- C. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 36 by 48 inches.
- D. Initial Submittal: Submit one correctable, translucent, reproducible print and one blue- or black-line print for the Owner's Representative's review. The Owner's Representative will return the reproducible print.
 1. One of the prints returned shall be marked up and maintained as a "Record Document."
 2. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

1.6 PRODUCT DATA

- A. Collect Product Data into a single submittal. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.



- B. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
- C. Submittals: Submit 3 copies of each required submittal. The Owner's Representative will retain two and will return one marked with action taken and corrections or modifications required.
 - 1. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
- D. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - 1. Do not proceed with installation until a final submittal is in the installer's possession.
 - 2. Do not permit use of unmarked copies of Product Data in connection with construction.

1.7 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
 - 1. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - 2. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, and details of assembly, connections, operation, and similar construction characteristics.
- B. Field samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.
 - 1. Fully comply with submittal requirements. Process transmittal forms to provide a record of activity.

1.8 MISCELLANEOUS SUBMITTALS:

- A. Material Safety Data Sheets: Process material safety data sheets as "product data." These are submitted for information purposes only.
- B. Inspection and Test Reports: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.
- C. Records of Actual Work: Furnish 4 copies of records of actual work, one of which will be returned for inclusion in the record documents specified in section "Project Closeout".
- D. Standards: Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, submit a single copy of standards for the Owner's Representative's use. Where workmanship, whether at the project site



or elsewhere is governed by a standard, furnishes additional copies of the standard to fabricators, installers and others involved in the performance of the work.

- E. Closeout Submittals: Refer to section "Project Closeout" and to individual sections of these specifications for specific submittal requirements of project closeout information.
- F. Record Documents: Furnish set of original documents as maintained on the project site. Along with original marked-up drawings provide 2 photographic copies of marked-up drawings, which, at the Contractor's option, may be reduced to not less than half size.

1.9 OWNER'S REPRESENTATIVE'S ACTION

- A. Except for submittals for the record or information, where action and return is required, the Owner's Representative will review each submittal, mark to indicate action taken, and return promptly.
 - 1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Owner's Representative will stamp each submittal with a uniform, action stamp. The Owner's Representative will mark the stamp appropriately to indicate the action taken, as follows:
 - 1. Final Unrestricted Release: When the Owner's Representative marks a submittal "Approved," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
 - 2. Final-But-Restricted Release: When the Owner's Representative marks a submittal "Approved as Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 - 3. Returned for Resubmittal: When the Owner's Representative marks a submittal "Not Approved, Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action marks.
 - a. Do not use, or allow others to use, submittals marked "Not Approved, Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.
 - 4. Received - Not Reviewed: When the Owner's Representative marks a submittal "Received - Not reviewed" this acknowledges that the submittal has been received. This action applies to materials that are to be submitted for information purposes only, and where no review or action by the Owner's Representative is required.
 - 5. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Owner's Representative will return the submittal marked "Action Not Required."



PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

END OF SECTION 01301

NOT FOR BIDDING PURPOSES



SECTION 01301 - SUBMITTALS - ASBESTOS ABATEMENT

SUBMITTAL CHECKLIST

The following is a listing of the submittals required by each section.

01013 Summary of Work - Asbestos Abatement

Before Start of Work:

Plan of Action

Pre-construction Inspection

01028 Application for Payment - Asbestos Abatement

Before Start of Work:

Schedule of Values

Periodically During Work:

Refer to section for specific requirements for Payment Requests

01043 Project Coordination - Asbestos Abatement

Before Start of Work:

Contractors Construction Schedule

Contingency Plans

Telephone Numbers

Notifications sent to other entities at the work site.

Notifications sent to emergency service agencies.

Resume: of general superintendent.

Accreditation: Certificate of accreditation of general superintendent

Staff Names:

Periodically During Work:

Daily Logs

Event Reports

Accident Reports

Discovered Condition Reports

01098 Codes, Regulations and Standards - Asbestos Abatement

Before Start of Work:

State of Delaware Regulations

Local Regulations

State Of Delaware Contractor Licenses

Notifications to DNREC and EPA

Permits (Where Applicable)



01301 Submittals

Before Start of Work:

Submittal Schedule

Periodically During Work:

Progress photographs

Record Documents

01503 Temporary Facilities - Asbestos Abatement

Before Start of Work:

Scaffolding

Hot water heater

Decontamination Unit Sub-panel

Ground Fault Circuit Interrupters (GFCI)

Lamps and Light Fixtures

Temporary Heating Units

Self Contained Toilet Units: Product Data, Sub-contractor

First Aid Supplies

Fire Extinguishers: product data, location schedule

01513 Temporary Pressure Differential & Air Circulation System

Before Start of Work:

Pressure Differential System Design

HEPA Filtered Fan Units: Product data

Monitoring Equipment: Product data

Auxiliary Generator: Product data.

Power Switch: Product data

Auxiliary Power system, Shop Drawing

Periodically During Work:

Pressure Differential Monitoring Results

01526 Temporary Enclosures

Material Safety Data Sheet

Spray Cement: Product data.

Spray Cement: Manufacturer's installation instructions.

Spray Cement: Material Safety Data Sheet.

Sheet Plastic: Test reports on NFPA 701 test.

Signs: Samples

01560 Worker Protection - Asbestos Abatement

Before Start of Work:

AHERA Accreditation: for each worker.

State of Delaware License: for each worker.

Historic Airborne Fiber Data.

Certificate Worker Acknowledgment: for each worker.



Report from Medical Examination: of each worker.

01562 Respiratory Protection

Before Start of Work:

Product Data.
NIOSH and MSHA Certifications.
Type "C": System Diagram.
Type "C": Operating Instruction.
Respiratory Protection Program: written manual.
Respiratory Protection Program: form at end of section.
Historic Airborne Fiber Data.
Resume information.

01563 Decontamination Units

Before Start of Work:

Personnel Decontamination Unit: shop drawing.
Equipment Decontamination Unit: shop drawing.
Shower Pan: shop drawing.
Shower Walls: product data.
Shower Head and Controls: product data.
Filters: product data.
Filters: shop drawing.
Hose Bib: product data.
Wash Station Shower Stall: product data.
Wash Station Shower Stall: shop drawing.
Elastomeric membrane: product data.
Lumber: product data on fire resistance treatment.
Sump Pump: product data.
Signs: samples.

01601 Materials and Equipment - Asbestos Abatement

Before Start of Work:

Product List Schedule

01632 Substitutions - Asbestos Abatement

Before Start of Work:

Refer to section.

Periodically During Work:

Refer to section

01701 Project Closeout - Asbestos Abatement

Periodically During Work:

Refer to section



01711 Project Decontamination

Periodically During Work:

Fire Test on Lock Back Encapsulates used.

02084 Disposal of Regulated Asbestos-Containing Material

Before Start of Work:

Waste Hauler State License

Waste Hauler Local License

Name and address of landfill.

Chain of Custody form

Waste Manifest Form.

Label Samples.

Periodically During Work:

On a weekly basis: copies of manifests and disposal site receipts.

END OF SUBMITTAL CHECKLIST

NOT FOR BIDDING PURPOSES



SECTION 01503 - TEMPORARY FACILITIES - ASBESTOS ABATEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Temporary heat.
 - 4. Ventilation.
 - 5. Telephone service.
 - 6. Sanitary facilities, including drinking water.
- C. Support facilities include, but are not limited to, the following:
 - 1. Field offices and storage sheds (if needed.)
 - 2. Temporary enclosures.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, and lights.

1.3 DESCRIPTION OF REQUIREMENTS:

- A. General: Provide temporary connections to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.4 SUBMITTALS

- A. Before the Start of Work: Submit the following to the Owner's Representative for review. Begin no work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.
 - 1. Hot water heater: Submit manufacturers name, model number, size in gallons (liters), heating capacity, power requirements.



2. Decontamination Unit Sub-panel: Submit product data.
3. Ground Fault Circuit Interrupters (GFCI): Submit product data.
4. Lamps and Light Fixtures: Submit product data.
5. Temporary Heating Units: Provide product data.
6. Temporary Cooling Units: Provide product data and installation instructions.
7. Self-Contained Toilet Units: Provide product data and name of sub-contractor to be used for servicing self contained toilets. Submit method to use for servicing.
8. Fire Extinguishers: Provide product data. Submit schedule indicating location at job site and compliance with NFPA 10 and NFPA 241.
9. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
10. Implementation and Termination Schedule: Prior to mobilization, submit a schedule indicating implementation and termination of each temporary utility.

1.5 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 1. Building code requirements.
 2. Health and safety regulations.
 3. Utility company regulations.
 4. Police, fire department, and rescue squad rules.
 5. Environmental protection regulations.
- B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
- C. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
- D. Inspections: Arrange for authorities to have jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention



measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. General: Provide new materials and equipment. If acceptable to the Owner's Representative, the Contractor may use undamaged, previously used materials and equipment in serviceable condition. Provide materials and equipment suitable for use intended.
- B. Lumber and Plywood:
 - 1. For job-built temporary offices, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
- C. Scaffolding: Provide scaffolding, ladders and/or staging, etc., as necessary to accomplish the work of this contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of scaffolding shall comply with applicable OSHA provisions.
 - 1. Equip rungs of metal ladders, etc. with an abrasive non-slip surface.
 - 2. Provide a nonskid surface on scaffold surfaces subject to foot traffic.

2.2 WATER SERVICE

- A. Water: Provide potable water approved by local health authorities.
- B. Temporary Water Service Connection: After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment. Provide separate hoses and/or pumps for shower water and hand-washed water, without the possibility of cross connection.
- C. Water Hoses: Provide heavy-duty, abrasion-resistant, flexible hoses in diameters and lengths necessary to adequately serve temporary facilities, and with a pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
 - 1. Provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
- D. Hot Water Heater: Provide UL rated minimum 40 gallon (150 liters) electric hot water heater to supply hot water for the Decontamination Unit shower. Activate from 30-amp circuit breaker located within the Decontamination Unit subpanel. Provide with relief valve compatible with water heater operation, pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" (30 cm. X 30 cm. X 15 cm) deep pan, made of 19-gauge galvanized steel, with handles. A 3-quart (3 liter) kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the hot water heater with bailing wire or similar material. Wiring of the hot water heater shall be in compliance with NEMA, NECA, and UL standards.



2.3 ELECTRICAL SERVICE:

- A. General: Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service.
- B. Temporary Power: Provide service to Decontamination Unit subpanel with minimum 60 amp, 2 pole circuit breakers or fused disconnect connected to the building's main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate electrical equipment required for completion of the work.
 - 1. Connection to the building's main distribution panel is to be made by an appropriate licensed electrician
- C. Voltage Differences: Provide identification warning signs at power outlets which are other than 110–120-volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.
- D. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters (GFCI), reset button, and pilot light for connection of power tools and equipment.
 - 1. Locate GFCI's exterior to Work Area so that circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for circuit to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authorities. Locate in panel exterior to Work Area.
- E. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- F. Lamps and Light Fixtures: Provide general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Protect lamps with guard cages or tempered glass enclosures, where fixtures are exposed to breakage by construction operations. Provide vapor tight fixtures in work area and decontamination units. Provide exterior fixtures where fixtures are exposed to the weather or moisture.

2.4 TEMPORARY HEAT:

- A. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed. 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.

2.5 TEMPORARY STRUCTURES

- A. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar non-absorbent material.



2.6 FIRST AID

- A. First Aid Supplies: Comply with governing regulations and recognized recommendations within the construction industry.

2.7 FIRE EXTINGUISHERS:

- A. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA recommended classes for the exposures.
- B. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 EXECUTION

3.1 INSTALLATION, GENERAL

- A. General: Use qualified personnel for the installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with the performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of complete permanent facilities.
- C. Require that personnel accomplishing this work be licensed as required by local authority for the work performed.
- D. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.
- E. Restore modified building systems in a like operational condition or industry acceptable condition which assures the safety of the system and structure.

3.2 SCAFFOLDING

- A. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.
- B. Clean as necessary debris from non-slip surfaces.
- C. At the completion of abatement work clean construction aids within the work area, wrap in one layer of 6 mil (0.15 mm) polyethylene sheet and seal before removal from the Work Area.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: If required, engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, the remainder provide with matching, compatible materials and equipment. Comply with company recommendations.



1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
3. Charges associated with services provided by the local utility company is the sole responsibility of the contractor.

B. Water Service:

1. Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" (19 mm) pipe-size connection, and a maximum flow of 10 g.p.m. (38 liters / minute) each to cold water supply. Supply hot and cold water to the Decontamination Unit in accordance with Section 01563.
 - a. Maintain hose connections and outlet valves in leak-proof condition. Where finish work below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.
2. Sterilization: Sterilize temporary water piping prior to use.

C. Electrical Service:

1. Lock out: Lock out all existing power to or through the work area as described below. Unless specifically noted, otherwise existing power and lighting circuits in the Work Area are not to be used. All power and lighting for the Work Area and Decontamination facilities are to be provided from the temporary electrical panel described below.
 - a. Comply with requirements to OSHA 29 CFR 1910.147 the control of hazardous energy lock out/tag out.
 - b. Lock out power to Work Area by switching off breakers serving power or lighting circuits in work area. Tag out breakers with notation "DANGER circuit being worked on". Lock panel and have all keys under control of authorized person who has locked pane.

Lock out power to circuits running through Work Area wherever possible by switching off and locking all breakers serving these circuits. Tag out breakers with notation "DANGER circuit being worked on". Sign and Date Danger Tag. Lock panel and supply keys to authorized person who has applied locks. If circuits cannot be shut down for any reason, label at intervals of 4-feet" (1.25 meter) on center with signs reading, "DANGER live electric circuit. Electrocution hazard." All asbestos abatement work in the vicinity of the live circuit is to be performed dry. All necessary notifications and procedures for dry removal are to be followed.
 - d. Lock out power to electrical equipment located in the work area, and to any fans or other equipment that is going to be worked on.
2. Temporary Electrical Panel: Provide temporary electrical panel sized and equipped to accommodate electrical equipment and lighting required by the work. Connect temporary



- panels to existing building electrical systems. Protect with circuit breaker or fused disconnect. The panel is to be installed by an appropriate licensed electrician.
3. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.
 4. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.
 5. Temporary Wiring: In the Work Area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.
 6. Number of Branch Circuits: Provide sufficient branch circuits as required by the work. Branch circuits are to originate at temporary electrical panels. At minimum provide the following:
 - a. One Circuit for each HEPA filtered fan unit
 - b. For power tools and task lighting provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).
 - c. One outlet in the work area for each 2500 square feet (225 square meters) of work area
 - d. One outlet at each decontamination unit, located in the equipment room
 7. 110–120-volt 20-amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting visual inspection and air sampling during the work as follows:
 - a. One in each work area
 - b. One at the clean side of each Decontamination Unit.
 - c. One at each exhaust location for HEPA filtered fan units
 8. 110–120-volt 20-amp branch circuits with 4-gang outlet for Owner's exclusive use for conducting visual inspection and final air sampling as set forth in Section 01711 Project Decontamination as follows:
 - a. Five inside work area
 - b. Two outside work areas in location designated by Owner's Representative
- D. Temporary Lighting:
1. Lock out: Lock out existing power to lighting circuits in Work Area as described in section 01526 Temporary Enclosures. Unless specifically noted, otherwise existing lighting circuits to the Work Area are not to be used. All lighting to the Work Area and Decontamination facilities is to be provided from the temporary electrical panel described above.
 2. Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:



- a. One 200-watt incandescent lamp per 1000 square feet (92.9 square meters) of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet (15.2 meters). In stairways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere, by combining use of daylight, general lighting, and portable plug-in task lighting.
 - b. Provide lighting in areas where work is being performed as required to supply a 100-foot candle (1,076 lumens/sq meter) minimum light level.
 - c. Provide lighting in any area subjected to a visual inspection as required to supply a 100-foot candle (1,076 lumens/sq meter) minimum light level.
 - d. Provide lighting in the Decontamination Unit as required to supply a 50-foot candle (538 lumens/sq meter) minimum light level.
3. Number of Lighting Circuits: Provide sufficient lighting circuits as required by the work. Lighting circuits are to originate at temporary electrical panels.
4. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.
- E. Temporary Heat:
 1. General: Provide temporary heat where indicated or needed for performance of the Work.
 2. Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel-oil heaters with individual space thermostatic control.
 - a. Use of gas flame-burning space heaters, open flames, or salamander heating units is prohibited.
 3. Maintain a minimum temperature of 70 degrees F (21 degrees C). Where finished work has been finished.
 4. Maintain a minimum temperature of 75 degrees F (24 degrees C) in the shower of the decontamination unit.
 5. Always Maintain a minimum temperature of 65 degrees F (18 degrees C) in the Work Area that work is going on. At all other times and at completion of removal work, but before the start of reconstruction work, maintain a minimum temperature of 50 degrees F (10 degrees C).
- F. Temporary Utilities
 1. Temporary Telephones: Provide temporary telephone service throughout the construction period for personnel engaged in construction activities. Installation telephones on a separate line for each temporary office and first-aid station.
 2. Separate Telephone Lines: Provide additional telephone lines for the following:
 - a. Where an office has more than 2 occupants, install a telephone for each additional occupant or pair of occupants.



- b. At each telephone, post a list of emergency telephone numbers.

G. Sanitary Facilities:

1. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where the facilities will best serve the Project's needs.
 - a. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used materials.
2. Provide separate facilities for male and female personnel.
3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
4. Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper supply.
 - a. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7.2 to 12.8 deg C).

3.4 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, field laboratories, storage sheds, and other temporary construction and support facilities for easy access.
 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and complete, from exposure, foul weather, other construction operations, and similar activities.
 1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load bearing, wood-framed construction.
 4. Where temporary wood or plywood enclosure exceeds 100 sq. ft. (9.2 sq. m) in area, use UL-labeled, fire-retardant-treated material for framing and main sheathing.



3.5 FIRE PROTECTION FACILITIES INSTALLATION

- A. Except for the use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion or longer, as requested by the Owner's Representative.
- B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires.
 - 4. Prohibit smoking within any building, structure, and other enclosures or in hazardous fire-exposure areas.
 - 5. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on the use of facilities.
- D. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting including flashing red or amber lights.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in the use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Unless the Owner's Representative requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities installed by the Contractor are the Contractor's property.



2. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION 01503

NOT FOR BIDDING PURPOSES



SECTION 01513 - TEMPORARY PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 MONITORING

- A. Continuously monitor and record the pressure differential between the Work Area and the building outside of the Work Area with a monitoring device incorporating a continuous recorder (e.g. strip chart).

1.3 SUBMITTALS

- A. Before Start of Work: Submit design of pressure differential system to the Owner's Representative for review. Do not begin work until the submittal is returned with the Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use. Include in the submittal at a minimum:
 - 1. Number of HEPA filtered fan units required and the calculations necessary to determine the number of machines
 - 2. Description of projected air flow within the Work Area and methods required to provide adequate air flow in all portions of the work area
 - 3. Anticipated pressure differential across Work Area enclosures
 - 4. Description of methods of testing for correct air flow and pressure differentials
 - 5. Manufacturer's product data on the HEPA filtered fan units to be used
 - 6. Location of the machines in the Work Area
 - 7. Method of supplying adequate power to the machines and designation of building electrical panel(s) which will be supplying the power.
 - 8. Description of work practices to ensure that airborne fibers travel away from workers
 - 9. Manufacturer's product data on equipment is used to monitor pressure differential between inside and outside of Work Area.
 - 10. Manufacturer's product data on auxiliary generator to be used
 - 11. Manufacturer's product data on auxiliary power switch to be used
 - 12. Schematic diagram of power and auxiliary power supply to HEPA filtered fan units



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

1.4 QUALITY ASSURANCE:

- A. Monitor pressure differential at Personnel and Equipment Decontamination Units with a differential pressure meter equipped with a continuous recorder. Meter shall be equipped with a warning buzzer which will sound if pressure differential drops below 0.02 inch of water.

