

**Clarkfield School
2019 Asbestos Removal
1201 – 11th Avenue
Clarkfield, MN 56223**

Issue Date: August 14, 2019

Yellow Medicine County Schools

**Project Designer: Jim Lindahl
IEA, Inc.
9201 West Broadway North, Suite 600
Brooklyn Park, MN 55445**

763-315-7900 ☎ 800-233-9513

IEA Project #201910734

SECTION 00001

Project Title Page

Issue Date: August 14, 2019

Project: Clarkfield School
2019 Asbestos Removal

Project Number: 201910734

Bid Date: August 29, 2019

Bid Time: 1:30 p.m.

Owner: Yellow Medicine County Schools
180 – 8th Avenue
Granite Falls, MN 56241

Project Designer: Jim Lindahl

* END OF SECTION 00001 *

SECTION 00005

Certifications Page

EXPLANATION OF FORMAT

This Project Manual is based on the National Institute of Building Sciences Model Guide Specifications, Asbestos Abatement and Management in Buildings, Third Edition. This Project Manual is consistent with the American Institute of Architects Service Corporation MASTERSPEC, and the sections are arranged according to the Construction Specifications Institute's MASTERFORMAT, 1988 Edition. Standard forms from the American Institute of Architects are bound into the Project Manual for use as Contract Documents.

PREPARATION OF PROJECT MANUAL

This manual was prepared by:

Jim Lindahl

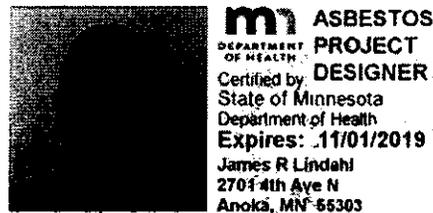
Name



Signature

AD2333

MDH Asbestos Project Designer Accreditation Number



Director, Env Health Div.

No AD2333

Issued: 11/07/2018

SECTION 00010

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SECTION 00015

List of Drawings

GENERAL

The following Drawings are hereby made a part of the Contract Documents, whether bound with this manual or included separately, by reference.

Drawings are for visual effect and reference only and may be used to locate elements described in the narrative Summary of the Work in Section 01013, to guide site inspection, and to facilitate planning and scheduling. No inference shall be drawn from any quantity, dimension, detail or description on the Drawings as to the exact or actual extent of the Work of this project.

See Prints (separate documents)

◆ SCHEDULE OF DRAWINGS

<u>Sheet Number</u>	<u>Description</u>
3	First Floor Plan
4	Second Floor Plan

*** END OF SECTION 00015 ***

SECTION 00100

Advertisement for Bids

The Work of this project is specifically identified in Section 01013 - Summary of Work and in the Drawings, and includes:

The removal of asbestos-containing pipe insulation and mudded fittings, ceiling tile adhesive, 9" x 9" floor tile, 12" x 12" floor tile, duct insulation, black flooring mastic, insulation panel adhesive, water holding tank, Tackboard and chalkboard adhesives, roof base flashing, windowsill caulking, and exterior wall caulking.

The project is expected to begin on or about Monday, September 23, 2019, and be completed by Thursday, October 24, 2019.

Specifications, including Bid Form, are available from:

IEA, Inc.
9201 West Broadway North, Suite 600
Brooklyn Park, MN 55445
Phone: 763-315-7900

There is a twenty-five dollar (\$25.00) non-refundable charge for each copy of the specification. Please direct all questions or information to Jim Lindahl at the number above.

The Owner has arranged for a mandatory pre-bid site visit and conference to be held on Thursday, August 22, 2019, at 9:30 a.m.. Bidders shall meet at the north side of Clarkfield School. This is the only time site visits will be permitted by the Owner.

All bids must be properly executed on the Bid Form supplied for that purpose and submitted in a sealed envelope with the bid opening date and time and name of bidder along with the address of the Owner and the following identification on the front of the envelope:

"Clarkfield School – 2019 Asbestos Removal"

and delivered to:

Ms. Janel Timm
Property & Public Service Director
Yellow Medicine County Schools
180 – 8th Avenue
Granite Falls, MN 56241
Phone: 320-564-3132
E-Mail: janel.timm@co.ym.mn.gov

no later than 1:29 p.m., on August 29, 2019.

Bids will be opened before the public at this time.

Owner reserves the right to reject any and all bids.

*** END OF SECTION 00100 ***

SECTION 00200

Instructions to Bidders

AIA Document A701, Instructions to Bidders, 1997 Edition, Articles 1 through 8, inclusive, is hereby made a part of the Contract Documents.