PART 2 - PRODUCTS

2.1 HEPA FILTERED FAN UNITS:

- A. General: Supply the required number of HEPA filtered fan units to the site in accordance with these specifications. Use units that meet the following requirements.
- B. Cabinet: Constructed of durable materials able to withstand damage from rough handling and transportation. The width of the cabinet should be less than 30 inches to fit through standardized doorways. Provide units whose cabinets are:
1. Factory-sealed to prevent asbestos-containing dust from being released during use, transport, or maintenance.
 2. Arranged to provide access to and replacement of all air filters from intake end
 3. Mounted on casters or wheels
- C. Fans: Rate capacity of fan according to usable air-moving capacity under actual operating conditions.
- D. HEPA Filters: Provide units whose final filter is the HEPA type with the filter media (folded into closely pleated panels) completely sealed on all edges with a structurally rigid frame.
1. Provide units with a continuous rubber gasket located between the filter and the filter housing to form a tight seal.
 2. Provide HEPA filters that are individually tested and certified by the manufacturer to have an efficiency of not less than 99.97 percent when challenged with 0.3 um dioctylphthalate (DOP) particles when tested in accordance with Military Standard Number 282 and Army Instruction Manual 136-300-175A. Provide filters that bear a UL586 label to indicate ability to perform under specified conditions.
 3. Provide filters that are marked with: the name of the manufacturer, serial number, air flow rating, efficiency and resistance, and the direction of test air flow.
 4. 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. Provide units with the following pre-filters:



- a. First-stage pre-filter: low-efficiency type (e.g., for particles 100 um and larger)
 - b. Second-stage (or intermediate) filter: medium efficiency (eg., effective for particles down to 5 um)
 - c. Provide units with pre-filters and intermediate filters installed either on or in the intake grid of the unit and held in place with special housings or clamps
- E. Instrumentation: Provide units equipped with:
1. Magnehelic gauge or manometer to measure the pressure drop across filters and indicate when filters have become loaded and need to be changed
 2. A table indicating the usable air-handling capacity for various static pressure readings on the Magnehelic gauge affixed near the gauge for reference on the Magnehelic reading indicating at what point the filters should be changed, noting Cubic Feet per Minute (CFM) (Liters / Second (LPS)) air delivery at that point
 3. Elapsed time meter to show the total accumulated hours of operation
- F. Safety and Warning Devices: Provide units with the following safety and warning devices:
1. Electrical (or mechanical) lockout to prevent fan from operating without a HEPA filter
 2. Automatic shutdown system to stop fan in the event of a rupture in the HEPA filter or blocked air discharge
 3. Warning lights to indicate normal operation (green), too high a pressure drop across the filters (i.e., filter overloading) (yellow), and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge) (red)
 4. Audible alarm if unit shuts down due to operation of safety systems
- G. Electrical components: Provide units with electrical components approved by the National Electrical Manufacturers Association (NEMA) and Underwriter's Laboratories (UL). Each unit is equipped with overload protection sized for the equipment. The motor, fan, fan housing, and cabinet are to be grounded.
- H. Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
- I. Manufacturer: Subject to compliance with requirements, provide products of the following:
1. HEPA filtered Fan Units: The following machines are standard 2000 CFM machines used in typical asbestos abatement jobs.
 2. This listing is not to be construed as being prescriptive for the project.
- | | |
|---|-------------------------------------|
| Aerospace America, Inc.
900 Truman Parkway
P.O. Box 189
Bay City, Michigan 48707
(517) 684-2121 | "Aero-Clean 2000" |
| Abatement Technologies
3305 Breckinridge Blvd. #118 | "HEPA-AIRE 1990 and HEPA-AIRE 2000" |



Deluth, GA 30136
(800) 634-9091 or (404) 925-2761

Global Consumer Services, Inc.
4615-1U E. Industrial St.
Sims Valley, CA 93063
(805) 579-0230

M-Tec Corp.
1300 W. Steel Rd.
Unit #2
Morrisville, PA 19067
(215) 295-8208

Micro-Trap
Alumina II

3. Large Capacity: The following are large capacity 5000-6000 CFM machines used on large asbestos abatement jobs.

Abatement Technologies
3305 Breckinridge Blvd. #118
Deluth, GA 30136
(800) 634-9091 or (404) 925-2761

"HEPA-AIRE 5000"
model #5000C

PART 3 - EXECUTION

3.1 PRESSURE DIFFERENTIAL ISOLATION

- A. Isolate the Work Area from all adjacent areas or systems of the building with a Pressure Differential that will cause a movement of air from outside to inside at any breach in the physical isolation of the Work Area.
- B. Relative Pressure in Work Area: Continuously maintain the work area at an air pressure that is lower than that in any surrounding space in the building, or at any location in the immediate proximity outside of the building envelope. This pressure differential when measured across any physical or critical barrier must equal or exceed a static pressure of:
- 0.02 inches (0.5 mm) of water.
- C. Accomplish the pressure differential by exhausting enough HEPA filtered fan units from the work area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the Work Area. Determine the number of units required for pressure isolation by the following procedure:
- Establish required air circulation in the work area, personnel and equipment decontamination units.
 - Establish isolation by increased pressure in adjacent areas or as part of seals where required.



3. Exhaust enough units from the work area to develop the required pressure differential.
 4. The required number of units is the number determined above plus one additional unit.
 5. Vent HEPA filtered fan units to outside of the building unless authorized in writing by Owner's Representative.
 6. Vent each HEPA filtered fan unit to inlet of second unit. Vent a second unit to a controlled area in the building. Insuring that controlled area is always isolated from balance of building by critical barriers that units are in operation.
 7. Mount units to exhaust directly or through disposable ductwork.
 8. Use only new ductwork except for sheet metal connections and elbows.
 9. Use ductwork and fittings of same diameter or larger than discharge connection on fan unit.
 10. Use spiral wire-reinforced flex duct in lengths not greater than 50 feet (15 meters).
- D. Isolation of elevators, stair towers, and return air intakes: Erect seals with an air space at doors to elevators and stair towers. Pressurize this space with HEPA-filtered air so that it is at a pressure greater than either the Work Area elevator shaft or stair tower.
1. Fabricate seal by first sealing door with duct tape and 6 mil (0.15 mm) polyethylene. Construct a barrier from ½" (12mm) CDX plywood supported by 2" X 4" (51 mm x 102 mm) wood studs at 16" (410 mm) on centers. Space face of barrier a minimum of 3" (76 mm) from face of door. Seal barrier with 6 mil (0.15 mm) sheet plastic and duct tape.
 2. Use plywood and framing lumber that is treated to be fire resistant.
 3. Pressurize space with exhaust from HEPA filtered fan unit. Continuously maintain a pressure differential with this space a minimum of 0.02 inches (0.5 mm) of water higher in static pressure than any adjacent space.
 4. Locate HEPA filtered fan unit outside of work area. Fabricate a manifold as required to distribute air to individual spaces to be isolated. Provide relief venting at unit as required to prevent shut down due to low air flow while still maintaining required air pressure.

3.2 AIR CIRCULATION IN THE WORK AREA:

- A. Air Circulation: For purposes of this section air circulation refers to either the introduction of outside air to the Work Area or the circulation and cleaning of air within the Work Area.
- B. Air circulation in the Work Area is a minimum requirement intended to help maintain airborne fiber counts at a level that does not significantly challenge the work area isolation measures. The Contractor may also use this air circulation as part of the engineering controls in the worker protection program.
- C. Determining the Air circulation Requirements: The air flow volume (cubic meters per minute) exhausted (removed) from the workplace must exceed the amount of makeup air supplied to the enclosure. Provide a fully operational air circulation system supplying a minimum of the following air circulation rate:
 1. 4 air changes per hour



- D. Determine Number of Units needed to achieve the required air circulation according to the following procedure:
1. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total air circulation requirement in cubic feet per minute (CFM) for the work area by dividing this volume by 60 and multiplying by the air change rate.
 2. Air Circulation Required in Cubic Feet of Air per Minute (CFM) =
$$\frac{\text{Volume of work area (cu. ft.)}}{60 \text{ (minutes per hour)}} \times \text{Number of air changes per hour}$$
 3. Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

3.3 EXHAUST SYSTEM:

- A. Pressure differential isolation and air circulation and pressure differential in the Work Area are to be accomplished by an exhaust system as described below:
1. Exhaust all units from the Work Area to meet the air circulation requirements of this section.
 2. Location of HEPA Filtered Fan Unit: Locate fan unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses Work Area as much as possible. This may be accomplished by positioning the HEPA filtered fan unit(s) at a maximum distance from the worker access opening or other makeup air sources.
 3. The end of the unit or its exhaust duct should be placed through an opening in the plastic barrier or walk covering. Seal plastic around the unit or duct with tape.
 4. Vent to Outside of Building, unless authorized in writing by the Owner's Representative.
 5. Air Handling Unit Exhaust: The exhaust plume from air handling units should be located away from adjacent personnel and intakes for HVAC systems.
 6. Decontamination Units: Arrange Work Area and decontamination units so that the majority of make up air comes through the Decontamination Units. Use only personnel or equipment Decontamination Unit at any time and seal the other so that make up air passes through unit in use.

3.4 AIR CIRCULATION IN DECONTAMINATION UNITS:

- A. Pressure Differential Isolation: Continuously maintain the pressure differential required for the work area in the:
1. Personnel Decontamination Unit: across the Shower Room with the Equipment Room at a lower pressure than the clean room.
 2. Equipment Decontamination Unit: Across the Holding Room with the Washroom at a lower pressure than the Clean Room.
- B. Air Circulation: Continuously maintain air circulation in Decontamination Units at same level as required for Work Area.



- C. Air Movement: Arrange air circulation through the Personnel Decontamination Unit so that it produces a movement of air from the Clean Room through the Shower Room into the Equipment Room. At each opening, the air flow velocity must be sufficient to provide visible indications of air movement into the work area. The velocity of air flow within the enclosure must be adequate to remove airborne contamination from each worker's breathing zone without disturbing the asbestos-containing material on surfaces.

3.5 USE OF THE PRESSURE DIFFERENTIAL AND AIR CIRCULATION SYSTEM:

- A. General: Each unit shall be serviced by a dedicated minimum 115V-20A circuit with ground fault circuit interrupter (GFCI) supplied from temporary power supply installed under requirements of Section 01503 "Temporary Facilities." Do not use existing branch circuits to power fan units.
- B. Air Flow Tests: Air flow patterns will be checked before removal operations begin, at least once per operating shift and any time there is a question regarding the integrity of the enclosure. The primary test for air flow is to trace air currents with smoke tubes or other visual methods. Flow checks are made at each opening and at each doorway to demonstrate that air is being drawn into the enclosure and at each worker's position to show that air is being drawn away from the workers' location and toward the HEPA filtration unit.
- C. Demonstrate Condition of Equipment for each HEPA filtered fan unit and pressure differential monitoring equipment including proper operation of the following:
1. Squareness of HEPA Filter
 2. Condition of Seals
 3. Proper operation of all lights
 4. Proper operation of automatic shut down if exhaust is blocked
 5. Proper operation of alarms
 6. Proper operation of Magnehelic gauge
 7. Proper operation and calibration on pressure monitoring equipment
- D. Demonstrate Operation of the pressure differential system to the Owner's Representative will include, but not be limited to, the following:
1. Plastic barriers and sheeting move lightly in toward Work Area,
 2. Curtain of decontamination units move lightly in toward Work Area,
 3. There is a noticeable movement of air through the Decontamination Unit.
 4. Use smoke tube to demonstrate air movement from Clean Room through Shower Room to Equipment Room.
 5. Use smoke tubes to demonstrate a definite motion of air across all areas in which work is to be performed.
 6. Use a differential pressure meter or manometer to demonstrate the required pressure differential at every barrier separating the Work Area from the balance of the building, equipment, and ductwork or outside.



7. Modify the Pressure Differential System as necessary to demonstrate successfully the above.

E. Use of System During Abatement Operations:

1. Start fan units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain constant pressure differential and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.
2. Monitoring Pressure Within the Enclosure: After the initial air flow patterns have been checked, the static pressure must be monitored within the enclosure. Monitoring may be made using manometers, pressure gauges, or combinations of these devices. It is recommended that they be attached to alarms and strip chart recorders.
3. Do not shut down air pressure differential system during encapsulating procedures, unless authorized by the Owner's Representative in writing. Supply sufficient pre-filters to allow frequent changes.
4. Start abatement work at a location farthest from the fan units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and fan units are operating again.
5. Corrective Actions: If the manometers or pressure gauges demonstrate a reduction in pressure differential below the required level, work should cease and the reason for the change investigated and appropriate changes made. The air flow patterns should be retested before work begins again.
6. At completion of abatement work, allow fan units to run as specified under section 01711, to remove airborne fibers that may have been generated during abatement work and cleanup and to purge the Work Area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted asbestos material was encountered during any abatement work.

F. Dismantling the System:

1. When a final inspection and the results of final air tests indicate that the area has been decontaminated, fan units may be removed from the Work Area. Before removal from the Work Area, remove and properly dispose of pre-filter, decontaminate exterior of machine and seal intake to the machine with 6 mil (0.15 mm) polyethylene to prevent environmental contamination from the filters.

END OF SECTION - 01513



SECTION 01526 - TEMPORARY ENCLOSURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this section.

1.2 SUBMITTALS:

- A. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or stamped "Received - Not Reviewed".
 - 1. Spray Cement: Submit following:
 - a. Product description includes major components and solvents.
 - b. Manufacturer's installation instructions. Indicate portions applicable to the project.
 - 2. Sheet Plastic: For fire retardant plastic submit test reports on NFPA 701 test.
 - 3. Signs: Submit samples of signs to be used.
- B. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal has been "Received - Not Reviewed".
 - 1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for the following:
 - a. Spray Cement.

PART 2 - PRODUCTS

2.1 SHEET PLASTIC:

- A. Polyethylene Sheet: A single polyethylene film in the largest sheet possible to minimize seams, 6.0 mil (0.15 mm) thick, clear, frosted, or black as indicated.
- B. Flame Retardant Polyethylene Sheet: Provide flame-resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil (0.15 mm) thick frosted or black as indicated.



2.2 MISCELLANEOUS MATERIALS:

- A. Duct Tape: Provide duct tape in 2 inches or 3-inch (50 mm or 75 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
- B. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

PART 3 - EXECUTION

3.1 SEQUENCE OF WORK:

- A. Carry out work of this section sequentially. Complete each of the following activities in accordance with requirements before proceeding to the next.
 - 1. Provide emergency exits and emergency lighting.
 - 2. Control access
 - 3. Provide respiratory and worker protection.
 - 4. Provide Critical Barriers.
 - 5. Prepare Area.
 - 6. Provide Primary Barrier.
 - 7. Provide Isolation Areas as required.
 - 8. Provide Secondary Barrier.

3.2 GENERAL:

- A. Work Area: the location where asbestos abatement work occurs. The Work Area is a variable of the extent of work of the Contract. It may be a portion of a room, a single room, or a complex of rooms. A "Work Area" is considered contaminated during work and must be isolated from the balance of the building and decontaminated at the completion of the asbestos control work.
- B. Completely isolate the Work Area from other parts of the building to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in Section 01711. Perform all such required cleaning or decontamination at no additional cost to owner.
- C. Construct enclosures to provide an air-tight seal around ducts and openings into existing ventilation systems and around penetrations for electrical conduits, telephone wires, water lines, drainpipes, etc. Construct enclosures to be both airtight and watertight except for those openings designed to provide entry and/or air flow control.
- D. Size: Construct enclosure with sufficient volume to encompass all the working surfaces yet allow unencumbered movement by the worker(s), provide unrestricted air flow past the worker(s), and ensure walking surfaces can be kept free of tripping hazards.



- E. Shape: The enclosure may be any shape that optimizes the flow of ventilation air past the worker(s).
- F. Structural Integrity: The walls, ceilings and floors must be supported in such a manner that portions of the enclosure will not fall during normal use.
- G. Barrier Supports: Provide frames as necessary to support all unsupported spans of sheeting.
- H. Openings: It is not necessary that the structure be airtight; openings may be designed to direct air flow. Such openings are to be located at a distance from active removal operations. They are to be designed to draw air into the enclosure under all anticipated circumstances. If negative pressure is lost, they are to be fitted with either HEPA filters to trap dust or automatic trap doors that prevent dust from escaping the enclosure. Openings for exits are to be controlled by an air lock or a vestibule.
- I. Place all tools, scaffolding, staging, etc. necessary for the work in the area to be isolated prior to completion of Work Area isolation.
- J. Areas within an Enclosure: Each enclosure consists of a work area, a decontamination area, and waste storage area. The work area where the asbestos removal operations occur are to be separated from both the waste storage area and the decontamination control area by physical curtains, doors, and/or airflow patterns that force any airborne contamination back into the work area.
- K. Removing Mobile Objects: Clean movable objects and remove them from the work area before an enclosure is constructed unless moving the objects creates a hazard. Mobile objects will be assumed to be asbestos contaminated and are to be either cleaned with amended water and a HEPA vacuum and then removed from the area or wrapped and then disposed of as asbestos-contaminated waste.
- L. Disabling HVAC Systems: The power to the heating, ventilation, and air conditioning systems that service the regulated area must be deactivated and locked out. All ducts, grills, access ports, windows and vents must be sealed off with two layers of plastic to prevent entrainment of contaminated air.
- M. Lockout power to Work Area by switching off all breakers serving power or lighting circuits in work area. A lock and tag shall be placed on each breaker used to de-energize circuits and equipment with notation "DANGER circuit being worked on". Lock panel and have all keys under control of authorized person who has applied the locks.
- N. Lockout power to circuits running through work areas wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breakers with notation "DANGER circuit being worked on". Lock panels and all keys under control of authorized person who applied locks. If circuits cannot be shut down for any reason, label at intervals 4 feet (1.22 m) on center with signs reading, "DANGER live electric circuit. Electrocution hazard." Label circuits in hidden locations but which may be affected by the work in a similar manner.
- O. Inspection Windows: Install inspection windows in locations as directed by the Owner's Representative. Each inspection window is to have a 24-inch X 24-inch viewing area fabricated from 1/4-inch acrylic or polycarbonate sheet. Install window with top at 6 feet-6 inches (1.98 m) above floor height in a manner that provides unobstructed vision from outside to inside of the Work Area. Protect window from damage from scratching, dirt or any coatings used during the work. Enough windows are to be installed to provide observation of all portions of the Work Area that can be made visible from adjacent areas. Inspection windows that open into uncontrolled



areas are to be covered with a removable plywood hatch secured by lock and key. Provide keys to Owner's Representative for all such locks.

3.3 EMERGENCY EXITS:

- A. Provide emergency exits and emergency lighting as set forth below:
1. Emergency Exits: At each existing exit door from the Work Area provide the following means for emergency exiting:
 2. Arrange the exit door so that it is secure from outside the Work area but permits exiting from the Work Area.
 3. Mark outline of door on Primary and Critical Barriers with luminescent paint at least 1 inch wide. Hang a razor knife on a string beside the outline. Arrange Critical and Primary barriers so that they can be easily cut with one pass of razor knife. Paint words "EMERGENCY EXIT" inside outline with luminescent paint in letters at least one foot high and 2 inches wide.
 4. Provide lighted EXIT signs at each exit.

3.4 CONTROL ACCESS:

- A. Isolate the Work Area to prevent entry by building occupants into Work Area or surrounding controlled areas. Accomplish isolation by the following:
1. Submit to the Owner's Representative a list of doors and other openings that must be secured to isolate the Work Area. Include on list notation if door or opening is in an indicated exit route.
 2. After receiving written authorization from the Owner's Representative, lock all doors into the Work Area, or, if doors cannot be locked, chain shut. Notify the local fire department of the list of doors/or other openings which must be chained or otherwise secured shut. Cover any signs that direct emergency exiting, either outside or inside of the Work Area, to locked doors. Do not obstruct doors required for emergency exits from Work Area or from building.
 3. After receiving written authorization from the Owner's Representative, construct partitions or closures across any opening into the Work Area. Partitions are to be a minimum of 8 feet high.
 4. Fabricate partitions from 2-inch X 4-inch wood studs with ½ inch plywood on both faces. Brace at intervals of 4 feet on center.
 5. Replace passage sets on doors required for exiting from Work Area with temporary locksets for duration of the project. Use entry type locksets that are key lockable from one side and always operable from inside. Install locksets with key side in stair tower and escape side on the Work Area side. Provide one key to Owner and maintain one key in clean room of decontamination unit. After meeting Contractor release criteria set forth in Section 01711 Project Decontamination, reinstall original passage sets and adjust for proper operation.



- B. Locked Access: Arrange Work Area so that the only access into Work Area is through lockable doors to personnel and equipment decontamination units.
1. Install temporary doors with entrance type locksets that are key lockable from the outside and always unlocked and operable from the inside. Do not use deadbolts or padlocks.
 2. Provide one key for each door to the Owner, and Owner's Representative and maintain one key in clean room of decontamination unit (3 total).
- C. Demarcation. Demarcate the regulated area in any manner minimizes the number of persons within the area and protects persons outside the area from exposure to airborne concentrations of asbestos. Where critical barriers or negative pressure enclosures are used, they may demarcate the regulated area.
- D. Access. Limit access to regulated areas to authorized persons as defined by OSHA, and to the Owner, Owner's Representative, Project Administrator or a representative authorized by one of these entities.
- E. Provide Warning Signs at each locked door leading to Work Area reading as follows:
1. Print text in both English and Spanish

Legend

Notation

KEEP OUT	3-inch (77 mm) Sans Serif Gothic or Block
CONSTRUCTION	1 inch (25.4 mm) Sans Serif Gothic or Block
WORK AREA	1 inch (25.4 mm) Sans Serif Gothic or Block
PROTECTIVE CLOTHING REQUIRED	14 Point Gothic
BEYOND THIS POINT	

2. Immediately inside door and outside critical barriers post an approximately 20 inches by 14 inches (508 mm X 356 mm) manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

3. Provide spacing between respective lines at least equal to the height of the respective upper line.



3.5 ALTERNATE METHODS OF ENCLOSURE:

- C. Alternate methods of containing the Work Area may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without prior written approval of the Owner's Representative.

3.6 RESPIRATORY AND WORKER PROTECTION:

- A. Before proceeding beyond this point in providing Temporary Enclosures:
 - 1. Provide Worker Protection per Section 01560
 - 2. Provide Respiratory Protection per Section 01562
 - 3. Provide Personnel Decontamination Unit per Section 01563

3.7 CRITICAL BARRIERS:

- A. Separate the Work Area from other portions of the building and the outside by closing all openings with sheet plastic barriers at least 6 mil in thickness, or by sealing cracks leading out of the Work Area with duct tape.
- B. Individually seal all ventilation openings (supply and exhaust), lighting fixtures, clocks, doorways, windows, convectors and speakers, and other openings into the Work Area with duct tape alone or with polyethylene sheeting at least 6 mil in thickness, taped securely in place with duct tape. Maintain the seal until all work including Project Decontamination is completed. Take care of sealing of lighting fixtures to avoid melting or burning of sheeting.
- C. Provide Sheet Plastic barriers at least 6 mil (0.15 mm) in thickness as required to seal openings completely from the Work Area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.
- D. Mechanically Support plastic sheet independently of duct tape or spray cement seals so that seals do not support the weight of the plastic. The following are acceptable methods of supporting sheet plastic barriers. Alternative support methods may be used if approved in writing by the Owner's Representative.

3.8 PREPARE AREA:

- A. Scaffolding: If fixed scaffolding is to be used to provide access HEPA vacuum and wet clean area prior to scaffolding installation.
- B. Remove all electrical and mechanical items, such as lighting fixtures, clocks, diffusers, registers, escutcheon plates, etc. which cover any part of the surface to be worked on with the work.
- C. Remove all general construction items such as cabinets, casework, door and window trim, moldings, ceilings, trim, etc., which cover the surface of the work as required to prevent interference with the work. Clean, decontaminate and reinstall all such materials, upon completion of all removal work with materials, finishes, and workmanship to match existing installations before start of work.
- D. Clean all contaminated furniture, equipment, and or supplies with a HEPA filtered vacuum cleaner or by wet cleaning, as specified in Section 01712 Cleaning and Decontamination Procedures, prior



to being moved or covered. All equipment, furniture, etc. is to be deemed contaminated unless specifically declared as uncontaminated in the drawings or in writing by the Owner's Representative.

- E. Clean All Surfaces in Work Area with a HEPA filtered vacuum or by wet wiping prior to the installation of primary barrier.
- F. Cleaning and Sealing Surfaces: After cleaning with water and a HEPA vacuum, surfaces of stationary objects should be covered with two layers of plastic sheeting. The sheeting should be secured with duct tape or an equivalent method to provide a tight seal around the object.

3.9 PRIMARY BARRIER

- A. Protect building and other surfaces in the Work Area from damage from water and high humidity or from contamination from asbestos-containing debris, slurry or high airborne fiber levels by covering with a primary barrier as described below.
 - 1. Sheet Plastic: Protect surfaces in the Work Area with two (2) layers of plastic sheeting on floor and walls. Perform work in the following sequence.
 - a. All seams in the sheeting should overlap, be staggered and not be located at corners or wall-to-floor joints.
 - b. Cover Floor of Work Area with 2 individual layers of clear polyethylene sheeting, each at least 5 mil in thickness, turned up walls at least 12 inches. Form a sharp right-angle bend at junction of floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Both spray-glue and duct tape all seam in floor covering. Locate seams in top layer six feet from, or at right angles to, seams in bottom layer. Install sheeting so that the top layer can be removed independently of bottom layer.
 - c. Cover Carpeting with three (3) layers of polyethylene sheeting at least 6 mil in thickness. Place corrugated cardboard sheets between the top and middle layers of polyethylene.
 - d. Cover Sheet Plastic in areas where scaffolding is to be used with a single layer of ½ inch CDX plywood or 1/4-inch tempered hardboard. Wrap edges and corners of each sheet with duct tape. At completion of abatement work wrap plywood or hardboard with 2 layers of 6 mil polyethylene and move to next Work Area or dispose of as asbestos-contaminated waste material in accordance with specification.
 - e. Stairs and Ramps: Do not cover stairs or ramps with unsecured sheet plastic. Where stairs or ramps are covered with plastic, provide 3/4-inch exterior grade plywood treads securely held in place, over plastic. Do not cover rungs or rails with any type of protective materials.
 - f. Repair of Damaged Polyethylene Sheeting: Remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when the area is completely dry.



3.10 ISOLATION AREA:

- A. Maintain isolation areas between the Work Area and adjacent building area:

3.11 STOP WORK:

- A. If the Critical or Primary barrier falls or is breached in any manner stop asbestos removal work immediately and comply with "Stop Work" requirements of Section 01013 "Summary of Work - Asbestos Abatement". Do not start work until authorized in writing by the Owner's Representative.

3.12 EXTENSION OF WORK AREA:

- A. Extension of Work Area: If the Critical Barrier is breached in any manner that could allow the passage of asbestos debris or airborne fibers, then add affected area to the Work Area, enclose it as required by this Section of the specification and decontaminate it as described in Section 01711 Project Decontamination.

3.13 SECONDARY BARRIER:

- A. Secondary layer of plastic as a drop cloth to protect the primary layer from debris generated by the asbestos abatement work is specified in the appropriate work sections.

END OF SECTION - 01526



PART 2 - EQUIPMENT

2.1 PRODUCTS

A. HEPA Filter Vacuum Cleaners:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:

Nilfisk of America, Inc.
225 Great Valley Parkway
Malvern, PA 19355
(800) 645-3475

HEPA filtered
Vacuums

Minuteman International
111 South Route 53
Addison, IL 60101
(708) 627-6900

Minuteman
HEPA Vacuums

Pullman-Holt (White) Corp.
PO Box 16647
Tampa, FL 33617
(813) 645-3475

HEPA Filtered
Vacuums

B. Plastic Sheet:

1. Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil (0.15 mm) thick, clear, frosted, or black as indicated.

PART 3 - EXECUTION

3.1 SECURING WORK AREA:

1. Secure work area from access by occupants, staff or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area, by scheduling work for periods of time that the building is unoccupied, or by constructing temporary wood stud and plywood barriers.

3.2 DEMARCATION OF REGULATED AREA:

- A. Demarcation. Demarcate the Regulated Area with a sheet plastic drop cloth, signs and barrier tape. Configure the regulated area in a manner that minimizes the number of persons within the area and protects people outside the area from exposure to airborne concentrations of asbestos.



1. Drop Cloth: Cover floor in vicinity of Work Area and six (6) feet (1.82 meters) above, with 6 mil (0.15 mm) polyethylene drop sheet. Where work is adjacent to the wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the Regulated Area.
2. Signs: Post warning signs that carry the following legends in both English and Spanish:
 - a. First Sign: Provide warning signs at each locked door leading to the controlled area reading as follows:

Legend
KEEP OUT

Notation
3-inch (76.2 mm) Block

- b. Second Sign: Immediately inside the locked door and outside the controlled area post an approximately 20 inches by 14 inch (508 mm x 356 mm) manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

Barrier Tape: Where the controlled area is in a large area such as on part of a boiler room or open office area, delineate area with 3 inch (76.2 mm) wide polyethylene ribbon with the printed warning, "CAUTION ASBESTOS REMOVAL". Install this ribbon at between 3 and 4 feet (0.91 and 1.22 meters) above the floor.

3.3 SCHEDULING:

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



3.4 GENERAL PROCEDURES:

- A. The following precautions and procedures apply to the work of this section. Workers must exercise caution to avoid release of asbestos fibers into the air:
1. Setup and management of the controlled area is to be under the supervision of a OSHA Competent Person as described in Section 01043 Project Coordination - Asbestos Abatement.
 2. Before starting work comply with the requirement for worker protection in section 01561, and respiratory protection in section 01562.
 3. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Regulated Area.
 4. Shut down any air handling equipment bringing air into or out of the Regulated Area.
 5. Clean any existing dust or debris from the floor and walls, and other surface in the immediate location of the work prior to commencing work by damp mopping or by use of a High Efficiency Particulate Air (HEPA) filtered vacuum.
 6. Cover floor in vicinity of Work Area and six (6) feet (1.82 meters) beyond, with 6 mil (0.15 mm) polyethylene drop sheet. Where work is adjacent to wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the Regulated Area.
 7. Seal all openings, supply and exhaust vents, and convectors within ten (10) feet (3.05 meters) of the Work Area with 6 mil (0.15 mm) polyethylene sheeting secured and completely sealed with duct tape.
 8. Perform the work per the appropriate specification section while on plastic drop sheet.
 9. Immediately remove any asbestos-containing debris which collects on the drop sheet either by using a HEPA vacuum or by spraying with amended water or removal encapsulant, collecting with wet paper towels, placing in a disposal bag while still wet, and cleaning surface of plastic sheet with wet paper towels.
 10. Complete the following at completion of work in an area before stepping off drop sheet
 - a. While standing on plastic sheet thoroughly HEPA vacuum ladder and any tools used and pass to worker standing off sheet.
 - b. Worker standing off the sheet HEPA vacuum thoroughly the worker standing on the sheet.
 - c. Work on the sheet thoroughly HEPA vacuum all surfaces of the plastic sheet, bags, and any other items on the sheet including the worker's feet.
 11. If moving to the next Work Area in the same secured area: Worker on the drop sheet is to don clean foot covers, placing each foot, in turn, off the sheet as the foot cover is put on. Remove clean foot covers at the next Work Area while standing on the sheet. Dispose of the used foot



covers along with the plastic sheet at completion of work in that area. Do not reuse foot covers to move off the sheet.

12. If the workday is complete or if next Work Area is in another secured area: all workers remove paper suits turning them inside out while doing so. The person on the sheet steps with each foot off the sheet as the foot covers are removed.
13. Fold the sheet and all its contents toward the center.
14. Place the sheet in a properly labeled disposal bag.
15. Neck down the bag and collapse it with the HEPA vacuum.
16. Twist the bag shut, bend over and seal with duct tape by wrapping around bag neck at least 3 times.
17. Clean all surfaces of the Work Area by using a HEPA filter vacuum until no visible residue remains.

- B. Completion of work requires all workers to complete wet decontamination procedures in accordance with Section 01560 Worker Protection - Asbestos Abatement.

END OF SECTION - 01527



SECTION 01528 - ENTRY INTO CONTROLLED AREAS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division - 1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. The provisions of this section apply when entry is required into an area where such entry could cause contamination of portions of the building and/or where respiratory or other worker protection measures are required.
- B. Unless authorized in writing by the Designer, the provisions of this section apply to only the following situations:
 - 1. Entry into the space above a suspended ceiling where there is exposed friable asbestos-containing fireproofing, visible asbestos-containing debris, or other friable asbestos-containing surfacing material when the ceiling tiles in an area no greater than 6 feet by 12 feet (1.83 x 3.66 meters) area to be removed.
 - 2. Entry through sealed access (access door, hatchway, locked door) into an area with friable asbestos-containing surfacing materials or visible debris.
- C. Worker Protection: Use procedures of this section only where a negative exposure assessment has been made, or those procedures. Historic airborne fiber data demonstrate that personal airborne fiber counts in the breathing zone of those performing the work can be continuously maintained at less than 0.1 fibers per cubic centimeter can be used as a part of this assessment.
- D. Area Protection: Use procedures of this section only where historic airborne fiber data demonstrate that area samples in the work area can be continuously maintained at less than 0.02 fibers per cubic centimeter.

1.3 SUBMITTALS:

- A. Before the Start of Work: Submit the following to the Designer for review. No work begin until these submittals are returned with Designer's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.
 - 1. Historic Airborne Fiber Data: Submit airborne asbestos fiber count data from an independent air monitoring firm to demonstrate:
 - a. The ability to perform work of this section while maintaining an airborne fiber count below 0.1 fibers per cubic centimeter in the breathing zone of the individual performing the work.



- b. The ability to perform work of this section while maintaining an airborne fiber count below 0.01 fibers per cubic centimeter in the work area.

2. Include the following data for each procedure required by the work:

- a. Date of measurements
- b. Operations monitored
- c. Sampling and analytical methods used and evidence of their accuracy
- d. Number, duration, and results of samples taken

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 REGULATED AREA:

- A. Prior to beginning work in this area establish a regulated area as described in Section 01527 Regulated Areas.

3.2 ACCESS THROUGH SUSPENDED CEILINGS:

- A. Remove acoustic panels from ceiling suspension system using the following sequence:
 1. Follow worker protection procedures including disposable coveralls and respirators required by Section 01560 and Section 01562.
 2. Follow local area protection procedures of Section 01528. Spread layer of 6 mil (0.15 mm) polyethylene sheet on floor 6 feet (1.83 meters) further in extent than the size of the ceiling opening to be made.
 3. HEPA vacuums around edges of all panels to be removed.
 4. While holding the nozzle of HEPA vacuum in vicinity slowly lift one edge of center ceiling panel. Immediately HEPA vacuum space at lifted edge. Lift entire panel straight up and HEPA vacuum all four sides.
 5. Place panel on top of adjacent ceiling.
 6. Place intake duct to HEPA Filtered Fan Unit per Section 01513 in space above ceiling and fasten in place. Operate machine continuously while ceiling is open.
 7. Note that the operation of the HEPA vacuum is intended to clean the air in the location of the work. As such the nozzle should be kept above the ceiling as much as possible and the canister on the floor.



8. Climb to a position which permits access to the top of the ceiling adjacent to the removed panel.
9. Working in the space above the ceiling, HEPA vacuum both sides of the ceiling panel first removed and hand it down into a 6 mil (0.15 mm) polyethylene bag for storage.
10. Remove loose material hanging from the friable asbestos-containing material with the suction from the HEPA vacuum.
11. Pass wand of operating HEPA vacuum through air between asbestos-containing material and top of ceiling.
12. HEPA vacuums the tops of all ceiling panels which are in reach.
13. Carefully HEPA vacuums the crack between the suspension system and ceiling panels from the top for all ceiling panels within reach.
14. Remove ceiling panels as required while constantly HEPA vacuuming all four edges of panel and suspension system.
15. Working in space above ceiling HEPA vacuum both sides on each panel removed and hand each down into a 6 mil (0.15 mm) polyethylene bag which is labeled as set forth in Section 02084.
16. Maintain HEPA vacuum in operation with nozzle above ceiling and exhaust at floor for the entire time that the ceiling is open and work is being done above the ceiling.
17. When above-ceiling work is complete replace ceiling panels.
18. HEPA vacuum workers' head, arm, and shoulders before climbing down from ceiling.
19. HEPA vacuum ladder while climbing down.
20. While standing on plastic sheet thoroughly HEPA vacuum ladder and pass it to person standing off sheet.

3.3 ENTRY INTO CONTROLLED AREAS:

- A. Use the same procedure as above except that ceiling tiles do not need to be removed.
- B. If access is through a wall hatch or door, duct tape floor sheet to wall or threshold.
- C. If access is into large areas such as crawl tunnel, comply with worker protection requirements but use HEPA vacuum only for work procedures in the area.

3.4 PERSONNEL DECONTAMINATION:

- A. At the end of all work change to a clean disposable coverall and leaving respirator in place proceed to a remote shower and decontaminate as required by Section 01560 Worker Protection - Asbestos Abatement.
- B. Complete dry decontamination procedures set forth in Section 01561 "Worker Protection - Repair & Maintenance."

END OF SECTION 01528



SECTION 01529 - MINI ENCLOSURES AND GLOVEBAGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF THE WORK:

- A. Work of this section consists of preparing a Regulated Area for work for which there is no negative exposure assessment or that involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of thermal system insulation or surfacing material. This is Class II OSHA work and is limited in size to operations that generate small amounts of ACM, i.e., no more than can be contained in one standard (60 inch x 60 inch) glove or waste bag filled no more than 1/3 to 1/2 full.

1.3 SUBMITTALS:

- A. Before Start of Work submit the following to the Designer for review. Do not begin work until these submittals are returned with the Designer's action stamp indicating that the submittal is returned for unrestricted use.
 - 1. Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.
 - 2. Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturers of removal encapsulant intended for use. Include data substantiating that material complies with requirements.
 - 3. NESHAP Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet ACM to which it is applied as required by the National Emission Standard for Hazardous Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M).
 - 4. Material Safety Data Sheet: Submit Material Safety Data Sheet, or equivalent, in accordance with the OSHA Hazard Communications Standard (29 CFR 1910.1200) for each surfactant and encapsulating material proposed for used. Submit in the same manner as product data. Submittal is for information purposes only. Submittals will not be reviewed by the Designer.
 - 5. Spray Cement: Submit following:
 - a. Product description including major components and solvents
 - b. Manufacturer's installation instructions. Indicate portions applicable to the project
 - c. Sheet Plastic: For fire retardant plastic submit test reports on NFPA 701 test.



- d. Glove bags: Submit product data.
 - e. HEPA Vacuums: Submit product data
 - f. Signs: Submit samples of signs to be used.
 - g. Mini-enclosure: Provide shop drawing of mini-enclosure arrangement to use.
- B. Before Start of Work submit the following to the Designer for review. Do not begin work until these submittals are returned with the Designer's action stamp indicating that the submittal has been "Received - Not Reviewed."
- 1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for the following:
 - a. Surfactants.
 - b. Spray Cement.
 - c. Encapsulants.

PART 2 - PRODUCTS

2.1 GLOVE BAGS:

- A. Glovebags: Provide minimum 6 mil (0.15 mm) thick polyethylene, polyvinyl chloride or equivalent plastic sack, with a seamless bottom, and two sealed inward projecting long sleeved gloves or mittens, preprinted with same warning notice as a disposal bag, equipped with a pouch for storage of tools, with designated location for wand or HEPA vacuum wand. Glove bag is to be not more than 60 inches by 60 inches in size.

2.2 SHEET PLASTIC:

- A. Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil (0.15 mm) thick, frosted or black as indicated.

2.3 MISCELLANEOUS MATERIALS:

- A. Duct Tape: Provide duct tape in 2 inch or 3-inch (51 mm or 76 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
- B. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- C. Wetting Materials: For wetting prior to disturbance of ACM use either amended water or a removal encapsulant:
 - 1. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACM and retardation of fiber release during



disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a solution of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

2. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of ACM. Use a material which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a solution of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
- D. Encapsulants are specified in Section 09805.
- E. Garden Sprayer: Provide a hand pump type pressure-can garden sprayer fabricated out of either metal or plastic, equipped with a metal wand at the end of a hose that can deliver a stream or spray of liquid under pressure.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Before Start of Work: Complete the following before starting work of this section:

1. 01527 Regulated Areas

3.2 WORKER PROTECTION:

- A. Before beginning work with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be always used.

3.3 GLOVE BAGS:

- A. Complete requirements of the following:

1. 01562 Respiratory Protection
2. 01561 Worker Protection - Repair and Maintenance

- B. Glove bag: Remove ACM inside a glove bag according to the following procedure:

1. Use at least two people to perform glove bag removals operations.
2. Use each glovebag only once
3. Do not move the glove bag once it has been mounted in place.
4. Do not use glovebag on surface whose temperature exceeds 150°F (65.6°C).
5. Check materials adjacent to locations where glovebag will be installed. Wrap damaged (broken lagging, hanging, etc.), loose or friable material in 2 layers of 6 mil (0.15 mm) plastic and "candy-stripe" with duct tape, or render material intact by some other method. Place one layer of duct tape around an undamaged pipe at each location where the glove bag will be attached.



6. Slit top of the glove bag open (if necessary) and cut down the sides to accommodate the size of the pipe (about two inches longer than the pipe diameter) and allow additional so that the top of the glove bag will be clear of the pipe after installation.
7. Place necessary tools into pouch located inside glove bag. This will usually include bone saws, utility knife, rags, scrub brush, wire cutters, tin snips and pre-wetted cloth.
8. Place a strip of duct tape along both edges of the open top slit of glove bag for reinforcement.
9. Place the glove bag around section of pipe to be worked on and staple top together through reinforcing duct tape. Staple down sides approximately 6 inches so that top of the glove bag is clear of pipe. Seal top and sides with duct tape. Next, duct tape the ends of glove bag to pipe itself, where previously covered with plastic or duct tape.
10. Install glovebag so that it completely covers the circumference of pipe or other structures where the work is to be done.
11. Use a smoke tube and aspirator bulb to test seal. Place tube into water sleeve (two-inch opening to glove bag) squeezing bulb and filling bag with visible smoke. Remove the smoke tube and twist the water sleeve closed. While holding the water sleeve tightly, gently squeeze the glove bag and look for smoke leaking out, (especially at the top and ends of the glove bag). If leaks are found, tape closed using duct tape and re-test.
12. Insert wand from garden sprayer through water sleeve. Duct tape water sleeve tightly around the wand to prevent leakage.
13. Thoroughly wet material to be worked on with amended water or removal encapsulant and allow to soak in. Wet adequately to penetrate and soak material through to substrate.
14. One person places their hands into the long-sleeved gloves while the second person directs the garden sprayer at work.
15. Use bone saw, if required, to cut insulation at each end of the section to be removed. A bone saw is a serrated heavy gauge wire with ring-type handles at each end. Throughout this process, spray amended water or removal encapsulant on the cutting area to keep dust to a minimum.
16. Remove insulation using putty knives or other tools. Place pieces in the bottom of bag without dropping.
17. Rinse all the tools with water inside the bag and place back into pouch.
18. Using scrub brushes, rags and water, scrub and wipe down the exposed pipe.
19. Thoroughly wash and wipe down the interior of glove bag to a point below the location where the bag will be twisted and taped to seal waste in bottom of bag.
20. Remove water wand from water sleeve and attach the small nozzle from HEPA-filtered vacuum. Turn on the vacuum only briefly to collapse the bag.
21. Remove the vacuum nozzle, twist the water sleeve closed and seal with duct tape.
22. From outside the bag, pull the tool pouch away from the bag. Place duct tape over twisted portion and then cut the tool bag from the glove bag, cutting through the twisted/taped section. Contaminated tools may then be placed directly into the next glove bag without



cleaning. Alternatively, tool pouch with the tools can be placed in a bucket of water, opened underwater, and tools cleaned and dried. Discard rags and scrub brush with asbestos waste.

23. With removed insulation in the bottom of the bag, twist the bag several times and tape it to seal material in the bottom during removal of the glove bag from the pipe.
24. Slip a 6 mil (0.15 mm) disposal bag over the glove bag (still attached to the pipe). Remove tape or cut bag and open the top of the glove bag and fold it down into disposal bag.
25. Clean all surfaces in the Work Area using disposable cloths wetted with water with surfactant or removal encapsulant added. When these surfaces have dried, clean with a HEPA filtered vacuum. Material adhered to the surface with removal encapsulant may require the application of additional removal encapsulant to facilitate cleaning.
26. Seal exposed ends of remaining pipe insulation in accordance with Section 15254.
27. Remove disposable suits and place these into bag with waste.
28. Collapse the bag with a HEPA vacuum twist top of bag, seal with at least 3 wraps of duct tape, bend over and seal again with at least 3 wraps of duct tape.