A copy of AIA Document A701 is attached. IEA, Inc. is a member of the American Institute of Architects (AIA), and the original AIA Document for this project was produced utilizing *AIA Contract Documents: Electronic Format*, under Order Number 9980702716. This document is provided for the Contractor's reference, and may not be reproduced.

As indicated in Section 00810, the "Architect" identified in the AIA Documents shall mean the asbestos abatement project designer (the "Designer"). The Designer responsible for this Project Manual is IEA, Inc.

*** END OF SECTION 00200 ***

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USE ONLY



Document A701™ – 2018

Instructions to Bidders

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

THE OWNER:
(Name, legal status, address, and other information)

THE ARCHITECT:
(Name, legal status, address, and other information)

TABLE OF ARTICLES

1	DEFINITIONS
2	BIDDER'S REPRESENTATIONS
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5	CONSIDERATION OF BIDS
6	POST-BID INFORMATION
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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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

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§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

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§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name 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 the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

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§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

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§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

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§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

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

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

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .2 AIA Document A101™–2017 unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)
- .5 Drawings

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- | Number | Title | Date | |
|--------|---|--------------|--------------------------|
| .6 | Specifications | | |
| | Section | Title | Date Pages |
| .7 | Addenda: | | |
| | Number | Date | Pages |
| .8 | Other Exhibits:
<i>(Check all boxes that apply and include appropriate information identifying the exhibit where required.)</i> | | |
| | <input type="checkbox"/> AIA Document E204™-2017, Sustainable Projects Exhibit, dated as indicated below:
<i>(Insert the date of the E204-2017.)</i> | | |
| | <input type="checkbox"/> The Sustainability Plan: | | |
| | Title | Date | Pages |
| | <input type="checkbox"/> Supplementary and other Conditions of the Contract: | | |
| | Document | Title | Date Pages |
| .9 | Other documents listed below:
<i>(List here any additional documents that are intended to form part of the Proposed Contract Documents.)</i> | | |

SECTION 00205

Modifications to Instructions to Bidders

GENERAL

The following provisions supplement, modify, change, delete from or add to the "Instructions to Bidders," AIA Document A701, 1997 Edition, and are hereby made a part of the Contract Documents. Where any Article of the Instructions to Bidders is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these Modifications to Instructions to Bidders, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

◆ ARTICLE 1: DEFINITIONS

1.8 Delete paragraph 1.8.

Add the following:

1.8 A bidder is an entity (i.e. corporation, partnership etc.) in whose name a bid is submitted.

◆ ARTICLE 3: BIDDING DOCUMENTS

3.1.1 Delete paragraph 3.1.1.

Add the following:

3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Section 00100 for the deposit sum, if any, stated therein. The deposit will not be refunded to Bidders.

◆ ARTICLE 4: BIDDING PROCEDURES

4.1.3 Delete paragraph 4.1.3

Add the following:

4.1.31 Sums shall be expressed in figures.

*** END OF SECTION 00205 ***

SECTION 00210

Supplementary Instructions to Bidders

The following conditions, submittals and requirements, in addition to the provisions of AIA Document A701, 1997 Edition, properly executed and appropriately submitted, constitute a "valid" bid.

Clarification, Interpretations, Addenda: Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request that must reach the Designer at least four days prior to the date for receipt of Bids. No Addenda will be issued later than two days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids. This provision modifies "Instructions to Bidders," AIA Document A701, 1997 Edition, Article 3.2.2 and 3.4.3, and the modification has full force and effect. All other provisions of AIA Document A701 shall remain in effect.

Submission of Bids: Bids shall be submitted in duplicate on the Bid Form provided with all blank spaces filled in. In the event that a bid is not offered for an item or that information requested is unavailable or inapplicable, enter "None" or "No Bid" or "Not Applicable." In the event there is a discrepancy in the numbers, the bid will be disqualified. Complete the Bid Form without alterations, additions, erasures or any recapitulation of the work to be done. Enclose the proposal in an opaque envelope, sealed and bearing the title of the work, bid opening date and time, the name of the bidder and the address of the Owner.

Alternate Bids: Bidders are required to provide a valid Bid for each and every form of Bid requested herein.

◆ REQUIRED BID SUBMITTALS

The four (4) items listed below are required elements that must be included with the bid submittal package. Each item will be individually reviewed and may provide a basis for rejection of the bid, at the Owner's discretion, if the bid does not meet the stated specifications.