C. Negative Pressure Glove Bag Systems. Remove ACM inside a negative pressure glove bag system according to the following procedure:

1. Use at least two people to perform glove bag removals operations.
2. Use each glovebag only once.
3. Do not move the glove bag once it has been mounted in place.
4. Do not use glovebag on surface whose temperature exceeds 150°F (65.6°C).
5. Check materials adjacent to location where glovebag will be installed. Wrap damaged (broken lagging, hanging, etc.) loose or friable material in 2 layers of 6 mil (0.15 mm) plastic and "candy-stripe" with duct tape, or render material intact by some other method. Place one layer of duct tape around an undamaged pipe at each location where the glove bag will be attached.
6. Install glovebag so that it completely covers the circumference of pipe or other structure where the work is to be done.
7. Install device used to prevent collapse of bag by negative pressure.
8. Smoke-test Glovebags for leaks and seal any leaks prior to use.
9. Run HEPA vacuum cleaner or other device used to create negative pressure in the bag continuously during the operation.
10. Prior to disposal, collapse glovebag by removing air within it using a HEPA vacuum.
11. Where the system uses attached waste bag, connect waste bag to collection bag using hose or other material which will withstand pressure of ACM waste and water without losing its integrity.
 - a. Use sliding valve or other device to separate waste bag from hose to ensure no exposure when waste bag is disconnected.



12. Where a separate waste bag is used along with a collection bag and waste bag is discarded after one use, the collection bag may be reused if rinsed clean with amended water before reused.

3.4 MINI-ENCLOSURES:

- A. A mini enclosure is a small walking enclosure which accommodates no more than two people. Provide a fabricated or job-made enclosure constructed of 6 mil (0.15 mm) plastic or equivalent. Place the enclosure under negative pressure by means of a HEPA filtered vacuum or similar HEPA filtered ventilation unit.
- B. Provide a remote personnel decontamination unit meeting requirements of Section 01563 "Decontamination Units" for worker decontamination.
- C. Sequence of Work: Before beginning work of this sub-section complete the following:
 1. Isolation of area in accordance with Section 01527 "Regulated Area"
 2. Construction of a personnel decontamination unit in accordance with Section 01563 Decontamination Units.
- D. Work Room: Construct Work Room in the same manner as a Primary Barrier fabricated from 6 mil (0.15 mm) sheet plastic. Arrange so that Primary Barrier provides both a Critical and Primary Barrier. Line walls and floor of the Work Room with a continuous Secondary Barrier.
- E. Change Room: Provide an approximately 5 feet by 3 feet (0.9 m x 0.9 m) Change Room, with additional space as required for storage, attached to each Work Room. Fabricate Change Room from 6 mil (0.15 mm) sheet plastic in the same manner as a Primary Barrier. Locate so that access to Work Area is through Change Room.
- F. Step off Area: Cover floor in front of entry to Change Room with one layer of 6 mil (0.15 mm) sheet plastic. Securely anchor sheet plastic to prevent slipping.
- G. Flapped Door Construction: Provide flapped door as entry to Change Room and entry from Change Room to Work Room. Fabricate each flapped door from overlapping contacting layers of sheet plastic. Fasten each layer on the top and one side. Each flap is to be 3 inches (76 mm) longer than door opening. Reinforce the free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to the entry side from duct tape on inside and outside of door.
- H. Signage: At entry to Change Room post an approximately 20 inches by 14 inch (508 mm x 356 mm) manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend
DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

1. Provide spacing between respective lines at least equal to the height of the respective upper line.
- I. Complete requirements of the following:



1. Section 01560 Worker Protection - Asbestos Abatement
2. Section 01562 Respiratory Protection
3. Section 01513 Temporary Pressure Differential & Air Circulation System: HEPA filtered vacuum cleaner with vacuum in space outside Mini-Enclosure may be used for compliance with this section. Provide a minimum of 8 air changes per hour in the Work Room.
- J. Testing: The mini enclosure shall be inspected for leaks and smoke tested to detect breaches, and breaches sealed.
- K. Entry to Work Room: Require that any time a worker enters the Work Room the following procedure is followed.
 1. Outside of Change Room remove all street clothes and don clean coveralls and respirator. A swimsuit or second disposable suit may be worn beneath outer coveralls.
 2. Enter the Change Room, be sure that entry is completely closed.
 3. Enter the Work Room and be sure that the entry is completely closed.
- L. Work Procedures: Arrange work area within the mini enclosure so that during use air movement is directed away from the worker's breathing zone.
- M. Worker Decontamination: Require that any time a worker leaves the mini-Enclosure the following procedure be followed.
 1. Maintain a bucket of clean potable water in the Work Area. Do not amend a wetting agent.
 2. Remove contaminated suit inside the Work Area. Leave respirator in place.
 3. Wash hands, face and surface of respirator with water and wet paper towels. Use caution to avoid breaking seal between respirator face-piece and face.
 4. Proceed with the respirator in place of the Change Room.
 5. Be sure that entry to the Work Area is completely closed.
 6. In the Change Room don clean a disposable suit leaving the respirator in place.
 7. Exit change room be sure that entry to Change Room is completely closed. Proceed to the next Mini Enclosure, or a remote shower.
 8. At the end of the workday decontaminate fully in accordance with procedures in the appropriate specification section describing Worker Protection.
- N. Material Decontamination: Require that the following procedure be used in removing equipment and bagged debris from the Work Room.
 1. Three workers are required. One in the Work Room, one in the Change Room, and one in the Step off Area.
 2. Equipment and bagged debris are to be removed from the Mini-Enclosure in separate operations.
 3. Worker in the Work Room cleans equipment and bagged debris and hands one piece of equipment or one bag of debris at a time to worker in Change Room.



4. Workers in Change Room wet cleans each piece of equipment or bag and stores them in Change Room. Equipment is sealed completely in 6 mil (0.15 mm) sheet plastic in the Change Room.
 5. When the amount of stored material in the Change Room becomes large enough that the worker cannot clean incoming material without contacting previously cleaned material the door between the Work and Clean Room is closed.
 6. The worker in the Changing Room then passes each item into a new disposal bag held open in the doorway between the Changing Room and Step off Area by the worker on the Step off Area. The Worker on the Step off Area places each bag in a sealed cart for transport to the load out area. No bags are to be stored outside of the Mini-Enclosure.
 7. All bags are to be transported through the building in clean sealed containers that have never been in an asbestos Work Area, Mini-Enclosure or decontamination unit.
- O. Mini-Enclosure Decontamination: At completion of all work decontaminate the Work and Changing Rooms as set forth in Section 01711 Project Decontamination for non-friable materials.

END OF SECTION - 01529



SECTION 01560 - WORKER PROTECTION - ASBESTOS ABATEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. This section describes the equipment and procedures required for protecting workers against asbestos contamination and other workplace hazards except for respiratory protection.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Respiratory Protection: is specified in Section 01562.

1.4 WORKER TRAINING:

- A. AHERA Accreditation: All workers are to be accredited as Abatement Workers as required by the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).
- B. State and Local License: All workers are to be trained, certified and accredited as required by the State of Delaware.
- C. Training - Class I: Train in accordance with 29 CFR 1926.1101. Provide training for all workers who will perform Class I operations that is the equivalent in curriculum, training method and length to the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

1.5 MEDICAL SURVEILLANCE:

- A. Provide a medical surveillance program for all employees who are:
 - 1. Engaged in Class I, II and III work for a combined total of 30 or more days per year or,
 - 2. Are exposed at or above the permissible exposure limit or excursion limit or,
 - 3. Before an employee can be assigned to work requiring use of a respirator.
- B. Provide a medical surveillance program and physician's opinion before a respirator is assigned as required by 29 CFR 1910.134 and 29 CFR 1926.103(e) (10).
- C. Provide medical examination that as a minimum meets OSHA requirements as set forth in 29 CFR 1926.1101. In addition, require that the physician provide an evaluation of the individual's ability to work in environments capable of producing heat stress in the worker.



1.6 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.
1. AHERA Accreditation: Submit copies of certificates from an EPA-approved AHERA Abatement Workers course for each worker as evidence that each asbestos Abatement Worker is accredited as required by the EPA Interim Final Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).
 2. State and Local License: Submit evidence that all workers have been trained, certified and accredited as required by the State of Delaware.
 3. Certificate Worker Acknowledgment: Submit an original signed copy of the Certificate of Worker's Acknowledgment found at the end of this section for each worker who is to be at the job site or enter the Work Area.
 4. Report from Medical Examination: conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:
 - a. Name and Social Security Number
 - b. The physician's written opinion as to whether the employee has any detected medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos.
 - c. Any recommended limitations on the employee or on the use of personal protective equipment such as respirators; and
 - d. A statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure.
 - e. A statement that the employee has been informed by the physician of the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure (29 CFR 1926.1101(m)).
 - f. A legible typed version of the physician's name, the physician's signature, and date of examination.
 - g. A statement that worker can wear and use the type respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker.
 5. Notarized Certifications: Submit certification signed by an officer of the abatement contracting firm and notarized that exposure measurements, medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.



PART 2 EQUIPMENT

2.1 PROTECTIVE CLOTHING:

- A. General. Provide and require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos that exceed the TWA and/or excursion limit prescribed by 29 CFR 1926.1101 or for which a required negative exposure assessment is not produced, and for an employee performing Class I operations which involve the removal of over 25 linear or 10 square feet (7.5 linear meters or 3 square meters) of TSI or surfacing ACM or PACM.
- B. Coveralls: Provide disposable full-body coveralls and disposable head covers and require that they be worn by all workers in the Work Area. Provide enough for all the required changes, for all workers in the Work Area.
- C. Hard Hats: Provide head protectives (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner's Representative, Project Administrator, and Owner. Label hats with the same warning labels as used on disposal bags. Require hard hats to be always worn that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean, decontaminate and bag hats before removing them from the Work Area at the end of the work.
- D. Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Do not remove gloves from the Work Area and dispose of as asbestos-contaminated waste at the end of the work.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT

- A. Disposable coveralls, head cover, and footwear covers shall be provided by the Contractor for the Owner, Owner's Representative, Project Administrator, and other authorized representatives who may inspect the job site. Provide six (6) complete coveralls per day.

PART 3 EXECUTION

3.1 GENERAL

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of fiber count in the Work Area.
- B. Each time the Work Area is entered, remove all street clothes in the Changing Room of the Personnel Decontamination Unit and put on new disposable coverall, new head cover, and a clean respirator. Proceed through shower room to equipment room and put on work boots.

3.2 DECONTAMINATION PROCEDURES:

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



1. Type C Supplied Air or Powered Air-Purifying Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area:
 - a. When exiting the area, remove disposable coveralls, disposable head covers, and disposable footwear covers or boots in the equipment room.
 - b. Still wearing respirators, proceed to showers. Showering is mandatory. Care must be taken to follow reasonable procedures in removing the respirator to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 - c. Thoroughly wet body including hair and face. If using a Powered Air-Purifying Respirator (PAPR) hold blower unit above head to keep canisters dry.
 - d. With respirator still in place thoroughly wash hood, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.
 - e. Take a deep breath, hold it and/or exhale slowly, completely wet hair, face, and respirator. While still holding breath, remove respirator and hold it away from face before starting to breathe.
 - f. Carefully wash the face pieces of respirator inside and out.
2. If using PAPR: shut down in the following sequence, the first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from discharging and contaminating the outside of the unit). Thoroughly wash the blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.
 - a. Shower completely with soap and water.
 - b. Rinse thoroughly.
 - c. Rinse shower room walls and floor prior to exit.
 - d. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.
3. Remote Shower: The procedures above are to be used if the decontamination facility is used as a remote shower. If a worker cannot gain direct access to the Equipment Room requires that he enter the Decontamination Unit and proceed directly through Shower Room to Equipment Room. Decontamination procedure is then completed as required above.
- C. Within Work Area:
 1. Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area. To eat, chew, drink or smoke, workers shall follow the procedure described above, then dress in street clothes before entering the non-Work Areas of the building.



3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

- A. Following this section is a Certificate of Worker Training. After each worker has been included in the Contractor's Respiratory Protection Program, completed the training program and medical examination, secure a fully executed copy of this form.

END OF SECTION - 01560

NOT FOR BIDDING PURPOSES



CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME _____ DATE _____

PROJECT ADDRESS _____

CONTRACTOR'S NAME _____

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PUBLIC.

Your employer's contract with the Owner for the above project requires that: you be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. This training must have been the equivalent in curriculum, training method and length to the EPA Model Accreditation Plan (MAP) asbestos abatement worker training (40 CFR Part 763, Subpart E, Appendix C).

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, pulmonary function tests and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer.

Signature _____ Social Security No _____

Printed Name _____ Witness _____



SECTION 01562 - RESPIRATORY PROTECTION

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Instruct and train each worker involved in asbestos abatement or maintenance and repair of friable asbestos-containing materials (ACM) in proper respiratory use and require that each worker always wears a respirator, properly fitted on the face in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the workplace or as required for other toxic or oxygen-deficient situations encountered.

1.3 DEFINITIONS:

- A. "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. These types of respirators will not be utilized for this project.
- B. "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.
- C. "Respirator": A device designed to protect the wearer from the inhalation of harmful atmospheres.

1.4 STANDARDS:

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the latest edition of the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in the requirements set forth in these regulations and standards, meet the more stringent requirement.
 - 1. OSHA - U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards Section 29 CFR 1910.1001, Section 1910.134, and Section 29 CFR 1926.1101.



2. CGA - Compressed Gas Association, Inc., New York, Pamphlet G-7, "Compressed Air for Human Respiration", and Specification G-7.1 "Commodity Specification for Air".
3. CSA - Canadian Standard Association, Rexdal, Ontario, Standard Z180.1, "Compressed Breathing Air".
4. ANSI - American National Standard Practices for Respiratory Protection, ANSI Z88.2.
5. NIOSH - National Institute for Occupational Safety and Health
 - NIOSH Respirator Decision Logic (May 1987) DHHS/NIOSH Publication No. 87-108.
 - NIOSH/EPA, "A Guide to Respiratory Protection for the Asbestos Abatement Industry" EPA-560-OPHS-86-001 (September 1986).
 - 42 CFR 84, NIOSH Standard for Certification of Non-Powered Air Purifying Respirator filters.
 - 30 CFR 11, NIOSH - Certification of Respirators
6. MSHA - Mine Safety and Health Administration

1.5 SUBMITTALS:

- A. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.
 1. Product Data: Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.
 2. System Diagram: When a supplied air respiratory system is required by the work, submit drawing showing assembly of components into a complete supplied air respiratory system. Include diagram showing location of compressor, filter banks, backup air supply tanks, hose line connections in Work Area(s), routing of air lines to Work Area(s) from compressor.
 3. Operating Instruction: Submit complete operating and maintenance instructions for all components and systems. Submittal is to be in bound manual form suitable for field use.
 4. Respiratory Protection Program: Submit Contractor's written respiratory protection program manual as required by OSHA 1926.1101.
 5. Resume information: Submit resume and information on training for individual monitoring the operation of supplied air respiratory systems. Submit training certifications where applicable.



1.6 AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS:

- A. Provide air used for breathing in supplied air respiratory systems that meet or exceeds standards set for C.G.A. type 1 (Gaseous Air) Grade D:

1.7 ALLOWABLE CONTAMINANTS:

- A. Supply air that has an asbestos concentration no greater than outside ambient conditions.
- B. Supply air that meets the level of contaminants allowed according to the air quality standard specified.
- C. The following table sets forth the quantity of any given contaminant allowed according to the referenced standards:

CONTAMINANT	Grade D	CGA Type 1 (Gaseous Air) Grade E	Grade H	CSA Z180.1
Carbon Monoxide, PPM/v	20	10	5	5
Carbon Dioxide, PPM/v	1000	500	500	500
Condensed Hydrocarbons, mg./cu. meter	5			1
Gaseous Hydrocarbons - as methane, PPM/v			10	25
Water Vapor PPM/v dew point	(1) -50F	(1) -50F	(1) -50F	27 -63F
Objectionable Odors	None	None	None	None
Nitrogen Dioxide, PPM/v	-	-	0.5	0.2
Nitrous Oxide, PPM/v	-	-	-	5
Sulfur Dioxide, PPM/v	-	-	0.5	-
Halogenated solvents, PPM/v	-	-	1	-
Other gaseous contaminant	-	-	-	(2)
Inorganic particulates mg./cu. meter	-	-	-	1

(1) Indicates that the standard shows no limiting characteristics

(1) The CGA standards do not indicate a specific moisture limit when the ambient temperature is above freezing. However, since a moisture content no greater than a -50 Degrees Fahrenheit (-45.56 Degrees Celsius) dew point (66 PPM/v) is necessary for carbon monoxide elimination, the



CO limits could not be met unless the air were dried to a -50 Degrees Fahrenheit (-45.56 Degrees Celsius) dew point or better.

- (2) Maximum allowable content of trichlorotrifluoroethane, dichlorodifluoromethane, and chlorodifluoromethane is 2 PPM/v for each. Unlisted contaminants shall not exceed one-tenth of the Threshold Limit Values (TLV's) for Chemical Substances in Workroom air adopted by the American Conference of Governmental Industrial Hygienists (ACGIH).

1.8 DELIVERY:

- A. Deliver replacement parts, etc., not otherwise labeled by NIOSH or MSHA on job site in manufacturer's containers.

PART 2 EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS

- A. Respirator Bodies: Provide full-faced type respirators. Equip full-faced respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit (0 degrees Celsius).
- B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with 42 CFR Part 84 and ANSI Z228.2. Also, additional cartridge sections 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/MSHA Certification.
- C. Non-permitted respirators. Do not use single use, disposable, or Negative Pressure Respirators. Use of PAFR Respirators is permitted with written approval by the Owner's Representative.

2.2 SUPPLIED AIR RESPIRATOR SYSTEMS:

- A. Provide equipment capable of producing air of the quality and volume required by the above reference standards applied to the job site conditions and crew size. Comply with provisions of this specification if more stringent than the governing standard.
- B. Facepiece and Hose: Provide full facepiece and hose by same manufacturer that has been certified by NIOSH/MSHA as an approved Type "C" respirator assembly operating in pressure demand mode with a positive pressure facepiece.
- C. Auxiliary backup system: In atmospheres which contain sufficient oxygen (greater than or equal to 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator equipped with an emergency back up HEPA filter.



- D. Escape air supply: In atmospheres which are oxygen deficient (less than 19.5 percent oxygen) provide a pressure-demand full facepiece supplied air respirator incorporating an auxiliary self-contained breathing apparatus (SCBA) which automatically maintains an uninterrupted air supply in pressure demand mode with a positive pressure face piece.
- E. Backup air supply: Provide a reservoir of compressed air located outside the Work Area which will automatically maintain a continuous uninterruptable source of air automatically available to each connected facepiece and hose assembly in the event of compressor shut-down, contamination of air delivered by compressor, power loss or other failure. Provide sufficient capacity in the back-up air supply to allow a minimum escape time of one-half hour times the number of connections available to the Work Area. Air requirement at each connection is the air requirement of the respirators in use plus the air requirement of an average-sized adult male engaged in moderately strenuous activity.
- F. Warning device: Provide a warning device that will operate independently of the building's power supply. Locate so that the alarm is clearly audible above the noise level produced by equipment and work procedures in use, in all parts of the Work Area and at the compressor. Connect alarm to warn of:
1. Compressor shut down or other fault requiring use of backup air supply
 2. Carbon Monoxide (CO) levels more than 5 PPM/V
- G. Carbon Monoxide (CO) Monitor: Continuously monitor and record on a strip chart recorder Carbon Monoxide (CO) level. Place monitor in the air line between compressor and back-up air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices"
- H. Compressor Shut Down: Interconnect monitors, alarms and compressor so that compressor is automatically shut down and the alarms sound if any of the following occur:
1. Carbon Monoxide (CO) concentrations exceed 5 PPM/v in the air line between the filter bank and backup air supply
 2. Compressor temperature exceeds normal operating range
- I. Compressor Location: Locate compressor outside of building in location that will not impede access to the building, and that will not cause a nuisance by virtue of noise or fumes to occupying portions of the building.
- J. Air Intake: Locate air intake remotely from any source of automobile exhaust or any exhaust from engines, motors, auxiliary generator or buildings.
- K. After-Cooler: Provide an after-cooler at entry to filter system which can reduce temperatures to outside ambient air temperatures.
- L. Self Contained Breathing Apparatus (SCBA): Configure system to permit the recharging of ½ hour 2260 PSI (15.58 MPa) SCBA cylinders.



PART 3 EXECUTION

3.1 GENERAL:

- A. Respiratory Protection Program: Comply with ANSI Z88.2 "Practices for Respiratory Protection" and OSHA 29 CFR 1910.314 and 1926.103.
- B. Require that respiratory protection be always used so that there is any possibility of disturbance of ACM whether intentional or accidental.
- C. Require that a respirator be always worn by anyone in a Work Area, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Section 01711.
- D. Regardless of Airborne Fiber Levels: Require that the minimum level of respiratory protection used be a PAPR respirator with high efficiency filters.

3.2 FIT TESTING:

- A. Initial Fitting: Provide initial fitting of respiratory protection during a respiratory protection course of training set up and administered by an individual qualified to do fit testing. Fit types and sizes of respirator to be worn by everyone. Allow an individual to use only those respirators for which training and fit testing has been provided.
- B. On a Weekly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.
- C. Upon Each Wearing: Require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit test in accordance with the manufacturer's instructions or ANSI Z88.2.

3.3 TYPE OF RESPIRATORY PROTECTION REQUIRED:

- A. General: After reducing airborne asbestos levels to the lowest feasible level with engineering controls and work practices, provide respiratory protection as necessary to ensure that workers are not exposed to an airborne concentration of asbestos in excess of the Specified Permissible Exposure Limits (SPEL) set forth in this Section.
- B. Specific Respiratory Protection Requirements: Provide respiratory protection as indicated below as a minimum requirement:
 - 1. Powered Air-Purifying Respirators (PAPR): Provide powered air-purifying respirators (PAPR) during project set up and during final cleaning.
 - 2. Type "C" Supplied-air respirators: full facepiece pressure demand supplied air respirators are to be used by all workers engaged in the removal of thermal system insulation (TSI) or surfacing materials, or demolition of pipes, structures, or equipment covered or insulated



with asbestos, or in the removal or demolition of asbestos insulation or coverings, or any other activity, (with exception to 3.3 B.1), which results in or may result in airborne asbestos fiber levels.

3.4 SPECIFIED PERMISSIBLE EXPOSURE LIMITS (SPEL):

- A. Specified Permissible Exposure Limits (SPEL): Ensure that no worker is exposed to an airborne concentration of asbestos more than the Time-Weighted Average (TWA) limit, and Excursion Limit (EL) set forth below.
1. Time Weighted Average (TWA) limit - Concentration of airborne asbestos fibers to which any worker may be exposed as an eight (8) hour time-weighted average (TWA) shall not exceed the following.
 - a. 0.01 fibers per cubic centimeter
 2. Excursion Limit (EL) - Concentration of airborne asbestos fibers to which any worker may be exposed as averaged over a sampling period of thirty (30) minutes shall not exceed the following.
 - a. 1.0 fibers per cubic centimeter
- B. Fibers: For purposes of this section, fibers are defined as all fibers regardless of composition as counted in the OSHA Reference Method (ORM), or NIOSH 7400 procedure.
1. Electron Microscopy: If Electron Microscopy is used to determine airborne fiber levels, only asbestos fibers will be enumerated, but fibers of any size detected by the testing of Section 01711 Project Decontamination will be counted.

RESPIRATORY PROTECTION FACTOR

C.	Respirator Type	Protection Factor
1.	Powered air-purifying respirator equipped with high efficiency filters or any air supplied respirator operated in continuous flow mode. Full facepiece	1,000
2.	Supplied air: Positive pressure respirator Pressure demand or other Positive pressure mode	1,000



Full facepiece
Equipped with an
Auxiliary HEPA cartridge
or positive pressure
Self-contained breathing
apparatus (SCBA) for escape

3.5 AIR PURIFYING RESPIRATORS:

- A. Powered air purifying - half or full-face mask: Supply a sufficient quantity of high efficiency respirator filters approved for asbestos so that workers can change filter at any time that flow through the facepiece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during showering. Requires entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charged while one is in use.

3.6 SUPPLIED AIR RESPIRATOR:

- A. Air Systems Monitor: Continuously monitor the air system operation including compressor operation, filter system operation, backup air capacity and all warning and monitoring devices at all times that system is in operation. Assign an individual, trained by manufacturer of the equipment in use or by a Certified Industrial Hygienist, in the operation and maintenance of the system to provide this monitoring. Assign no other duties to this individual which will take him away from monitoring the air system.

END OF SECTION - 01562



SECTION 01563 - DECONTAMINATION UNITS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF WORK:

- A. Provide separate Personnel and Equipment Decontamination facilities. Require that the Personnel Decontamination Unit be the only means of ingress and egress for the Work Area. Require that all materials exit the Work Area through the Equipment Decontamination Unit.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Refer to Section 01503 Temporary Facilities - Asbestos Abatement for electrical requirements and requirements relative to connection of decontamination facilities to building systems such as water, sewer, and electrical.

1.4 SUBMITTALS

- A. Before the Start of Work, submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with Owner's Representative's action stamp indicating that the submittals are returned for unrestricted use or final-but-restricted use.
 - 1. Personnel Decontamination Unit: Provide shop drawing showing location and assembly of personnel decontamination units.
 - 2. Equipment Decontamination Unit: Provide shop drawing showing location and assembly of equipment decontamination units.
 - 3. Shower Pan: Provide shop drawing.
 - 4. Shower Walls: Provide product data.
 - 5. Shower Head and Controls: Provide product data.
 - 6. Filters: Provide product data and shop drawing of installation on decontamination unit.
 - 7. Hose Bib: Provide product data.
 - 8. Shower Stall: for Wash-Down Station provide product data and shop drawing showing and modifications.
 - 9. Elastomeric membrane: Provide product data.
 - 10. Lumber: Provide product data on fire resistance treatment.
 - 11. Sump Pump: Provide product data.



PART 2 PRODUCTS

2.1 MATERIALS

- A. Polyethylene Sheet: A single polyethylene film in the largest sheet possible to minimize seams, 6.0 mil (0.15 mm) thick, clear, frosted, or black as indicated.
- B. Flame Resistant Polyethylene Sheet: Provide flame resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil (0.15 mm) thick, frosted or black as indicated.
- C. Reinforced Polyethylene Sheet: Where plastic sheet is the only separation between the Work Area and building exterior, provide translucent, nylon reinforced, laminated, flame resistant, polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small Scale Fire Test for Flame-resistant Textiles and Films. Provide largest size possible to minimize seams, 6.0 mil (0.15 mm) thick, frosted or black as indicated.
- D. Duct Tape: Provide duct tape in 2 inch or 3-inch (51mm or 76 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
- E. Spray Adhesive: Provide spray adhesive in aerosol cans which are specifically formulated to stick tenaciously to sheet polyethylene.
- F. Shower Pan: Provide one piece waterproof shower pan 4 feet x 8 feet x 6 inches deep (102 mm X 204 mm x 152 mm deep). Fabricate from seamless fiberglass minimum 1/16 inch (1.59 mm) thick reinforced with wood, 18 gauge stainless or galvanized steel with welded seams, copper or lead with soldered seams, or a seamless liner of minimum 60 mil (1.5 mm) thick elastomeric membrane.
- G. Shower Walls: Provide 8 feet (2.44 m) long by approximately 7 feet (2.13 m) high walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally supports necessary for stability.
- H. Shower Head and Controls: Provide a factory-made shower head producing a spray of water which can be adjusted for spray size and intensity. Feed shower with water mixed from hot and cold supply lines. Arrange so that control of water temperature, flow rate, and shut off is from inside shower without outside aid.
- I. Filter: 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 - Passes particles 20 microns and smaller
 2. Secondary Filter - Passes particles 5 microns and smaller
- J. Hose Bib: Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4 inch (19.05 mm) National Standard male hose outlet.
- K. Shower Stall: For Wash Down Station provide leak tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3 feet x 3 feet (0.91m x 0.91 m) square with minimum 6 feet (1.83 m) high sides and back. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4 feet (1.22 m) above drain pan. Connect drain to a reservoir, pump water from



reservoir through filters to a drain or store and use for amended water. Mount filters inside shower stall on back wall beneath hose bib.

- L. Elastomeric membrane: Provide uniform flat sheets of flexible sheet roofing material fabricated from EPDM (ethylene propylene diene monomers) or Neoprene (polychloroprene), in a nominal 5 mil (1.14 mm) thickness.
- M. Lumber: Provide kiln dried lumber of any grade or species.
- N. 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 pump, through the filters specified herein when they are loaded to the extent that replacement is required. Provide units capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to the mechanism of pump. Adjust float switch so that a minimum of 3 inches (76 mm) remains between top of pipe and top of sump pan.

PART 3 EXECUTION

3.1 PERSONNEL DECONTAMINATION UNIT:

- A. Provide a Personnel Decontamination Unit consisting of a serial arrangement of connected rooms or spaces, Changing Room, Drying Room, Shower Room, and Equipment Room. Request all persons without exception to pass through this Decontamination Unit for entry into and exiting from the Work Area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through the Personnel Decontamination Unit. Provide temporary lighting within Decontamination Units as necessary to reach a lighting level of 100-foot candles (1076 lumens / sq meter).
- B. Changing Room (clean room): Provide a room that is physically and visually separated from the rest of the building for the purpose of changing into protective clothing.
 - 1. Construct using polyethylene sheeting, at least 6 mil (0.15 mm) in thickness, to provide an airtight seal between the Changing Room and the rest of the building.
 - 2. Locate so that access to the Work Area from the Changing Room is through Shower Room.
 - 3. Separate the Changing Room from the building by a plastic sheet flapped doorway.

Require workers to remove all street clothes in this room, dress in clean, disposable coveralls, and don respiratory protection equipment. Do not allow asbestos-contaminated items to enter this room. Require Workers to enter this room either from outside the structure dressed in street clothes, or naked from the showers.
 - 5. An existing room may be utilized as the Changing Room if it is suitably located and of a configuration whereby workers may enter the Changing Room directly from the Shower Room. Protect all surfaces of the room with sheet plastic as set forth in Section 01526 Temporary Enclosures. Authorization for this must be obtained from the Owner's Representative in writing prior to the start of construction. Submit written request in accordance with Section 01632 "Substitutions" detailing layout and protective measures proposed.



6. Always maintain floor of changing room dry and clean. Do not allow water from shower to wet floor in the changing room.
 7. Damp wipes all surfaces twice after each shift change with a disinfectant solution.
 8. Provide posted information for all emergency phone numbers and procedures.
 9. Provide 1 storage locker per employee.
 10. Provide all other components indicated on the contract drawings.
 11. Airlock: Provide an airlock between the Drying Room and Changing Room. This is a transit area for workers.
 12. Separate this room from the Drying Room and Changing Room by 6-foot plastic flapped doorways.
 13. Separate this room from the rest of the building with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.
 14. Separate this room from the Drying and Changing rooms with airtight walls fabricated of 6 mil (0.15 mm) polyethylene.
- C. Shower Room: Provide a completely watertight operational shower to be used for transit by cleanly dressed workers heading for the Work Area from the Changing Room, or for showering by workers heading out of the Work Area after undressing in the Equipment Room.
1. Construct a room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.
 2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
 3. Separate this room from the Change Room and Airlock with airtight walls fabricated of 6 mil polyethylene.
 4. Provide splash proof entrances to Change Room and Airlock with doors arranged in a manner which will prevent shower water from exiting the Shower Room.
 5. Provide shower head and controls.
 6. Provide temporary extensions of existing hot and cold water and drainage, as necessary for a complete and operable shower.
 7. Provide a soap dish and a continuously adequate supply of soap and maintain in sanitary condition.
 8. Arrange so that water from showering does not splash into the Changing or Equipment Rooms.
 9. Arrange water shut off and drain pump operation controls so that a single individual can shower without assistance from either inside or outside of the Work Area.
 10. Provide flexible hose shower head.



11. Pump wastewater to drain or to storage for use in amended water. If pumped to drain, provide 20 micron and 5-micron wastewater filters in line to drain or waste water storage. Change filters daily or more often if necessary. Locate filters inside the shower unit so that water lost during filter changes is caught by shower pan.
 12. Provide hose bib.
 13. Provide all other items indicated on contract drawings.
- D. Equipment Room (contaminated area): Require work equipment, footwear and additional contaminated work clothing to be left here. This is a change and transit area for workers.
1. Separate this room from the Work Area by a 6-mil polyethylene flapped door way.
 2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
 3. Separate this room from the Shower Room and Work Area with airtight walls fabricated of 6 mil polyethylene.
 4. Provide a drop cloth layer of sheet plastic on the floor in the Equipment Room for every shift change expected. Roll drop cloth layer of plastic from Equipment Room into Work Area after each shift change. Replace before the next shift change. Always provide a minimum of two (2) layers of plastic. Use only clear plastic to cover floors.
- E. Work Area: Separate Work Area from the Equipment Room by polyethylene barriers. If the airborne asbestos level in the Work Area is expected to be high, as in dry removal, add an intermediate cleaning space between the Equipment Room and the Work Area. Damp wipe clean all surfaces after each shift change. Provide one additional floor layer of 6 mil polyethylene per shift change and remove contaminated layer after each shift.
- F. Decontamination Sequence: Require that all workers adhere to the following sequence when entering or leaving the Work Area.
1. Entering Work Area: Worker enters Changing Room and removes street clothing, puts on clean disposable overalls and respirator, and passes through the Shower Room into the Equipment Room.
 2. Any additional clothing and equipment left in the Equipment Room needed by the workers are put on in the Equipment Room.
 3. Worker proceeds to Work Area.
- G. Exiting Work Area:
1. Before leaving the Work Area, require the worker to remove all gross contamination and debris from overalls and feet.
 2. The worker then proceeds to the Equipment Room and removes all clothing except respiratory protection equipment.
 3. Extra work clothing such as boots, hard hats, goggles, and gloves are to be stored in the contaminated end of the Equipment Room.
 4. Disposable coveralls are placed in a bag for disposal with other material.



5. Require that Decontamination procedures found in Section 01560 be followed by all individuals leaving the Work Area.
6. After showering, the worker moves to the Changing Room and dresses in either new coveralls for another entry or street clothes if leaving.

3.2 EQUIPMENT DECONTAMINATION UNIT:

- A. Provide an Equipment Decontamination Unit consisting of a serial arrangement of rooms, Clean Room and Washroom for removal of equipment and material from Work Area. Do not allow personnel to enter or exit Work Area through Equipment Decontamination Unit.
- B. Arrange air locks between rooms as required below.
- C. Wash Down Station: Provide an enclosed Shower Unit located in the Work Area just outside Washroom as an equipment, bag and container cleaning station.
 1. Fabricate waterproof floor extending 6 feet beyond Wash Down station in all directions. Install seamless waterproof membrane over area and extend over curbs on all four sides. Form curbs from 2-inch x 4-inch lumber laid on the flat.
 2. Waterproof membrane is to be fabricated from elastomeric membrane.
 3. Waterproof membrane is to be fabricated from a minimum of 10 mil polyethylene.
 4. Do not allow water to collect on waterproof membrane. Remove continuously with a wet vacuum or mops.
- D. Washroom: provide wash room for cleaning of bagged or containerized asbestos-containing waste materials passed from the Work Area.
 1. Construct washroom of nominal 2 inch x 4 inch wood framing and polyethylene sheeting, at least 6 mil in thickness and located so that packaged materials, after being wiped clean, can be passed to the Holding Room.
 2. Separate this room from the Work Area by a single flapped door of 6 mil polyethylene sheeting.
 3. Provide a drop cloth layer of plastic on floor in the Washroom for every load-out operation. Roll this drop cloth layer of plastic from Washroom into Work Area after each load-out. Always provide a minimum of two (2) layers of plastic. Use only clear plastic to cover floors.
- E. Holding Room: Provide Holding Room as a drop location for bagged asbestos-containing materials passed from the Washroom. Construct a Holding Room of nominal 2 inch x 4 inch wood framing and polyethylene sheeting, at least 6 mil in thickness and located so that bagged materials cannot be passed from the Washroom through the Holding Room to the Clean Room.
 1. Separate this room from the adjacent rooms by flap doors fabricated from 6 mil sheet plastic.
- F. Clean Room: provide Clean Room to isolate the Holding Room from the building exterior. If possible, locate to provide direct access to the Holding Room from the building exterior.



1. Erect Critical and Primary Barriers as described in Section 01526 "Temporary Enclosures" in an existing space. If no space exists construct Clean Room of 2 x 4 wood framing and polyethylene sheeting, at least 6 mil in thickness.
 2. Separate this room from the exterior by a single flap door of 6 mil polyethylene sheeting.
- G. Load-out Area: The load-out area is the transfer area from the building to a truck or dumpster. It may be the Clean Room of the Equipment Decontamination unit or a separate room or loading dock area. Erect Critical and Primary barriers as described in Section 01526 "Temporary Enclosures" in load-out area.
1. During transfer of material from the load-out area erect primary barriers as described in Section 01526 "Temporary Enclosures" as necessary to seal path from load-out area to truck or dumpster.
- H. Decontamination Sequence: Take all equipment or material from the Work Area through the Equipment Decontamination Unit according to the following procedure:
1. At wash-down station, thoroughly wet clean contaminated equipment or sealed polyethylene bags and pass into the Washroom.
 2. When passing equipment or containers into the Washroom, close all doorways of the Equipment Decontamination Unit, other than the doorway between the Wash-down Station and the Washroom. Keep all outside personnel clear of the Equipment Decontamination Unit.
 3. Once inside the washroom, wet clean the bags and/or equipment.
 4. When cleaning is complete pass items into the Holding Room. Close all doorways except the doorway between the Holding room and the Clean Room.
 5. Workers from the building exterior enter the Holding Area and remove decontaminated equipment and/or containers for disposal.
 6. Require these workers to wear full protective clothing and appropriate respiratory protection.
 7. At no time is a worker from an uncontaminated area entering the enclosure when a removal worker is inside.

3.3 CONSTRUCTION OF THE DECONTAMINATION UNITS:

- A. Walls and Ceiling: Construct airtight walls and ceiling using polyethylene sheeting, at least 6 mil in thickness. Attach to existing building components or a temporary framework.
- B. Floors: Use 2 layers (minimum) of 6 mil polyethylene sheeting to cover floors in all areas of the Decontamination Units. Use only clear plastic to cover floors.
- C. Flap Doors: Fabricated from three (3) overlapping sheets with openings a minimum of three feet (3') wide. Configure so that sheeting overlaps adjacent surfaces. Weights at bottom of sheets as required so that they quickly close after being released. Put arrows on sheets to indicate direction of overlap and/or travel. Provide a minimum of six feet (6') between entrance and exit of any room. Provide a minimum of three feet (3') between doors to air locks.
- D. If the Decontamination area is located within an area containing friable asbestos on overhead ceilings, ducts, piping, etc., provide the area with a minimum 1/4-inch hardboard or 1/2 inch



plywood "ceiling" with polyethylene sheeting, at least 6 mil in thickness covering the top of the "ceiling".

- E. Visual Barrier: Where the Decontamination area is immediately adjacent to and within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6 mil in thickness so that worker privacy is maintained and work procedures are not visible to building occupants. Where the area adjacent to the Decontamination area is accessible to the public, construct a solid barrier on the public side of the sheeting to protect the sheeting. Construct barrier with wood or metal studs covered with minimum 1/4-inch-thick hardboard or 1/2 inch plywood. Where the solid barrier is provided, sheeting need not be opaque.
- F. Alternate methods of providing Decontamination facilities may be submitted to the Owner's Representative for approval. Do not proceed with any such method(s) without written authorization of the Owner's Representative.
- G. Electrical: Provide subpanel at Changing Room to accommodate all removal equipment. Power subpanel directly from a building electrical panel.
 - 1. Connect all electrical branch circuits in Decontamination unit and particularly any pumps in shower room to a ground-fault circuit protection device.

3.4 CLEANING OF DECONTAMINATION UNITS:

- A. Clean debris and residue from inside of Decontamination Units daily or as otherwise indicated on Contract Drawings. Damp wipe or hose down surfaces after each shift change. Clean debris from shower pans daily.
- B. If the Changing Room of the Personnel Decontamination Unit becomes contaminated with asbestos-containing debris, abandon the entire Decontamination Unit and erect a new Decontamination Unit. Use the former Changing Room as an inner section of the new Equipment Room.

3.5 SIGNS:

- A. Post an approximately 20 inch by 14-inch manufactured caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 19.16:

- 1. Provide signs in both English and Spanish.

- 2. Legend:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

- 3. Provide spacing between respective lines at least equal to the height of the respective upper line.



B. Post an approximately 10 inches by 14 inch manufactured sign at each entrance to each Work Area displaying the following legend with letter sizes and styles of a visibility at least equal to the following:

1. Provide signs in both English and Spanish.

2. Legend

Notation

NO FOOD, BEVERAGES OR TOBACCO PERMITTED 3/4-inch (19 mm) Block

ALL PERSONS SHALL DON PROTECTIVE 3/4 inch (19 mm) Block
CLOTHING (COVERINGS) BEFORE
ENTERING THE WORK AREA

ALL PERSONS SHALL SHOWER IMMEDIATELY 3/4 inch (19 mm) Block
AFTER LEAVING WORK AREA AND BEFORE
ENTERING THE CHANGING AREA

END OF SECTION - 01563



SECTION 01601 - MATERIALS AND EQUIPMENT - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. The Contractor's Construction Schedule is included under Section 01043 Coordination - Asbestos Abatement.
 - 2. The Contractor's Schedule of Submittals is included under Section 01301 Submittals - Asbestos Abatement.
 - 3. The applicability of industry standards to specified products is included under Section 01097 Reference Standards and Definitions - Asbestos Abatement.
 - 4. The administrative procedure for handling requests for substitutions made after award of the Contract is included under Section 01632 Substitutions - Asbestos Abatement.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 2. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature that is current as of the date of the Contract Documents.
 - 3. "Foreign Products" as distinguished from "domestic products," are items substantially manufactured (50 percent or more of value) outside the United States and its possessions. Products produced or supplied by entities substantially owned (more than 50 percent) by persons who are not citizens of, nor living within, the United States and its possessions are also considered to be foreign products.
 - 4. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.



5. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.
6. "Equipment" are products that may be either operational or fixed.
 - a. Operational Equipment is products with operating parts, whether motorized or manually operated, that require temporary or permanent service connections, such as wiring or piping.
 - b. Fixed Equipment are products necessary for accomplishing the work that are used as a temporary facility during the work and removed afterward.

1.4 SUBMITTALS

Required submittals: A general listing of products requiring submittals is included at the end of Section 01301 "Submittals." This listing may not be complete. Submittal requirements are found in each specification section. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed.

- A. Product List: Prepare a list showing products specified in tabular form acceptable to the Owner's representative. Include generic names of products required. Include the manufacturer's name and proprietary product names for each item listed.
 1. Coordinate product list with the Contractor's Construction Schedule and the Schedule of Submittals.
 2. Form: Prepare product list with information on each item tabulated under the following column headings:
 - a. Related Specification Section number.
 - b. Generic name is used in Contract Documents.
 - c. Proprietary name, model number, and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date or time span of delivery period.
 3. Owner's Representative's Action: The Owner's Representative will respond in writing to the Contractor within 2 weeks of receipt of the completed product list. No response within this period constitutes no objection to listed manufacturers or products but does not constitute a waiver of the requirement that products comply with Contract Documents. The Owner's representative's response will include a list of unacceptable product selections, containing a brief explanation of the reasons for this action.