1. Bid Form: Two (2) completed bid forms.
2. Bid Security and Bonding: Bid security in the form of a Bid Bond in the amount of five percent (5%) of the bid amount for bids exceeding \$100,000, including add alternate bids will be required for all Bids. If a Bid Bond is required, it shall be written on AIA Document A310.
3. Responsible Contractor Documents: Any Bidder who submits a bid exceeding \$50,000.00 must provide Responsible Contractor Documents, to include:
 - Attachment A: Responsible Contractor and Certification of Compliance
 - Attachment A-1: First-Tier Subcontractor List
 - Attachment A-2: Additional Subcontractor List
4. Construction Schedule: Each Bidder must provide a complete sequence of construction activity including dates for commencement and completion of each element of the work, and number and duration of shifts. Use the Construction Schedule form in Section 00430.

For phased projects, indicate completion and clearance of each Work Area in advance of the date established for Substantial Completion.

Allow time for testing and other procedures necessary for certification of clearance and Substantial Completion.

Provide notations on the schedule to show how the sequence of work is affected by requirements for phased completions to permit work by separate Contractors and partial occupancy by Owner prior to Substantial Completion.

The total number of personnel assigned to each phase/shift of the project.

Schedule the Work so as to minimize disruption to normal building operations and to meet project completion dates. Final completion shall be no later than October 10, 2019, at 5:30 p.m.

◆ REQUIRED POST-BID SUBMITTALS

The ten (10) items listed below are required submittals that must be submitted by all Bidders from which it is requested. Each item will be individually reviewed and will provide the basis for evaluation of the bid. A bid may be rejected as incomplete if all required submittals are not provided to the Owner within 24 hours of the bid opening.

- Licenses: Provide evidence that all state licensing requirements have been met.
- References: Each Bid shall be accompanied by a list of not less than three (3) nor more than five (5) clients for whom the Bidding Entity has performed services comparable with the Work of this project within the last 24 months. These clients may be contacted as references. The References shall be for projects that are comparable in scope, degree of difficulty, timeline and work methods. A bid may be rejected if the References provided do not meet these specified requirements.
- Contingency Plan: The Contractor shall be required to submit a contingency plan if progress is not meeting the construction schedule.
- Litigation and Arbitration: Each Bidder shall indicate in writing whether he or any agent of the Bidder is a party to any civil or criminal action involving asbestos-related work, or is a party in an arbitration proceeding involving asbestos-related work.
- Fines and Citations: Each Bidder will indicate in writing whether it has been fined or cited or has any open investigations with any federal, state or local regulatory authority for any asbestos-related work. Three (3) or more fines, citations or open investigations within the previous calendar year from the date for receipt of Bids may be considered evidence that a Bidder is not a responsible Bidder, and this may be considered in the evaluation of the Bids.
- Liquidated Damages: Each Bidder shall indicate whether payment of liquidated or actual damages has ever been required for their failure to meet a project schedule.
- Authorized Personnel: List the names, addresses and telephone numbers of those persons authorized to discuss the contents of the Bid and those persons authorized to conduct contract negotiations on behalf of the Bidder. Identify the primary responsibilities of each person listed. Also include the resume, name and accreditation of responsible person(s), including evidence of certification as an asbestos abatement supervisor.
- Contractor Qualifications: Provide a qualification profile the bidding entity's experience, including a resume of key personnel whom Bidder intends to perform work on this project, existing commitments, bonding capability, limits of insurance coverages, and equipment availability. Experience qualifications required of the Bidder will refer first to the bidding entity rather than the experience, either individual or aggregate, of the individuals who make up the company. Contractor Qualifications may be considered in evaluation of the Bids.
- Insurance: Prior to execution of an Agreement, the successful Bidder will be expected to provide proof of standard insurance coverages as required in Section 00800 - Supplementary Conditions. Costs associated with these coverages shall be reflected in the Lump Sum Base Bid. In addition, insurance coverage must be secured for hazards related to asbestos exposure. This insurance shall be of the occurrence type. This insurance shall pay or defend all established claims regardless of the date on which the claim is reported and provide the same coverage to the Owner and the Owner's Representative (IEA, Inc.) as additional insured or through a separate policy provided at the Contractor's expense. Comply with all state requirements regarding insurance.
- Subcontractors: List items to be subcontracted and names of proposed subcontractors.

Financial Condition: Bids may be evaluated with consideration to the Bidder's Financial Condition. Prior to execution of the Contract, the Contractor shall submit AIA Form A305.

Additional Information: Bidders may propose features and items above and beyond the requirements set forth in the Bidding Documents. The Owner does not intend to limit the contents of a Bid. Additional information deemed pertinent by the Bidder may be attached. The Owner, however, reserves the right to exclude such information from consideration in evaluating Bids. The Owner also reserves the right to require the submittal of additional financial, technical or other information. Such a request shall not be construed to indicate the Bidder's standing in the evaluation of Bids.

Evaluation of Bids: Award will be made by written notice to the lowest responsible Bidder as determined by the Owner. Bids may be rejected if not accompanied by required bid security, if incomplete or irregular based on the requirements of the Project Manual or if the Bid exceeds the funds available or if the bid is considered invalid. Bids may be rejected if the required post-bid submittals do not meet the specified requirements identified in Section 00210. The Owner further reserves the right to reject Bids on the basis of Bidder's financial responsibility, integrity in business and professional matters, skill and ability and experience in the safe completion of the work, schedule, likelihood of completion of satisfactory work and promptness.

Execution of Contract: By submitting a Bid, the Bidder represents that the Bid will not be withdrawn within the period of sixty (60) days after the date specified for the receipt of Bids, and that, if the Bid is accepted the Bidder will enter into a formal contract to perform the Work. If a mutually acceptable contract is not signed within thirty (30) days of award, the Owner reserves the right to reject the Bid and reevaluate other Bids received. The Owner further reserves the right to enter into contract negotiations with more than one Bidder or to terminate negotiations with any Bidder and undertake negotiations with another Bidder at any time.

*** END OF SECTION 00210 ***

SECTION 00410

Bid Form

Project: Clarkfield School – 2019 Asbestos Removal

Bids are requested as follows:

Lump Sum Base Bid

For furnishing all labor, materials, equipment and services necessary for and incidental to the above-named project as described in the Contract Documents. The sum is based on performance with insurance coverage as specified in Section 00800 – Supplementary Conditions.

Addenda Received through Number: _____

\$ _____

1. Bid Bond Enclosed: _____

Amount: _____

\$ _____

2. Construction Schedule Enclosed: _____

3. Responsible Contractor Documents: _____

Attachment A _____

Attachment A-1 _____

Attachment A-2 _____

Authorization

The undersigned, having thoroughly examined the Contract Documents including all related Addenda and any other materials included in the Project Manual or incorporated by reference and having thoroughly and carefully examined the building and specific area(s) in which the Work is to be performed and having become familiar, by investigation, with conditions that may affect performance of the Work, does hereby authorize the submission of this Bid to perform the work in strict accordance with the Contract Documents:

Contractor

Name

Address

Signature

City/State/Zip

Position

Date

SECTION 00430

Construction Schedule

Project: **Clarkfield School – 2019 Asbestos Removal**

Area/Phase/Location: _____

Contractor: _____

Name

Address

City/State/Zip

Contract Start Date: _____

Contract Completion Date: _____

	Phase 1 Work Dates	# of Workers per Shift
Preparation of Work Area	From: To:	
Removal and Decontamination	From: To:	
Clearance Air Testing	From: To:	
Removal of Isolation	From: To:	

Comments:

SECTION 00610

Performance and Labor & Material Payment Bonds

A Bond for Performance and a Bond for Labor and Material Payment in the amount of the full contract sum for all work over \$10,000.00 will be required of the successful bidder as provided in AIA Document A701 Instructions to Bidders. Comply with all state requirements regarding bonding.

A copy of AIA Document A312, Performance Bond and Labor and Material Payment Bond is attached. IEA, Inc. is a member of the American Institute of Architects (AIA), and the original AIA Document for this project was produced utilizing *AIA Contract Documents: Electronic Format*, under Order Number 9980702716. This document is provided for the Contractor's reference, and may not be reproduced.

*** END OF SECTION 00610 ***

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the

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Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

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§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title:

Address:

Signature: _____

Name and Title:

Address:

Init.

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Payment Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:
Amount: \$
Description:
(Name and location)

BOND

Date:
(Not earlier than Construction Contract Date)

Amount: \$
Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL
Company: *(Corporate Seal)*

SURETY
Company: *(Corporate Seal)*

Signature: _____
Name and
Title:

Signature: _____
Name and
Title:

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

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§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

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§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

SURETY

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

Signature: _____
Name and Title: _____
Address: _____

Init.

SECTION 00700

General Conditions

The attached copy of AIA Document A201, General Conditions of the Contract for Construction, 2007 Edition, Articles 1 through 15 inclusive, is hereby made a part of the Contract Documents, as amplified by Section 00800 - Supplementary Conditions and as amended by Section 00810 - Modifications to General Conditions.