1.5 QUALITY ASSURANCE

- A. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 7. Store products subject to damage by the elements above ground, under cover in a weather-tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.
1. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:
1. Semi proprietary Specification Requirements: Where Specifications name 2 or more products or manufacturers, provide 1 of the products indicated. No substitutions will be permitted.



- a. Where Specifications specify products or manufacturers by name, accompanied by the term "or equal" or "or approved equal," comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturers' instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01601

NOT FOR BIDDING PURPOSES



SECTION 01632 - SUBSTITUTIONS - ASBESTOS ABATEMENT

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- B. Related Sections: The following Sections contain requirements that relate to the Section:
 - 1. Division 1 Section "Reference Standards and Definitions - Asbestos Abatement" specifies the applicability of industry standards to products specified.
 - 2. Division 1 Section "Coordination - Asbestos Abatement" specifies requirements for submitting the Contractor's Construction Schedule.
 - 3. Division 1 Section "Submittals - Asbestos Abatement" specifies requirements for submitting the Submittal Schedule.
 - 4. Division 1 Section "Materials and Equipment - Asbestos Abatement" specifies requirements governing the Contractor's selection of products and product options.

1.3 DEFINITIONS

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are requests for substitutions. The following are not considered to be requests for substitutions:
 - 1. Substitutions requested during the bidding period, and accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
 - 2. Revisions to the Contract Documents requested by the Owner or Owner's Representative.
 - 3. Specified options of products and construction methods included in the Contract Documents.
 - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.



1.4 SUBMITTALS

- A. Substitution Request Submittal: The Owner's Representative will consider requests for substitution if received within 2 weeks prior to commencement of the Work. Requests received less than 3 weeks prior to commencement of the Work may be considered or rejected at the discretion of the Owner's Representative.
1. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for change-order proposals.
 2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
 3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors that will be necessary to accommodate the proposed substitution.
 - b. A detailed comparison of significant quantities of the proposed substitution with those of the specified work. Significant quantities may include elements, such as performance, weight, size, durability, and visual effects.
 - c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
 - d. Samples, where applicable or requested.
 - e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
 - h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
 4. Owner's Representative's Action: If necessary, the Owner's Representative will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Owner's Representative will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.
 - a. Use the specified product if the Owner's Representative cannot decide on the use of a proposed substitute within the time allocated.



PART 2 PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: The Owner's Representative will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Owner's Representative. If the following conditions are not satisfied, the Owner's Representative will return the requests without action except to record noncompliance with these requirements.
1. Extensive revisions to the Contract Documents are not required.
 2. Proposed changes are in keeping with the general intent of the Contract Documents.
 3. The request is timely, fully documented, and properly submitted.
 4. The specified product or method of construction cannot be provided within the Contract Time.
 5. The Owner's Representative will not consider the request if the product or method cannot be provided as a result of failure to pursue the work promptly or coordinate activities properly.
 6. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
 7. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Owner's Representative for redesigning and evaluation services, increased cost of other construction by the Owner, and similar considerations.
 8. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 9. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.
 10. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
 11. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
- B. The Contractor's submittal and the Owner's Representative's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.



PART 3 EXECUTION (Not Applicable)

END OF SECTION 01632

NOT FOR BIDDING PURPOSES



SECTION 01701 - CONTRACT CLOSEOUT - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Submittal of warranties.
 - 4. Final cleaning.
- B. Close out requirements for specific construction activities are included in the appropriate Sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
 - a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise the Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
 - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.



6. Complete final cleanup requirements, including touch up painting, if required.
 7. Touch up and otherwise repair and restore marred, exposed finishes.
 8. Complete start up testing of building systems, remove temporary facilities from site along with construction tools and similar elements.
- B. Inspection Procedures: On receipt of a request for inspection, the Owner's Representative will either proceed with inspection or advise the Contractor of unfilled requirements. The Owner's Representative will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate is issued. This will form the initial "punch-list" for final acceptance.
1. The Owner's Representative will repeat inspection when requested and assured that the Work is substantially complete.
 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations when required.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Owner's Representative's final inspection list of items to be completed or corrected, endorsed and dated by the Owner's Representative. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Owner's Representative.
 4. Submit consent of surety to final payment.
 5. Submit a final liquidated damages settlement statement.
 6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Re-inspection Procedure: The Owner's Representative will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Owner's Representative.
1. Upon completion of re-inspection, the Owner's Representative will prepare a certificate of final acceptance. If the Work is incomplete, the Owner's Representative will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
 2. If necessary, re-inspection will be repeated.



1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Owner's Representative's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record later.
1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
 2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
 3. Note related to change-order numbers where applicable.
 4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.
1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 3. Note related record drawing information and Product Data.
 4. Upon completion of the Work, submit record Specifications to the Owner's Representative for the Owner's records.
- D. Record Product Data: Maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.
1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
 2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
 3. Upon completion of markup, submit a complete set of record Product Data to the Owner's Representative for the Owner's records.
- E. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records



and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section "Construction Facilities and Temporary Controls." The cleaning in this Section is in addition to cleaning which is part of decontamination work. This section is intended to return the facility to the Owner in presentable condition.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials.
 - c. Replace chipped or broken glass and other damaged transparent materials.
 - d. Clean exposed exterior and hard-surfaced interior finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - e. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - f. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.



1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION 01701

NOT FOR BIDDING PURPOSES



SECTION 01711 - PROJECT DECONTAMINATION

PART 1 - GENERAL

1.1 SUMMARY:

- A. Work of This Section includes the decontamination of air in the Work Area which has been, or may have been, contaminated by the elevated airborne asbestos fiber levels generated during abatement activities, or which may previously have had elevated fiber levels due to friable asbestos-containing materials (ACM) in space.
- B. Work of This Section includes the cleaning, decontamination, and removal of temporary facilities installed prior to abatement work, including:
 - 1. Primary and Critical Barriers erected by work of Section 01520
 - 2. Decontamination Unit erected by work of Section 01502
 - 3. Pressure Differential System installed by work of Section 01513
- C. Work of This Section includes the cleaning, and decontamination of all surfaces (ceiling, walls, floor) of the Work Area, and all furniture or equipment in the Work Area.

1.2 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to work of this section.

1.3 DESCRIPTION OF REQUIREMENTS:

- A. General: Decontamination of the Work Area following asbestos abatement.
- B. If the asbestos abatement work is on damaged or friable materials the work is a four-step procedure with two cleanings of the Primary Barrier plastic prior to its removal and two cleanings of the room surfaces to remove any new or existing contamination. Unless specifically indicated otherwise all materials are considered damaged or friable for purposes of this section.
- C. If the asbestos abatement work is on undamaged and non-friable materials the decontamination procedure is a two-step procedure with two cleanings of the Primary Barrier plastic to remove contamination, thus preventing contamination of the building when the Work Area isolation barriers are removed.
- D. In both cases operation of the pressure differential system is used to remove airborne fibers generated by the abatement work.

1.4 RELATED WORK SPECIFIED ELSEWHERE:

- A. Removal of Gross Debris is integral with the performance of abatement work and as such is specified in the appropriate work section(s) of these specifications:
 - 1. Section 02081 Removal of Asbestos-Containing Materials



1.5 CLEARANCE AIR SAMPLING BY THE OWNER:

- A. To determine if the elevated airborne asbestos structure concentration encountered during abatement operations has been reduced to the specified level, the Owner will secure samples and analyze them according to the following procedures.
1. Aggressive sampling procedures described below will be followed.
 2. PCM and TEM samples will be secured as indicated below. PCM samples will be analyzed, and TEM samples will be transmitted to the laboratory. If the area meets the clearance criteria by PCM the TEM analysis will proceed.
 3. Work Area Clearance: upon meeting the TEM Clearance requirements the work of Section 01711 Project Decontamination can continue.

1.6 AGGRESSIVE SAMPLING BY THE OWNER:

- A. All Air Samples will be taken using aggressive sampling techniques as follows:
1. Before sampling pumps are started the exhaust from forced-air equipment (leaf blower with an approximately 1 horsepower (746 watts) electric motor) will be swept against all walls, ceilings, floors, ledges and other surfaces in the room. This procedure will continue for 5 minutes per 10,000 (283 cubic meters) cubic feet of room volume.
 2. One 20-inch (508 mm) diameter fan for 10,000 cubic feet (283 cubic meters) of room volume will be mounted in a central location at approximately 6 feet-6 inches (2 meters) above floor, directed toward ceiling and operated at low speed for the entire period of sample collection.
 3. Air samples will be collected in areas subject to normal air circulation away from room corners, obstructed locations, and sites near windows, doors or vents.
 4. After air sampling pumps have been shut off, fans will be shut off.
 5. In work areas where a dirt floor or exposed fibrous glass insulation is in space, but outside the work area maintains a critical barrier to prevent disturbance of these surfaces during aggressive sampling.

1.7 SCHEDULE OF CLEARANCE AIR SAMPLES BY OWNER:

- A. Sample cassettes: Samples will be collected on 25 mm. cassettes as follows:
1. PCM: 0.8 micrometer mixed cellulose ester.
 2. TEM: 0.45 micrometer mixed cellulose ester or 0.40 micrometer polycarbonate, with 5.0-micron mixed cellulose ester backing filter.
- B. Number and Volume of Samples: The number and volume of air samples given in the schedules is approximate. The exact number and volume of samples collected by the Owner may vary depending upon job conditions and the analytical method used.
- C. Sampling sensitivity:



1. PCM: Based on a limit of detection (LOD) of 7 fibers/mm² on the filter (approximately 5 fibers counted in 100 fields) and a 95% confidence limit, a sample volume of sufficient size that a single sample indicates compliance with the limit values given below. A sample must be at or below the LOD to indicate that it is at or below the limit value. Note: This is different from quantifying concentration which is a stricter requirement and would need a larger sample volume.

- a. Clearance samples - a limit value of 0.01 f/cc.

2. TEM: Analytical Sensitivity as set forth in the analytical method used or the AHERA regulation.

D. PHASE CONTRAST MICROSCOPY:

1. In each Work Area after completion of all cleaning work, air samples will be taken and analyzed as described in Section 01013.
2. Analysis: Fibers on each filter will be measured using the NIOSH Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, or the OSHA Reference Method (ORM) (29 CFR 1926.1101 Appendix A).
3. Fibers: referred to in this section include fibers regardless of composition as counted by the phase contrast microscopy method used.
4. Split Sample: One Work Area sample will be split and both halves analyzed separately for duplicate analysis.
5. Release Criteria: Decontamination of the work site is complete when every Work Area sample is at or below the Detection Limit above. If any sample is above the Detection Limit, then the decontamination is incomplete and re-cleaning per section 01711 Project Decontamination is required.

1.8 TRANSMISSION ELECTRON MICROSCOPY:

- A. In each Work Area after completion of all cleaning work, TEM samples may be taken and analyzed as referenced in Section 01013.
- B. Analysis will be performed using the analysis method set forth in the AHERA Regulation 40 CFR Part 76 Appendix A.
- C. Asbestos Structures referred to in this Section include asbestos fibers, bundles, clusters or matrices, as defined by method of analysis.
- D. Release Criteria: Decontamination of the work site is complete if either of the following two sets of conditions are met:
 1. Work Area Samples are below filter background levels
 - a. All Work Area sample volumes are greater than 2,000 liters for a 25 mm. sampling cassette.
 - b. The average concentration of asbestos of the five Work Area Samples does not exceed the filter background level of 70 structures per square millimeter of filter area.



2. Work Area Samples are not statistically different from Outside samples
 - a. All sample volumes except for blanks are greater than 2,000 liters for a 25 mm. sampling cassette.
 - b. The average asbestos concentration of the three blanks is below the filter background level of 70 structures per square millimeter of filter area.
 - c. Average asbestos concentrations in Work Area Samples are not statistically different from Outside samples, as determined by the Z-test calculation found in 40 CFR Part 763, Subpart E, Appendix A (Z is less than or equal to 1.65)
- E. If these conditions are not met then the decontamination is incomplete, repeat the cleaning procedures of this section.
- F. Termination of Analysis: if the arithmetic mean (average) asbestos concentration on the blank filters exceed 70 structures per square millimeter of filter area the analysis will cease and new samples collected.

1.9 LABORATORY TESTING BY THE OWNER:

- A. Phase Contrast Microscopy by the Owner:
 1. The services of a testing laboratory will be employed by the Owner to perform laboratory analysis of the air samples. A microscope and technician will be set up at the job site, or samples will be sent daily by overnight mail, so that verbal reports on air samples can be obtained within 24 hours. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the Owner's Representative, the Owner and the Contractor.
- B. Transmission Electron Microscopy by the Owner:
 1. Samples will be sent by overnight courier for analysis by Transmission Electron Microscopy. Samples will not be carried on weekends, so that samples shipped on Friday will arrive on the following Monday. Verbal results will normally be available between 24 and 48 hours after receipt of samples by the laboratory.
 2. Submit with bid unit cost for each day of waiting beyond that set forth in the paragraph above.

1.10 SUBMITTALS

- A. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal is returned for "Unrestricted Use" or "Final But Restricted Use."
 1. Submit test report from an independent testing laboratory on the fire resistance rating of the assembly of the spray back fireproofing on the lock-back sealer used.
- B. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal has been "Received - Not Reviewed."



SECTION 01712 - CLEANING AND DECONTAMINATION PROCEDURES

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF THE WORK:

- A. The work includes the removal of materials as indicated in Section 0101 of the specification or as indicated on the drawings associated with the work.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL:

- A. Complete the following before start of work of this section:
 - 1. 01527 Regulate Areas
 - 2. 01562 Respiratory Protection
 - 3. 01560 Worker Protection – Asbestos Abatement
 - 4. 01562 Respiratory Protection

3.2 WET CLEANING:

- A. Accomplish wet cleaning during decontamination with paper towels or disposable rags:
- B. Immerse paper towel or rag in container of amended water or dilute removal encapsulant.
- C. Wring out,
- D. Fold into quarters,
- E. Wipe surface once and refold to a fresh face of cloth. Proceed in this manner until all available faces of paper towel or rag have been used.
- F. Dispose of paper towels or rag,
- G. Do not place rag back in container to rinse out or for any other purpose. If a used towel or rag comes in contact with water, empty container and refill.
- H. Material adhered to a surface with removal encapsulant may require the application of an additional removal encapsulant to facilitate cleaning.



3.3 REMOVAL OF ASBESTOS-CONTAINING DEBRIS

- A. Work of this Section is associated with the work stipulated under Section 01013 and/or indicated on the drawings.
- B. Remove asbestos-containing debris and decontaminate the area involved using the following sequence:
1. Shut down all the ventilation into the room.
 2. Seal entry to work area with 6 mil (0.15 mm) polyethylene. Slit polyethylene for entry. Install a flap to cover the slit automatically; tape slit closed after entry.
 3. Start HEPA vacuum before entering the area.
 4. Use the HEPA vacuum to clean a path at least 6 feet (1.83 m) wide from the entry point of the work area to the site of the fallen material.
 5. Remove all the small debris with the HEPA vacuum.
 6. HEPA vacuum surfaces of all pieces too large to be removed by the suction of the HEPA vacuum.
 7. Pick up such pieces and place in the bottom of a 6 mil (0.15 mm) polyethylene disposal bag conforming to the requirements of Section 02084 Disposal of Regulated Asbestos-Containing Material. Place pieces in the bag without dropping and avoiding unnecessary disturbance and release of material.
 8. Remove all remaining visible debris with HEPA vacuum.
 9. HEPA vacuum an area 3 feet (0.91 m) beyond the location in which any visible debris was found in two directions each at right angles to the other.
 10. Place a 6 mil (0.15 mm) polyethylene drop cloth in accordance with Section 01527, Local Area Protection immediately on top of the HEPA vacuumed area before performing any repair work on site from which fall-out occurred.
 11. HEPA vacuums the site from which material falls removing all loose material which can be removed by the vacuums suction.
 12. Repair or remove the remaining material.
 13. HEPA vacuum ladder and/or any tools used and passed out of the work area.
- C. HEPA vacuums all surfaces in the room starting at the top of wall and working downward to the floor. Then start at corner of floor farthest from the Work Area entrance and work towards entrance.
1. HEPA vacuums the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16 inch (1.6 mm) of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one-half the width of the floor attachment. At the completion of one cleaning vacuum the floor a second time at right angles to the first.
- D. Secure area from occupancy until air monitoring results per Section 01714 Project Decontamination indicate that area is safe for re-occupancy.



3.4 CLEANING AND DECONTAMINATING OBJECTS

- A. Perform all work of decontaminating objects wherever possible on a plastic drop sheet installed in conformance with Section 01527.
- B. HEPA vacuums all surfaces of object and immediate area before moving the object.
- C. Pick-up object, if possible, and HEPA vacuum all surfaces.
- D. Hand to off-sheet worker who will wet-clean object, if possible, and place in storage location.
- E. Decontaminate area where object was located by HEPA vacuuming twice, in two perpendicular directions. Wet is clean if necessary to remove any debris.
- F. Return object to its original location.

3.5 DECONTAMINATION OF ROOMS:

- A. Shut down all the ventilation into space.
- B. Seal entry to Work Area with 6 mil (0.15 mm) polyethylene. Slit polyethylene for entry. Install a flap to cover the slit automatically; tape slit closed after entry.
- C. Install Differential Pressure System in accordance with Section 01513.
- D. HEPA vacuum all surfaces in the room starting at the ceiling, then top of wall and working downward to the floor.
- E. HEPA vacuums the floor using a floor attachment with rubber floor seals and adjustable floor to attachment height. Adjust the height so that the rubber seals just touch the floor if carpeted and are within 1/16 inch (1.6 mm) of hard surface floors. Vacuum the floor in parallel passes with each pass overlapping the previous by one half the width of the floor attachment. At the completion of one cleaning, vacuum the floor a second time at right angles to the first.
- F. Operate HEPA filtered fan unit in space for 96 air changes minimum.
- G. At completion of Decontamination Work workers decontaminate in accordance with Section 01561 Worker Protection - Repair and Maintenance.
- H. Secure area from occupancy until air monitoring results per Section 01714 Work Area Clearance indicates area is safe for re-occupancy.

END OF SECTION 01712



SECTION 02063 - REMOVAL OF ASBESTOS CONTAMINATED MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.

1.2 SUMMARY OF WORK:

- A. Work of this section includes removal and disposal of all Asbestos-Contaminated Material as described in Section 01013

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Unlabeled Clear Bags: Provide clear 6 mil (0.15 mm) thick leak-tight polyethylene bags with no label.
- B. Disposal Bags: Provide disposal bags as described in Section 02084 "Disposal of Regulated Asbestos-Containing Material"

PART 3 - EXECUTION

3.1 SEQUENCE

- A. Before beginning work of this section comply with:
 - 1. 01503 Temporary Facilities - Asbestos Abatement
 - 2. 01513 Temporary Pressure Differential and Air Circulation System
 - 3. 01563 Decontamination Units
 - 4. 01526 Temporary Enclosures
 - 5. 01560 Worker Protection - Asbestos Abatement
 - 6. 01562 Respiratory Protection
 - 7. Section 01527 - Regulated Areas
 - 8. Section 01562 - Respiratory Protection



3.2 MATERIAL DESCRIPTIONS AND HANDLING METHODS

- A. Reference Section 1013 regarding specifics associated with this area of work.

3.3 AIRBORNE FIBER LEVELS:

- A. Airborne Fiber Levels: Maintain airborne fiber levels less than the "Stop Action Levels" set forth in Section 01013 "Summary of Work - Asbestos Abatement."

END OF SECTION - 02063

NOT FOR BIDDING PURPOSES



SECTION 02081 - REMOVAL OF ASBESTOS-CONTAINING MATERIALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Worker Protection requirements are set forth in Section 01560 Worker Protection - Asbestos abatement.
- B. Installation of Critical and Primary Barriers, and Work Area Isolation Procedures are set forth in Section 01526 Temporary Enclosures.
- C. Project Decontamination procedures after removal of the Secondary Barrier are specified in Section 01711 Project Decontamination.
- D. Disposal of asbestos-containing waste is specified in Section 02084 Disposal of Regulated Asbestos-Containing Material.

1.3 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.
 - 1. Surfactant: Submit product data, use instructions and recommendations from manufacturer of surfactant intended for use. Include data substantiating that material complies with requirements.
 - 2. Removal Encapsulant: Submit product data, use instructions and recommendations from manufacturer of removal encapsulant intended for use. Include data substantiating that material complies with requirements.
 - 3. NESHAP Certification: Submit certification from manufacturer of surfactant or removal encapsulant that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will wet Asbestos-Containing Materials (ACM) to which it is applied as required by the National Emission Standard for Hazardous Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M).
- B. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal has been "Received - Not Reviewed."
 - 1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for the following:
 - a. Surfactants.



- b. Encapsulants.
- c. Solvents.

PART 2 - PRODUCTS:

2.1 MATERIALS

- A. Wetting Materials: For wetting prior to disturbance of ACM use either amended water or a removal encapsulant:
- B. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided using one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons (19 liters) of water.
- C. Removal Encapsulant: Provide a penetrating type encapsulant designed specifically for removal of ACM. Use material which results in wetting of the ACM and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of a mixture of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether in five gallons (19 liters) of water.
- D. Polyethylene Sheet: A single polyethylene film in the largest sheet size practicable to minimize seams, 6.0 mil (0.15 mm) thick clear, frosted, or black as indicated.
- E. Duct Tape: Provide duct tape in 2-inch or 3-inch (50mm or 75 mm) widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
- F. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- G. Disposal Bags: Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of Regulated Asbestos Containing Material.
- H. Fiberboard Drums: Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.
- I. Paperboard Boxes: Provide heavy duty corrugated paper board boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.
- J. Felt: Standard felt approximately 1/16 inch (1.6 mm) thick and 36 inches (900 mm) to 72 inches (1800 mm) in width.