IEA, Inc. is a member of the American Institute of Architects (AIA), and the original AIA Document for this project was produced utilizing *AIA Contract Documents: Electronic Format*, under Order Number 9980702716. This document is provided for the Contractor's reference, and may not be reproduced.

*** END OF SECTION 00700 ***

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AIA[®]

Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

THE OWNER:

(Name, legal status and address)

THE ARCHITECT:

(Name, legal status and address)

TABLE OF ARTICLES

1	GENERAL PROVISIONS
2	OWNER
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4	ARCHITECT
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
15	CLAIMS AND DISPUTES

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of 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 the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal 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 Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the 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 and 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 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 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.

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§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 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 that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that 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

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 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

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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 if 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 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, 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.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

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§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 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.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly 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.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for 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. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

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 Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. 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 its 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 or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 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.

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§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, 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 coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. 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.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 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. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be 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 notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 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 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly 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 the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work 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.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that 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, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

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

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that 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, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that 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 that an equitable adjustment be made in the Contract Sum or Contract Time, or 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 promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

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§ 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; and
- .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 with reasonable promptness.

§ 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.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of 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

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

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delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 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 that 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. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. 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 that 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, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, 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.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) 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 the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect 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 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 that 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.

§ 3.12.10.1 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 be entitled to rely

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upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately 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 and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and 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.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, 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. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 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 construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its 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 and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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 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 an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

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§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, 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 that 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 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 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.

§ 4.2 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 during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed 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 not have control over, charge of, or responsibility 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.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. 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

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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§ 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 has 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 13.4.2 and 13.4.3, whether or not the 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, 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 in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness 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, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or 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 order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; 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 pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 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 Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 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.

§ 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 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 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.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

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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 the 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, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period 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 substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, 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 that the Contractor, by these Contract 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 that 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 that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 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.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

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 term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 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 any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its 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 or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has 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 notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work 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. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

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§ 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

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. The Contractor shall proceed promptly with changes in the Work, 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 The 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.

§ 7.3 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 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment 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, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. 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 7.3.4 shall be limited to the following:

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- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .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, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 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.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement 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.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that 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.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim 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 15.

§ 7.3.10 When the Owner and Contractor agree with a 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 the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

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.

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§ 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, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 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 (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended 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 Article 15.

§ 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.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent 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 prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or 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 submittal 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, suppliers, or other persons or entities that 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 (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole 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 in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. 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. 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 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 suppliers for labor, materials or equipment;

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- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate 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 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 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 pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the 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 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to 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 or provided by 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, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

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§ 9.7 Failure of Payment

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 binding dispute resolution, then the Contractor may, upon seven additional days' 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 shutdown, 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 that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and 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 the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the 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 and authorized by public authorities having jurisdiction over the Project. 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.

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§ 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 the Contractor's 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. 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 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, (3) a written statement that the Contractor knows of no 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, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and 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, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance 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 the lien, claim, security interest, or encumbrance, 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, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the 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;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a 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

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

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- .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, a Subcontractor, or a Sub-subcontractor; 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 comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and 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 implement, 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 the owners and users of adjacent sites and utilities of the safeguards.

§ 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. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is 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 permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party 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, notice of the 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.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and 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 notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, 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 cause it to be 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 the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

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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. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 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), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency 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 reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

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 Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 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 authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or

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expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 **Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 **Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 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; (2) the Architect and Architect's consultants; and (3) Separate Contractors, 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 those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 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, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

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§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement 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 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

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 requested 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 that 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, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, 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, if, 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 any 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 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

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that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2 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 completion of that portion of the Work.

§ 12.2.3 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 that 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 of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that 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 the Contractor has 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

If the Owner prefers to accept Work that 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

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives 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 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 a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

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

§ 13.3.2 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 upon in writing.

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§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. 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 that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 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 13.4.1, 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 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 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.

§ 13.4.4 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.

§ 13.4.5 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.

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

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties 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.

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, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that 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 reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, 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.

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§ 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' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly 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' 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 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner 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' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession 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 written 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 Initial Decision Maker, 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 under 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 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;

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- .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 Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract 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. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall 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.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 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.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 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.

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§ 15.1.6.2 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.

§ 15.1.7 Waiver of 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 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a 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 Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker 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 Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker 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 the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

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§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, 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 Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 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.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution 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. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 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.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. 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.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

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

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§ 15.4.3 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.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

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SECTION 00800

Supplementary Conditions

GENERAL

The following conditions supplement or amplify the "General Conditions of the Contract for Construction", AIA Document A201, 2007 Edition, and are hereby made a part of the Contract Documents.

◆ PRE-CONSTRUCTION CONFERENCE

After execution of Agreement and prior to commencement of the Work, a pre-construction conference will be arranged after acceptance of the qualified bidder, at Clarkfield School, attended by representatives of Contractor, Designer and Owner and any Subcontractors or other entities engaged in work at the site.

◆ PROJECT SCHEDULE

The Work of this project shall occur during the time period specified in Section 00100 – Advertisement for Bids. The Owner and the Owner's Representative must be notified at least 24 hours in advance of any changes from the work schedule submitted with the Bid. Such changes are subject to the Owner's approval.

◆ COMPLIANCE WITH ORDINANCES, REGULATIONS AND LAWS

The Contractors and Subcontractors will strictly observe all laws, ordinances, rules and regulations concerning hours of work, age, compensation, working conditions and payroll taxes.

All work and materials addressed in the Contract Documents must comply with requirements of the latest edition of the following:

- All Local Ordinances and Codes
- All State and Federal Laws, Codes and Regulations
- Applicable Building Code
- National Electrical Code
- Applicable Fire Code

Work under this Contract will be subject to inspection and approval by the Federal, State and Local authorities having jurisdiction. If in any instance, specifications conflict with any of the above regulations or standards, the regulations or standards will take precedence. This, however, will not be construed as relieving the Contractor or any Subcontractors from complying with any requirements of specifications in excess of the regulations or standards and not contrary to them. No claims for extra payment to achieve compliance with the above requirements will be allowed.

◆ COMMENCEMENT AND COMPLETION OF THE WORK

The Contractor must not commence work until he has received a Contract and Notice to Proceed from the Owner. The Contractor is not to allow any Subcontractor to commence work until these Orders have been received by the Contractor.

This Order will not be issued by the Owner until all items required by the Contract Documents prior to the start of work have been received, and in no case will any Subcontractor be allowed to start work prior to submitting, through the Contractor to the Owner, certificates of liability and Worker's Compensation insurance if not covered in the Contractor's insurance.

It is hereby understood and mutually agreed by and between the Contractor and the Owner, that the date of beginning, rate of progress, and the time for completion of the work to be done hereunder are essential conditions of this contract; and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on the date specified.

If the Contractor fails to provide the number of personnel indicated in the Plan and Schedule submitted with the Bid or if the number or duration of the shifts indicated on the Schedule increase as a result of factors that can be controlled by the Contractor, the Contractor shall be responsible for additional consulting and air monitoring costs required for completion of the Work.

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time stipulated. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

The Subcontractors are to proceed with the work when notified and will execute the work regularly, diligently, and uninterruptedly at such a rate of progress as will ensure completion of the work within the time limits and under the conditions specified in the Contract Documents.

◆ LIQUIDATED DAMAGES

The surety upon any Performance Bond furnished by the Contractor shall be liable for any such liquidated damages for which the Contractor may be liable, to the extent the Contractor shall not make settlement thereof with the Owner.

◆ INSURANCE

Unless otherwise provided, the Contractor, in all cases, will be required to carry insurance of the kinds and in the amounts hereinafter specified. The policies must be issued by a company or companies acceptable to the Owner. The insurance provided by the Contractor shall name the Owner as additional insured. The Contractor shall not commence work under the contract until he has obtained all the insurance required by these specifications and until such insurance has been approved; nor shall the Contractor allow any Subcontractor to commence work on his Subcontract until all similar insurance required of the Subcontractor has been obtained and approved.

The Contractor's attention is specifically directed to any special provision(s) in his individual Contract demanding additional insurance.

- Compensation Insurance: The Contractor shall take out and maintain Worker's Compensation insurance and Employer's Public Liability insurance for all persons employed by him in the performance of the work contemplated by the Contract and insuring said Contractor against all obligations arising out of statutory requirements. In any case where work is sublet, the Contractor shall require each Subcontractor to insure himself in like manner.
- Public Liability and Property Damage Insurance: The Contractor shall take out and maintain during the life of the contract comprehensive protective public liability insurance for and on behalf of himself and the Owner as additional insureds and, using a cross-liability endorsement, protect the Owner and the Contractor from claims for damages and bodily injuries, including accidental death, as well as from claims for property damage which may arise from operations under the contract, including coverage for damage caused by blasting or explosion, collapse or structural injury to building or structures, or both, and damage to underground facilities of any kind, whether such operations be by the Contractor or by the Subcontractor or by anyone directly or indirectly employed by either of them. The minimum amounts of such public liability insurance shall be as follows:
 - Bodily injury insurance (including death) in an amount of not less than \$1,000,000 for all damages arising out of bodily injuries to or death of one person and subject to the same limit for each person in a total amount of not less than \$1,000,000 on account of any one accident.
 - Property damage insurance in an amount of not less than \$1,000,000 for all damages to or destruction of property in any one accident and subject to that limit per accident; further subject to a total of not less than \$1,000,000 for all damages to or destruction of property during the policy period.