PART 3 - EXECUTION

3.1 SECONDARY BARRIER:

- A. Secondary Barrier: Over the Primary Barrier, install as a drop cloth a clear 6 mil (0.15 mm) sheet plastic in all areas where asbestos removal work is to be carried out. Completely cover floor with sheet plastic. Whether ceiling work is within 10 feet (3 m) of a wall extend the Secondary Barrier up wall to ceiling. Support plastic sheet on wall with duct tape, seal top of Secondary plastic to



Primary Barrier with duct tape so that debris is unable to get behind it. Provide cross strips of duct tape at wall support as necessary to support sheet plastic and prevent its falling during removal operations.

1. Install Secondary Barrier at the beginning of each work shift. Install only sufficient plastic for work of that shift.
2. Remove Secondary Barrier at end of each work shift or as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags. Keep the material on sheet continuously wet until bagged.
3. Install Walkways of black 6 mil (0.15 mm) plastic between active removal areas and decontamination units to protect Primary Layer from tracked material. Install walkways at the beginning of, and remove at the end of, each work shift.

3.2 WORKER PROTECTION:

- A. Before beginning work with any material for which a Material Safety Data Sheet has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be always used.

3.3 WET REMOVAL:

- A. Thoroughly wet to satisfaction of Owner's Representative ACM to be removed prior to stripping and/or tooling to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water or removal encapsulant. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for amended water or removal encapsulant to penetrate material thoroughly. If amended water is used, spray material repeatedly during the work process to maintain a continuously wet condition. If a removal encapsulant is used, apply in strict accordance with the manufacturer's written instructions. Perforate outer covering of any installation which has been painted and/or jacketed to allow penetration of amended water or removal encapsulant, or use injection equipment to wet material under the covering. Where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.
 1. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels.
 2. Remove saturated ACM in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to Wash Down Station adjacent to Material Decontamination Unit.
 3. Evacuate air from disposal bags with a HEPA filtered vacuum cleaner before sealing.
- B. Fireproofing or Architectural Finish on Wire Lath: Spray asbestos-containing fireproofing or architectural acoustic finish with a fine mist of amended water or removal encapsulant. Allow time for amended water or removal encapsulant to saturate material completely. Do not over-saturate to cause excess dripping. If the surface of material has been painted or otherwise coated cut small holes as required and apply amended water or removal encapsulant from above. Cut wire lath into manageable sections and cut hanger wires. Roll or fold up completely with ACM and hand place in container. Do not drop on the floor. After the removal of lath and ACM removed any residual



materials from decking and surrounding support members scheduled to remain. Use one of the following methods for containing waste.

1. Deposit material in corrugated paper board box. When box is full duct tape closed and placed in disposal bag.
2. Wrap material in felt and place in fiberboard drum lined with two disposal bags. Use caution to ensure that all edges of wire lath that could cut plastic are covered with felt.

3.4 DRY REMOVAL:

- A. Dry Removal: of ACM is not expected to be required for this project. Some areas of work may require dry removal of asbestos where wetting may create a hazard for workers or damage equipment or finishes. In the event these conditions are identified the following will be required.
1. Isolate dry removal area from balance of Work Area by a Critical Barrier as described in Section 01526 Temporary Enclosures and a pressure differential between the dry removal area and Work Area as described in Section 01523 Pressure Differential System.
 2. EPA Authorization: Do not begin dry removal work until authorized in writing by the EPA NESHAP coordinator and the Owner's Representative.
 3. OSHA Notification: Do not begin dry removal work until notification to OSHA required by 29 CFR 1926.1101(g) (4) (6) is made.
 4. Active Electrical Equipment: Do not wet materials in the vicinity of active electrical equipment. Dry remove any ACM in the vicinity of active electrical equipment.
 5. Restrict Access: Maintain existing access restrictions to areas with active electrical equipment. Allow access to the area only to qualified tradespeople with prior experience in the installation and repair of the equipment involved.
 6. Warning Signs: Post warning signs at the entry point to active electrical equipment as required by OSHA or other applicable regulations.
 7. Personnel: Work on active electrical equipment is to be performed by qualified tradespeople with prior experience in the installation or repair of the equipment involved. Restrict access to electrical equipment.
 8. Electrical Isolation: Cover exposed conductors with a minimum 1/8 inch (3 mm) thick neoprene blanket draped over the conductor and surrounding area.
 9. Protective Equipment: Provide workers working on or in the vicinity of active electrical with appropriate protective equipment including insulating gloves, boots, and non-conductive tools.
 10. Work Procedures: Perform removal work using "Localized Control of Material Release" and "Local Ventilation and Collection System" procedures described below.

END OF SECTION - 02081



SECTION 02084 - DISPOSAL OF REGULATED ASBESTOS-CONTAINING MATERIAL

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Worker protection requirements are set forth in Sections 01560 Worker Protection - Asbestos abatement
- B. Section 01098 Codes, Regulations and Standards - Asbestos Abatement describes applicable federal, state and local regulations.

1.3 DESCRIPTION OF THE WORK:

- A. This section describes the disposal of Regulated Asbestos-Containing Materials (RACM). Disposal includes packaging of Regulated Asbestos-Containing Materials.
- B. All asbestos waste generated from this project shall be disposed of at Cherry Island Landfill located in Wilmington, Delaware.

1.4 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittals are returned for unrestricted use.
 - 1. Copy of state or local license for waste hauler.
 - 2. The name and address of the landfill where Regulated Asbestos Containing Materials are to be buried. Include contact person and telephone number.
- B. On a weekly basis submit copies of all manifests and disposal site receipts to the Owner's Representative.
- C. Waste Shipment Record: Maintain a waste shipment record as required by the NESHAP regulation which indicates the waste generator, transporter, and disposal site, and which describes the nature, size, type of container, and form of asbestos waste. Submit to the Owner's Representative within 35 days of departure from the building.



PART 2 - PRODUCTS:

2.1 MATERIALS

- A. Disposal Bags: Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled with three labels with text as follows:

1. First Label: Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication standard:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING AIRBORNE
FIBERS IS
HAZARDOUS TO YOUR HEALTH

2. Second Label: Provide in accordance with U.S. Department of Transportation regulation on hazardous waste marking. 49 CFR parts 171 and 172. Hazardous Substances

RO/ASBESTOS WASTE
CLASS 9
HA2212-PG III

3. Third Label: Provide the name of the waste generator (Owner's name), the location from which the waste was generated and the names and addresses of the contractor and transporter. This label must be durable, able to repel dirt and moisture (e.g., permanent marker). Label must be placed directly on disposal bag(s) in a legible format. Peel and stick type labels are expressly prohibited.

PART 3 - EXECUTION

3.1 SEQUENCE

- A. Comply with the following sections during all phases of this work:
1. Section 01560 Worker Protection - Asbestos Abatement
 2. Section 01562 Respiratory Protection



3.2 GENERAL:

- A. All waste is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction.
- B. Liquid waste: Mix all liquid asbestos-containing waste or asbestos contaminated waste with a blade-able material so that it forms a blade-able (non-liquid) form and has the concurrence of the landfill operator prior to disposal.
- C. Load all adequately wet Regulated Asbestos-Containing Material in disposal bags or leak-tight containers. All materials are to be contained in one of the following
 1. Two 6 mil (0.15 mm) disposal bags or
 2. Two 6 mil (0.15 mm) disposal bags and a fiberboard drum
- D. Protect the interior of truck or dumpster with Critical and Primary Barriers as described in Section 01526 Temporary Enclosures.
- E. Carefully load containerized waste in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.
- F. Warning Signs: During loading and unloading mark dumpsters, receptacles and vehicles with a sign complying with requirements of the EPA NESHAP regulation (40 CFR Part 61), in a manner and location that a person can read the following legend:

DANGER
ASBESTOS DUST HAZARD
CANCER AND LUNG DISEASE HAZARD
Authorized Personnel Only
- G. Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to a sealed truck or dumpster.
- H. Do not transport disposal bagged materials on open trucks. Label drums with the same warning labels as bags. Treat drums that have been contaminated as Regulated Asbestos-Containing Material and dispose of in accordance with this specification.
- I. Advise the landfill operator or processor, at least ten days in advance of transport, of the quantity of material to be delivered.
- J. At disposal site unload containerized waste:
 1. At a disposal site, sealed plastic bags may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for re-bagging. Clean the entire truck and contents using procedures set forth in section 01711 Project Decontamination.
- K. Retain receipts from landfill for materials disposed of.
- L. At completion of hauling and disposal of each load submit copy of waste manifest, chain of custody form, and landfill receipt to Owner's Representative.

END OF SECTION - 02084



SECTION 02087 - RESILIENT FLOORING REMOVAL - AGGRESSIVE ASBESTOS ABATEMENT:

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division - 1 Specification Sections, apply to work of this section.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Asbestos abatement project requirements to be completed prior to start of the work of this section are set forth in the following sections:
 - 1. 01503 Temporary Facilities - Asbestos Abatement
 - 2. 01513 Temporary Pressure Differential & Air Circulation System
 - 3. 01526 Temporary Enclosures - Complete Work Except Delete Floor Plastic.
 - 4. 01527 - Regulated Areas
 - 5. 01560 Worker Protection - Asbestos Abatement
 - 6. 01562 Respiratory Protection
 - 7. 01563 Decontamination Units
- B. Asbestos abatement project requirements to be completed at completion of the work of this section are set forth in the following sections:
 - 1. 01711 Project Decontamination

1.3 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Representative for review. Do not start work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.
 - 1. Wetting Materials: Submit product data, use instructions and recommendations from manufacturer of wetting material (surfactant and/or removal encapsulant) intended for use. Include data substantiating that material complies with requirements.
 - 2. NESHAP Compliance Documentation: Submit manufacturer's documentation for removal encapsulants proposed for use that, to the extent required by this specification, the material, if used in accordance with manufacturer's instructions, will comply with the wetting requirements of National Emission Standard for Hazardous Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M).
 - 3. NESHAP Compliance Documentation: Submit written approval from the EPA NESHAP Coordinator, in compliance with applicable requirements of National Emission Standard



for Hazardous Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M), for the use of shot/bead blast equipment for adhesive removal.

4. Plan of Action for Dry Ice Use: Submit a plan of action as required by this section for protection of workers from carbon dioxide and cold hazards associated with use of dry ice. Testing and protective measures proposed are to be certified by a Certified Industrial Hygienist (CIH) as defined in Section 01097 "Definitions & Standards - Asbestos Abatement".
 5. Adhesive Removal Solvent: Submit product data, use instructions and recommendations from manufacturer of adhesive removal solvent intended for use. Include data substantiating that material complies with requirements.
- B. Before Start of Work submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal has been "Received - Not Reviewed."
1. Material Safety Data Sheet: Submit Material Safety Data Sheets, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for all materials proposed for use on the work including:
 - a. Surfactants.
 - b. Adhesive Removal Solvents.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Wetting Materials: For wetting prior to disturbance of asbestos-containing materials use:
1. Amended Water: Provide water to which a surfactant has been added. Use a mixture of surfactant and water which results in wetting of the asbestos-containing material (ACM) and retardation of fiber release during disturbance of the material equal to or greater than that provided using one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons (19 liters) of water.
 2. Removal Encapsulant: Provide a penetrating-type encapsulant designed specifically for removal of ACM. Use a material which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by water amended with a surfactant consisting of one ounce of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons (19 liters) of water.
 3. Dishwashing detergent contains anionic, nonionic, and amphoteric surfactants.
- B. Tile Adhesive Removal Solvent: Provide a slow-drying solvent intended to remove tile adhesive. Providing material that is not flammable, does not create combustible vapors and has no significant inhalation hazard.
1. Provide materials that have less than 250 g/l of volatile organic solvents (VOCs).



- C. Polyethylene Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mil (0.15 mm) thick, clear, frosted, or black as indicated.
- D. Duct Tape: Provide duct tape in 2 inch or 3-inch (50 or 75 mm) widths as indicated, with an adhesive formulated for use on sheet polyethylene.
- E. Spray Cement: Provide, in aerosol cans, spray adhesive which is formulated for use on sheet polyethylene. Provide materials that do not contain methylene chloride.
- F. Disposal Bags: Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags labeled as required by Section 02084 Disposal of Regulated Asbestos-Containing Material.
- G. Fiberboard Drums: Provide heavy duty leak-tight fiberboard drums with tight sealing locking metal tops.
- H. Paper board Boxes: Provide heavy-duty corrugated paperboard boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.
- I. Polyethylene Boxes: Provide heavy-duty polyethylene boxes. Provide leak-tight boxes or boxes in sizes that will easily fit in disposal bags.

2.2 PRIMARY RESILIENT FLOORING REMOVAL EQUIPMENT

- A. Manual Spades:
 - 1. Hand operated scraper/chisels with long handles and replaceable blades for removal of resilient flooring.
- B. Powered Spades:
 - 1. Long-handled scraper/chisels used in a full-standing position that have replaceable blades and are pneumatically or electrically powered to move in a reciprocating (in and out) motion.
 - 2. Provide powered spades that are equipped with pneumatic vents and piston seals that prevent compressed air or blow by from sweeping floor.

PART 3 - EXECUTION

3.1 RESILIENT FLOOR COVERINGS:

- A. Pre-requisite activities: Before starting removal of ACM using the procedures of this section complete work of the following sections:
 - 1. 01503 Temporary Facilities - Asbestos Abatement
 - 2. 01513 Temporary Pressure Differential & Air Circulation System
 - 3. 01526 Temporary Enclosures - Complete work except deleted floor plastic.
 - 4. 01527 - Regulated Areas



5. 01560 Worker Protection - Asbestos abatement
6. 01562 Respiratory Protection
7. 01563 Decontamination Units
- B. Preparation: Prior to beginning the removal of any resilient floor covering completely the following:
 1. Remove appliances and furniture from the work area.
 2. Mix a detergent solution (16 ounces (0.5 liters) of liquid dishwashing detergent to 1 gallon (4 liters) of warm water) and pour into a garden sprayer.
- C. Seal Floor Penetrations: Before using wet methods to remove resilient flooring seal openings, and penetrations in the floor to prevent water leakage.
 1. Remove surface mounted junction boxes (doghouses) from the sewer system.
 2. Remove hatch and trench covers that are covered with resilient flooring. Seal opening with plywood. Seal the edges of plywood to floor with urethane foam caulk. Remove resilient flooring from cover in a later operation during wet removal of flooring.
 3. Seal openings with a wooden or plywood plug. Seal with urethane foam caulk.
 4. Remove flooring material in the immediate area of floor penetrations with a hand spade or scraper.
 5. Remove adhesive by hand scraping as necessary to permit installation of seals.
 6. Remove any adhesive residue from the slab where cover on openings and penetrations must seal to floor to accomplish a watertight assembly. Remove this residue by abrasion using dampened, clean, and sharp, cutting sand and a hand-held rubbing stone as necessary. Use minimum wetting required to permit removal. Use caution to prevent water leakage into opening or penetration.
 7. Cover sealed plywood hatch assemblies with 6 mil sheet plastic. Seal plastic to floor with spray glue or urethane caulk.
 8. Cover sealed openings with sheet plastic. Seal plastic to floor with spray glue or urethane caulk.
- D. Remove Resilient Flooring: Use the three-step process described in the following sections:
 1. First Step: "Removal of Resilient Tile Floor Covering," and/or "Removal of Resilient Sheet Flooring." This step involves removal of tiles or the wear layer of sheet flooring using a powered spade.
 2. Second Step: "Removal of Heavy Residue of Adhesive" and/or "Removal of Residual Backing." This step involves the use of a rotary cutter to remove the bulk of these residual materials. As an alternative hand scraping can be used for this purpose.
 3. Third Step: "Removal of Adhesive Residue." After completion of the first two steps there will be a thin residue of adhesive left on the floor.
 4. At the completion of all work, leave the substrate in such a state as to comply with all requirements and recommendations of manufacturer of replacement flooring.



3.2 STEP ONE REMOVAL OF RESILIENT TILE FLOOR COVERING:

A. Remove resilient tile floor covering using the following procedure:

1. General:

- a. Remove binding strips or other restrictive molding from doorways, walls, etc. clean and dispose of as non-asbestos waste. Dispose of any materials that have glue or floor mastic on them as asbestos-containing waste.

2. Wet Floor:

- a. Wet floor with amended water, removal encapsulant, or detergent solution, so that the entire surface is wet. Do not allow you to puddle or run off to other areas. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Cover with sheet polyethylene to allow humidity to release tile from floor. Allow time for humidity and water or removal encapsulant to loosen tiles prior to removal.
- b. Keep the floor continuously wet throughout removal operation.
- c. Remove tiles using a manual or powered spade. Continuously mist floor in area where machine is working with amended water, removal encapsulant or detergent solution. Wet any debris generated as necessary to keep continuously wet. Keep floor where tile has been removed continuously wet until after completion of heavy adhesive residue removal.

B. Debris and Waste

1. Dispose of all friable materials in accordance with Section 02084 Disposal of Regulated Asbestos containing Material. Dispose of Category I non-friable waste in accordance with State and Local Regulations.
2. Pick up whole tiles, stack them in boxes or wrap them in felt, and place in labeled disposal bags. At the Contractor's option tiles may be placed directly into durable leak-tight containers.
3. Shovel broken tiles and debris into cardboard boxes that are placed in a disposal bag.
4. Place bagged waste in a second disposal bag during decontamination and dispose of waste as required by Section 02084 Disposal of Regulated Asbestos-Containing Material.

3.3 STEP TWO - REMOVAL OF HEAVY RESIDUE OF ADHESIVE:

A. Remove the heavy residue of adhesives after removal of resilient tile flooring using the following procedure.

1. Dampen Floor

- a. Dampen floor by misting with amended water, removal encapsulant, or detergent solution so that entire surface is wet. Do not allow you to puddle or run off to other areas. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions.



- b. Keep the floor continuously damp throughout removal operation.
 2. Adhesive Removal:
 - a. Begin removal at a point farthest from the entrance to the work area. Work of this step may proceed concurrently with the work of removal of tile.
 - b. Remove heavy residue of adhesive backing. Continuously mist floor in area of work with amended water, removal encapsulant or detergent solution. Wet any debris generated as necessary to keep continuously wet.
 3. Disposal and Debris
 - a. Dispose of all friable materials in accordance with Section 02084 Disposal of Regulated Asbestos containing Material. Dispose of Category I non-friable waste in accordance with State and Local Regulations.
 4. Wet vacuum standing water with HEPA wet/dry vacuum.
 5. Mop floor with amended water, removal encapsulant, or liquid detergent solution to remove all debris and residue.
 6. Continue the above steps until the adhesive is sufficiently removed to a point where a bulk sample cannot be taken of the adhesive material.
 7. Start in the corner of the room farthest from the entrance door and moisten an area of the adhesive approximately 5 by 10 feet with amended water, removal encapsulant, or detergent solution. Wet scrape with a stiff-bladed wall or floor scraper removing ridges and any loose adhesives until only a thin smooth film remains. Where deposits are heavy or difficult to scrape, heat with a hot-air blower prior to scraping.
 - a. Dispose of all friable materials in accordance with Section 02084 Disposal of Regulated Asbestos Containing Material. Dispose of Category I non-friable waste in accordance with State and Local Regulations.
 8. Wet vacuum standing water with HEPA wet/dry vacuum.
 9. Mop floor with amended water, removal encapsulant, or liquid detergent solution to remove all debris and residue.
 10. Continue the above steps until the adhesive is sufficiently reduced in thickness that it can be effectively removed.

3.4 STEP THREE - ADHESIVE SOLVENT:

- A. Adhesive: Remove adhesive residue by using adhesive removal solvents. Use solvents in accordance with manufacturers' instructions. Saturate adhesive with removal solvent and allow adhesive to soften. Remove by scraping, or wet scrub with floor cleaning machine with abrasive pad. Provide worker protection as required by material safety data sheet (MSDS) for any material used.
 1. Mop floor with removal solvent as required by manufacturer's directions as required to completely remove all residue of adhesive.



2. Clean Floor after completion of removal of ACM by wet mopping with amended water. Mop three times allowing a drying time between each mopping.
 3. Encapsulate cleaned floor with one coat of an encapsulant. Use an encapsulant that has been determined not to prevent the bond of new resilient flooring. Follow the manufacturer's recommendations for new floor installation.
 4. Dispose of all rags, plastic sheet, etc. in accordance with requirements of Section 02084 "Disposal of Regulated Asbestos-Containing Material".
- B. Decontaminate Equipment: After the completion of all work, decontaminate all equipment and machinery used for the work of this section. Accomplish decontamination as required by the section on Project Decontamination.

3.5 WORK AREA CLEARANCE:

- A. After completion of all resilient flooring and adhesive removal work and prior to removal of critical barriers, decontamination units, and shut down of pressure differential and ventilation system; complete project decontamination and clearance in accordance with section 01711 "Project Decontamination."

END OF SECTION 02087



STATE OF DELAWARE
Department of Finance
Division of Revenue

ACTIVE BUSINESS LICENSE
1993108790

EFFECTIVE	01/01/2025 - 12/31/2027
ISSUED TO	HARVARD ENVIRONMENTAL INC 760 PULASKI HWY BEAR DE 19701-5200
LOCATION	HARVARD ENVIRONMENTAL INC 760 PULASKI HWY BEAR, DE 19701-5200
TRADE, BUSINESS, OR PROFESSIONAL ACTIVITY	GENERAL SERVICES

ISSUED: 11/24/2024
FEE PAID: \$225.00

Is hereby licensed to practice, conduct, or engage in the occupation or business activity indicated above in accordance with the license application duly filed pursuant to Title 30, Delaware Code.