- **Builder's Risk Installation Coverage on Property:** The Contractor shall take out and maintain Property Insurance as specified in Section 00700 – General Conditions, subsection 11.3 and Section 00810 – Modifications to General Conditions, Subsection 11.3. If the Contractor chooses not to purchase the above-mentioned property insurance, no claims will be made to the Owner's property insurance for losses suffered by the Contractor or any subcontractors. In addition, no claims will be made to the Owner's property insurance to cover damage to the property for which the Contractor or any subcontractor is responsible.
- **Comprehensive Owner's Protective Insurance:** In lieu of being named as an additional insured with the Contractor on such policy, and in lieu of the cross-liability endorsement, the Owner will accept comprehensive owner's protective insurance issued in the name of the Owner and paid for on behalf of the Owner by the Contractor, which insurance shall be subject to the same limits and insure the same risks as the public liability insurance hereinbefore set forth.
- **Automobile Insurance:** The Contractor shall take out and maintain during the life of this contract comprehensive automobile liability insurance insuring said Contractor not only for the operation of vehicles owned or used by him but also vehicles hired or leased by him. Such automobile liability insurance shall contain bodily injury and property damage insurance, including death, in amounts not less than \$500,000 combined single limit.
- **Umbrella or Excess Liability Coverage:** The Contractor shall provide umbrella or excess liability coverage with limits of not less than \$1,000,000.
- **Subcontractor's Insurance:** In the event any work contemplated by the Contract is sublet, the Contractor shall be responsible to see that the Subcontractors provide insurance in accord with the minimum requirements hereinabove imposed on the Contractor.
- **Contractual Liability Insurance:** The Contractor shall provide, either by a separate policy or insurance or by an endorsement to the insurance herein required, contractual liability insurance in such amounts and of such kinds as required for comprehensive protective public liability insurance. Any additional amount of public liability insurance which may be demanded by the Owner, in specified cases, shall be accompanied by a parallel and corresponding increase, in an equal amount, in the coverage afforded the contractual liability insurance. Such contractual liability insurance shall be in such a form so as to expressly include all Subcontractors who may be employed to form a part or parts of the Contract.
- **Asbestos Hazard Insurance--Occurrence:** Insurance coverages required in these Contract Documents may have exclusions for asbestos-related hazards. If such exclusions apply, the asbestos hazard liability must be addressed by supplementary coverage provided by additional policies. This coverage shall be provided on an "occurrence" basis, covering claims for damage incurred during the policy's effective dates, regardless of claim filing date. The minimum amounts of such insurance shall be as follows:
 - \$1,000,000 per occurrence limit of general liability, including products and completed operations.
 - A separate excess policy on Asbestos Hazard Insurance for at least \$2,000,000.
 - The asbestos hazard insurance policy or policies as required above shall name the Owner and Owner's Representative as additional insureds and using a cross-liability endorsement, protect the Owner, the Owner's Representative and the Contractor from all asbestos hazard claims whether resulting from the operations of the Contractor or by the Subcontractor or by anyone directly or indirectly employed by either of them.
- **Additional Insurance:** Nothing contained herein shall preclude the Owner from determining and demanding, in specified cases, that in addition to the minimum required insurance covered by the provisions of these specifications, additional insurance must be obtained by the Contractor and proof thereof furnished to the Owner be in addition to and not in lieu of the insurance herein above required.
 - The conditions of this specification require a lump sum bid based on the inclusion of costs for asbestos abatement-specific coverage normally excluded from other required liability coverage named in this section.
- **Proof of Insurance:** Prior to the execution of the Owner-Contractor agreement, the Contractor shall furnish the Owner with satisfactory proof of the existence and carriage of insurance of the kinds and in the amounts above specified. The proof of insurance shall be in such form as the Owner's attorney may require and, unless otherwise provided by the Owner in writing, the proof of insurance shall consist of true and accurate copies of the insurance policy or policies, which specimen copies have been approved by the Owner's attorney and filed with the Owner.
- **Cancellation:** All such proof of insurance required herein shall state that thirty (30) days' written notice will be given to the Owner by service of such notice upon the Owner's Representative before any insurance is changed or cancelled. In the absence of written consent by the Owner, the Contractor shall not proceed with the work contemplated by the Contract beyond the period of coverage afforded by a cancelled insurance policy until the required insurance coverage has been procured, approved and filed with the Owner as a replacement for such cancelled insurance coverage.