POST CONSPICUOUSLY - NOT TRANSFERABLE

2027

STATE OF DELAWARE

THIS CERTIFIES THAT

HARVARD ENVIRONMENTAL, INC.

Has satisfactorily completed the requirements prescribed by the Office of Management & Budget as an Asbestos Professional Service Firm this

Seventeenth Day of February Two Thousand Twenty-Five

This certification is valid for one (1) year to perform asbestos services within the State of Delaware.

This certification shall be proof that the above named Contractor has met the minimum requirements established by the State of Delaware for temporary certification. It is not intended as an overall endorsement of the Contractor's ability to provide services of varying size and shape. It does not endorse the methods and types of respiratory protection used by the Contractor.

Contractor's Address: 760 Pulaski Highway
Bear, DE 19701

Expiration Date: February 17, 2026

Certification Number: PS-54

Director
Division of Facilities Management



Certificate of Completion

awarded to

Wesley J. T. Morrison

for successfully completing the prescribed course of study in

Pennsylvania Asbestos Project Designer Refresher Course

under TSCA Title II, Virtual Teleconference

presented by

ACCESS TRAINING SERVICES, INC
7921 River Road, Pennsauken NJ 08110

5/16/25

Course Date

N/A

Exam Date

5/16/26

Expiration Date

N/A

Social Security Number

ACC-0525-10-006

Certificate Number

Mark K. Schlager
Training Director

OPERATOR PROJECT #		POSTMARK	DATE RECEIVED	NOTIFICATION #	
I. TYPE OF NOTIFICATION (O-Original R-Revised C-Canceled):					
II. FACILITY INFORMATION (identify owner, removal contractor, and other operator)					
OWNER NAME:					
ADDRESS:					
CITY:			STATE:	ZIP:	
CONTACT:			TEL:		
REMOVAL CONTRACTOR:					
ADDRESS:					
CITY:			STATE:	ZIP:	
CONTACT:			TEL:		
OTHER OPERATOR:					
ADDRESS:					
CITY:			STATE:	ZIP:	
CONTACT:			TEL:		
III. TYPE OF OPERATION (D-Demo O - Ordered Demo R - Renovation E - Emergency Renovation):					
IV. IS ASBESTOS PRESENT? (Yes/No)					
V. FACILITY DESCRIPTION (Include building name, number and floor or room number)					
BLDG NAME:					
ADDRESS:					
CITY:			STATE:	ZIP:	
SITE LOCATION:					
BUILDING SIZE:		# OF FLOORS:		AGE IN YEARS:	
PRESENT USE:			PRIOR USE:		
VI. PROCEDURE, INCLUDING ANALYTICAL METHOD, IF APPROPRIATE, USED TO DETECT THE PRESENCE OF ASBESTOS MATERIAL:					
VII. APPROXIMATE AMOUNT OF ASBESTOS, INCLUDING: 1. REGULATED ACM TO BE REMOVED 2. CATEGORY I ACM NOT REMOVED 3. CATEGORY II ACM NOT REMOVED		RACM TO BE REMOVED	NONFRIABLE ASBESTOS MATERIAL NOT TO BE REMOVED		INDICATE UNIT OF MEASUREMENT BELOW
			CAT I	CAT II	UNIT
PIPE					Ln Ft: Ln m:
SURFACE AREA					Sq Ft: Sq m:
VOL RACM OFF FACILITY COMPONENT					Cu Ft: Cu m:
VIII. SCHEDULED DATES ASBESTOS REMOVAL (MM/DD/YY) Start:			Complete:		
IX. SCHEDULED DATES DEMO/RENOVATION (MM/DD/YY) Start:			Complete:		

X. DESCRIPTION OF PLANNED DEMOLITION OR RENOVATION WORK, AND METHOD(S) TO BE USED:		
XI. DESCRIPTION OF WORK PRACTICES AND ENGINEERING CONTROLS TO BE USED TO PREVENT EMISSIONS OF ASBESTOS AT THE DEMOLITION AND RENOVATION SITE:		
XII. WASTE TRANSPORTER #1		
ADDRESS:		
CITY:	STATE:	ZIP:
CONTACT:		TEL:
WASTE TRANSPORTER #2		
ADDRESS:		
CITY:	STATE:	ZIP:
CONTACT:		TEL:
XIII. WASTE DISPOSAL SITE		
NAME:		
LOCATION:		
CITY:	STATE:	ZIP:
TELEPHONE:		
XIV. IF DEMOLITION ORDERED BY A GOVERNMENT AGENCY, PLEASE IDENTIFY THE AGENCY BELOW:		
NAME:		TITLE:
AUTHORITY:		
CITY:	STATE:	ZIP:
DATE OF ORDER (MM/DD/YY)		DATE ORDERED TO BEGIN (MM/DD/YY)
XV. FOR EMERGENCY RENOVATIONS		
Date and Hour of Emergency (MM/DD/YY):		
Description of the Spilled/Unexpected Event:		
Explanation of how the event caused unsafe conditions or would cause equipment damage or an unreasonable financial burden:		
XVI. DESCRIPTION OF PROCEDURES TO BE FOLLOWED IN THE EVENT THAT UNEXPECTED ASBESTOS IS FOUND OR PREVIOUSLY NONFRIABLE ASBESTOS MATERIAL BECOMES CRUMBLED, PULVERIZED, OR REDUCED TO POWDER.		
XVII. I CERTIFY THAT AN INDIVIDUAL TRAINED IN THE PROVISIONS OF THIS REGULATION (40 CFR PART 61, SUBPART M) WILL BE ON SITE DURING THE DEMOLITION OR RENOVATION AND EVIDENCE THAT THE REQUIRED TRAINING HAS BEEN ACCOMPLISHED BY THIS PERSON WILL BE AVAILABLE FOR INSPECTION DURING NORMAL BUSINESS HOURS. (Required 1 year after promulgation)		
_____ (Signature of Owner/Operator)		_____ (Date)
XVIII. I CERTIFY THAT THE ABOVE INFORMATION IS CORRECT.		
_____ (Signature of Owner/Operator)		_____ (Date)



ASBESTOS POLICY AND PROCEDURES

Effective Date: April 1, 1995

Revised: April 15, 2002

The Department of Natural Resources and Environmental Control ("DNREC") and the Delaware Solid Waste Authority ("DSWA") have established the following Policy concerning the handling and disposal of Asbestos-Containing Material ("ACM").

ANY TYPE OF ASBESTOS-CONTAINING MATERIAL MAY BE TRANSPORTED TO AN AUTHORIZED ASBESTOS LANDFILL OUT-OF-STATE, OR DISPOSED OF AT AN APPROVED DSWA FACILITY.

Asbestos-Containing Material to be landfilled out of state:

The asbestos material must be packaged in accordance with State of Delaware regulations or the regulations of other affected states, whichever are the more stringent. Furthermore, the out of state destination must be approved by DNREC⁴ as part of the permitting procedure for a transporter Permit.

Asbestos-Containing Material to be landfilled in Delaware:

Friable¹ asbestos material must be wetted, packaged in leak-proof containers and labeled in accordance with DNREC regulations. This material may be landfilled at the Northern Solid Waste Management Center, **only**. The DSWA charges a special disposal fee for this material.

Category I **non-friable** Asbestos-Containing Material ACM and Category II **non-friable** Asbestos-Containing Material ACM may be landfilled at any of the Delaware Solid Waste Authority Facilities at DSWA's standard disposal fee with the following packaging requirements:

Northern Solid Waste Management Center: Category I **non-friable** ACM² must be wetted and may be removed and transported in covered dumpsters or trucks and landfilled unpackaged in the designated asbestos disposal area. Category II **non-friable** ACM³ must be wetted and packaged in sealed, leakproof clear plastic wrap and labeled as asbestos. At the landfill it must be placed in the designated asbestos disposal area. Disposal of **bulk** shipments of Category I & II **non-friable** asbestos will be accepted at the Northern Solid Waste Management Center **only**.



Central and Southern Solid Waste Management Centers: Category II ***non-friable*** ACM³ destined for these Facilities must be wetted and packaged in sealed, leak-proof clear plastic wrap, and labeled as asbestos. At the landfill, it must be placed in a roll-off container specifically dedicated for this purpose. Category I ***non-friable*** ACM² may be transported to these Facilities *unpacked* in a covered vehicle, and off-loaded into a roll-off container specifically dedicated for this purpose.

ASBESTOS POLICY AND PROCEDURES

Packaging of Category I, ***non-friable*** ACM² in the same manner as Category II non-friable ACM³ is preferred but is not required.

In order to be exempt from the packaging requirements, any ACM classified and handled as Category I ***non-friable*** ACM² must be certified as such by a licensed Delaware Certified Professional Service Firm. This certification shall include a description of the material, where the sample originated, and the date the material was sampled. This certification must be sent along with the **NOTIFICATION OF DEMOLITION/RENOVATION** to the Department of Natural Resources and Environmental Control. A copy of the Category I, ***non-friable*** ACM² certification must accompany the material to the landfill. All ACM must be removed by a licensed Delaware Asbestos Abatement Contractor, unless a written waiver has been issued by the Department of Natural Resources and Environmental Control, Air Quality Management Section, Engineering and Compliance Branch. A copy of this waiver must accompany the material to the landfill.

In addition to the above requirements, disposal of all asbestos material at DSWA Facilities is subject to the DSWA Asbestos Disposal Procedures, which require at least 24-hour prior notice to the landfill of any deliveries of asbestos.

¹***Friable*** asbestos material means any material containing more than one (1) percent asbestos, as determined using the method specified in Appendix A, Subpart F, 40 CFR, Part 763, Section I, *Polarized Light Microscopy*, that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure. If the asbestos content is less than ten (10) percent, as determined by a Method other than point-counting by *Polarized Light Microscopy* ("PLM"), verify the asbestos content by point-counting using "PLM."

²Category I ***non-friable*** Asbestos-Containing Material ("ACM") means asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than one (1) percent asbestos, as determined using the method specified in Appendix A, Subpart F, 40 CFR, Part 763, Section I, *Polarized Light Microscopy*.

³Category II ***non-friable*** Asbestos-Containing Material ("ACM") means any material, excluding Category I, ***non-friable*** ACM, containing more than one (1) percent asbestos as determined using the methods



specified in Appendix A, Subpart F, 40 CFR, Part 763, Section I, *Polarized Light Microscopy* ("PLM") that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

NOTE: asphalt/vinyl floor tiles, mastic/adhesive, transite materials and house siding are considered Category II materials.

⁴Homeowners are exempt from this requirement.

Modification Synopsis

March 18, 2002: The Asbestos Policy was modified to allow for the removal of category non-friable ACM by a general contractor, provided a licensed Delaware certified Professional Service firm has certified that the material is Category I non-friable ACM. A written waiver would be issued by the Department of Natural Resources and Environmental Control, Air Quality Management Section, Engineering and Compliance Branch to allow for this.



**DSWA ASBESTOS DISPOSAL PROCEDURE
FOR
FRIABLE ASBESTOS CONTAINING MATERIAL (ACM) ***

This procedure shall become effective April 1, 1995. Friable ACM will be accepted at the Northern Solid Waste Management Center (NSWMC), Cherry Island Landfill provided that the following procedure is followed:

1. The waste must be generated in the State of Delaware
2. A copy of the Authority's Asbestos Disposal Form/Waste Shipment Record, properly filled out, must accompany each asbestos load for our records. This is to be delivered to the weigh master at the scale house with each load and verified by the Landfill Asbestos Inspector.
3. The Authority must be contacted at least twenty-four (24) hours prior to delivery to the landfill for an appointment. Notification should be made by calling (302) 764-2732 or (302) 577-4457. If you cannot make your scheduled appointment, please call immediately and reschedule.
4. Asbestos will be accepted from 7:00 a.m. to 3:00 p.m. Monday through Friday only. Unloading must be completed by 4:00 p.m.
5. The asbestos must be packaged in accordance with all applicable local, state and federal regulations. The minimum packaging requirements are as follows:
 - a. Asbestos must be thoroughly wetted and double bagged in 6-mil plastic bags, or plastic-lined cardboard, or drums. All packaging must be sealed with duct tape or equivalent waterproof tape.
 - b. All packaging must be clearly and prominently labeled with the following two messages.

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AND
WASTE GENERATOR'S NAME AND ADDRESS**

The authority may reject any asbestos waste which, in its sole opinion, is not properly wet, packaged, or is contained in damaged packaging.

6. Upon arrival, the customer must notify the weighmaster at the scale that the load is asbestos containing material.
7. Asbestos waste must be unloaded by the customer at a location and in a manner as directed by the Asbestos Inspector.
8. NO DIRECT TRUCK DUMPING WILL BE PERMITTED (except as specified below). Asbestos packaging must be hand unloaded onto the ground such that the packaging is not damaged.
9. PROPER PROTECTIVE EQUIPMENT MUST BE WORN. Personnel unloading the asbestos



Packaging must wear proper protective equipment including disposable head, body, and foot protection. Minimum respiratory protection of half-face, air purifying, dual-cartridge respirators with high-Efficiency filters will be required.

10. All vehicles carrying asbestos, except for homeowners, must display a placard while unloading asbestos to read as follows:

**DANGER
ASBESTOS DUST HAZARD
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

Violation of these procedures will not be allowed. Violators may be denied use of the Cherry Island Landfill for asbestos' disposal.

If all the above-described procedures are followed, the customer will be charged the current asbestos disposal user fee as established by DSWA.

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

NOTE: This Document has been recreated for purposes of legibility.



**DSWA ASBESTOS DISPOSAL PROCEDURE
FOR
CATEGORY I NON-FRIABLE ASBESTOS CONTAINING MATERIAL (ACM) ***

This procedure shall become effective April 1, 1995. Category I non-friable ACM will be accepted at the Northern Solid Waste Management Center (NSWMC), Cherry Island Landfill provided that the following procedure is followed:

1. The waste must be generated in the State of Delaware
2. A copy of the Authority's Asbestos Disposal Form/Waste Shipment Record, properly filled out, and the Category I non-friable ACM certificate must accompany each asbestos load for our records. This is to be delivered to the weighmaster at the scalehouse with each load and verified by the landfill Asbestos inspector.
3. The Authority must be contacted at least twenty-four (24) hours prior to delivery to the landfill for an appointment. Notification should be made by calling (302) 764-2732 or (302) 577-3457. If you cannot make your scheduled appointment, please call immediately and reschedule.
4. Asbestos will be accepted from 7:00 a.m. to 3:00 p.m. Monday through Friday only. Unloading must be completed by 4:00 p.m.
5. All dumpsters containing Category I non-friable ACM must be wet and covered.
6. Upon arrival, the customer must notify the weighmaster at the scale that the load is asbestos containing material.
7. Friable or Category II non-friable ACM shall not be mixed with Category I non-friable ACM.
8. Asbestos waste must be unloaded by the customer at a location and in a manner as directed by the Asbestos Inspector.
9. Direct truck dumping will be permitted only for Category I non-friable ACM.
10. All vehicles carrying asbestos, except for homeowners, must display a placard while loading and unloading asbestos to read as follows:

**DANGER
ASBESTOS DUST HAZARD
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

If all the above-described procedures are followed, the customer will be charged the current municipal solid waste user fee as established by DSWA for each facility.

* Category I non-friable Asbestos-Containing Material (ACM) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one (1) percent asbestos, as determined using the method specified in Appendix A, Subpart F, 40 CFR, part 763, Section 1, *Polarized Light Microscopy*.

Note: This document has been recreated for purposes of legibility.



**DSWA ASBESTOS DISPOSAL PROCEDURE
FOR
CATEGORY II NON-FRIABLE ASBESTOS CONTAINING MATERIAL (ACM) ***

This procedure shall become effective April 1, 1995. Category II non-friable ACM will be accepted at the Northern Solid Waste Management Center (NSWMC), Cherry Island Landfill provided that the following procedure is followed:

1. The waste must be generated in the State of Delaware
2. A copy of the Authority's Asbestos Disposal Form/Waste Shipment Record, properly filled out, must accompany each asbestos load for our records. This is to be delivered to the weigh master at the scale house with each load and verified by the Landfill Asbestos Inspector.
3. The Authority must be contacted at least twenty-four (24) hours prior to delivery to the landfill for an appointment. Notification should be made by calling (302) 764-2732 or (302) 577-3457. If you cannot make your scheduled appointment, please call immediately and reschedule.
4. Asbestos will be accepted from 7:00 a.m. to 3:00 p.m. Monday through Friday only. Unloading must be completed by 4:00 p.m.
5. All asbestos must be wet and packaged in leak-proof clear plastic wrap or bags with a minimum of two (2) independent layers of 6 mil. plastic, sealed with duct tape or equivalent waterproof tape, and labeled with the following two messages:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
AND
WASTE GENERATOR'S NAME AND ADDRESS

Any other type of container must first receive approval from the DSWA.

The authority may reject any asbestos waste which, in its sole opinion, is not properly wet, packaged, or is contained in damaged packaging.

6. Upon arrival, the customer must notify the weighmaster at the scale that the load is asbestos containing material.
7. Friable ACM shall not be mixed with Category II non-friable ACM.
8. Asbestos waste must be unloaded by the customer at a location and in a manner as directed by the Asbestos Inspector.
9. NO DIRECT TRUCK DUMPING WILL BE PERMITTED (except as specified below). Asbestos packaging must be hand unloaded onto the ground such that the packaging is not damaged.



Packaging too heavy or large for hand unloading may be mechanically unloaded provided the packaging is sufficient so that it is not damaged during unloading. Mechanical unloading is allowed only for asbestos containing material (ACM) too large for conventional double-bagging or fiberboard drums (e.g. large

transite panels; boilers). Packaging more typical ACM in large containers to avoid the hand unloading procedure will not be allowed.

10. All vehicles carrying asbestos, except for homeowners, must display a placard while unloading asbestos to read as follows:

**DANGER
ASBESTOS DUST HAZARD
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY**

If all the above-described procedures are followed, the customer will be charged the current municipal solid waste user fee as established by the DSWA for each facility.

- * Category II non-friable asbestos-containing material (ACM) means material, excluding Category I non-friable ACM, containing more than one (1) percent asbestos, as determined using the method specified in Appendix A, Subpart F, 40 CFR, part 763, Section 1, *Polarized Light Microscopy*, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure

Note: asphalt/vinyl floor tiles, mastic/adhesive, transite materials and house siding are considered Category II materials.

NOTE: This Document has been recreated for purposes of legibility.



DSWA Manifest # _____

DELAWARE SOLID WASTE AUTHORITY

Please

Check one: NSWMC _____ CSWMC _____ SSWMC _____
Cherry Island Sandtown Jones Crossroads
(302) 764-2732 (302) 284-3933 (302) 875-2004

ASBESTOS DISPOSAL FORM/WASTE SHIPMENT RECORD

Type of Asbestos: Friable _____ Cat I Non-Friable _____ Cat II Non-Friable _____
Removal Contractor License: Class A _____ Class B _____ Homeowner _____
Removal Contractor: _____
Address: _____
City: _____ State: _____ Zip: _____ Phone: () _____ - _____
Building Name: _____ Building Owner (Generator): _____
Building Address: _____
City: _____ State: _____ Zip: _____ Phone: () _____ - _____
Type of Asbestos Packaging: _____ Number of Containers: _____
Total Quantity: _____ Cubic Yards _____
Was Asbestos Wetted Before Packaging? _____ Yes _____ No _____
Are Containers Labeled as Asbestos? _____ Yes _____ No _____
I Hereby Certify the Above Information Is True and Correct:
Site Contact (Job Supervisor) Signature: _____ Date: _____
Hauler Name: _____ Phone Number: () _____ - _____
Address: _____
Driver's Signature: _____ Date: _____

1. Friable asbestos material means any material containing more than one (1) percent asbestos, as determined using the method specified in Appendix A, Subpart F, 40 CFR, Part 763, Section 1, *Polarized Light Microscopy*, that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than (10) ten percent, as determined by a method other than point counting by Polarized Light Microscopy (PLM), verify the asbestos content by point counting using PLM.

2. Category I non-friable Asbestos-Containing Material (ACM) means asbestos-containing packing, gaskets resilient floor coverings, and asphalt roofing products containing more than one (1) percent asbestos, as determined using the method specified in Appendix A, Subpart F, 40 CFR, part 763, Section 1, *Polarized Light Microscopy*.

3. Category II non-friable Asbestos-Containing Material (ACM) means any material, excluding Category I non-friable ACM, containing more than one (1) percent asbestos as determined using the methods specified in Appendix A, Subpart F, 40 CFR, Part 763, Section 1, *Polarized Light Microscopy*, that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

NOTE: asphalt/vinyl floor tiles, mastic/adhesive, transite materials and house siding are considered Category II Material.

4. As defined by the Department of Administrative Services, Division of Facilities management, Regulation governing the State of Delaware contractor/supervisor/worker asbestos training and certification program and training/certification for asbestos professional services.



DSWA USE ONLY

Category I non-friable ACM Certification - _____ Yes _____ No

Does Vehicle Have Placard? _____ Yes _____ No

Asbestos Handler Name: _____ Certification # _____

Asbestos Handler Name: _____ Certification # _____

Asbestos Handler Name: _____ Certification # _____

Asbestos Handler Name: _____ Certification # _____

Discrepancy Indication Space: _____

Asbestos Inspector: _____

Disposal Date: _____ DSWA Ticket Number: _____

Tonnage: _____ Weighmaster: _____

NOT FOR BIDDING PURPOSES