◆ INFRINGEMENT ON ADJOINING PROPERTY

The Contractor(s) are to exercise care to ensure that infringements on adjoining property is avoided in the process of work under this contract. Any damage resulting from infringement on adjoining property must be made good immediately by the Contractor responsible at his own expense.

The Contractor(s) are obliged to replace, restore or re-arrange, in a manner satisfactory to the Owner or officers in charge, any components of lawns, streets, pavements, curbs, sidewalks, boulevards such as lamp posts, poles, conduits, wires, hydrants, underground mains of other property owners, etc. which have been removed, displaced, disturbed or interfered with as the result of work under this contract.

The Contractor is the prime coordinator of the work and is responsible to notify other Subcontractors within a reasonable amount of time of the work required to be built in, around, over, etc. of their work so as not to delay or impede the work.

The Contractor is responsible for the overseeing and direction of the work of any Subcontractor he may employ, the same as that work which he furnished directly himself.

The Contractor is to obtain layout drawings, roughing-in detail sheets and other pertinent information from equipment contractors and each Subcontractor to thoroughly coordinate all phases of the work. Recesses, chases, curbs, holes and other features are to be built-in as required as the building progresses. Cutting and patching must be kept to a minimum.

The Contractor and all Subcontractors are to cooperate to prevent damages to each other or the Owner's interests. Any such damage must be paid for by the responsible persons.

Should the Contractor cause damage to any other work or person employed on the work, the Contractor agrees, upon due notice, to settle with such person by agreement, if such person will settle. The Contractor agrees to defend any suits at his own expense and pay all costs arising therefrom without any cost to the Owner.

The Contractor will leave all required openings and cooperate with Subcontractors and trades in locating or building-in proper sleeves, hangers, conduits, inserts, anchors, grounds, items of equipment, supports or recesses, occurring in, attached to, or passing through street, concrete or masonry floors, walls, partitions, or structural members. The Subcontractors will supply, cooperate and coordinate in locating above items required by their work so that no delay occurs.

◆ DRAWINGS AND SPECIFICATIONS

If the drawings or specifications require work to be done in a manner which, in the Contractor's opinion, makes it impossible to produce first class work, he is expected to request an interpretation from the Owner or Designer before proceeding with the work. If the Contractor fails to make such a request, no excuse will thereafter be entertained for failure to execute work in a satisfactory manner. If discrepancies are discovered in or between drawings and specifications, Contractor is deemed to have estimated his cost on the more expensive material or method of doing the work unless he has, before submitting his proposal, asked for and received a written decision clarifying which material or method will be required.

◆ RETAINAGE

Retainage will be 5% until final completion.

◆ TEMPORARY FACILITIES

The Contractor will be provided space within the building for his office.

The Contractor will be required to maintain his own storage area at the site, inside the building.

Existing toilet facilities within the building will not be available for use of workmen on the job.

◆ TEMPORARY HEAT

The Contractor will provide, install and maintain all facilities for temporary heat required for all work under this Contract and pay for any and all charges connected therewith until the building is accepted for occupancy by the Owner. The Contractor will provide these temporary facilities for the use of all Subcontractors and trades.

◆ TEMPORARY ELECTRIC POWER

The Contractor will provide, install and maintain all facilities for temporary power required for normal work under this Contract. The Owner will pay for all energy charges required. The Contractor will provide the temporary services for the use of all Subcontractors and trades. Where work requires unusual amounts of power, such as welding, cutting, pumping, etc. the Contractor using the power will make arrangements to compensate the Owner.

◆ TEMPORARY WATER

The Contractor will provide, install, and maintain all facilities for water needed including provisions for hot and cold water, adjustable at the shower tap, for construction of the project. The Owner will pay all water charges related to the completion of the project.

◆ USE OF THE FACILITY BY THE OWNER

Means of ingress or egress in buildings or offices shall not be blocked for any reason or hamper the normal operation of the building in any way unless permission is first obtained from the Owner.

The Contractor's materials, tools, supplies or debris shall not be stored or allowed to accumulate in corridors or office areas. The Owner assumes no liability or responsibility whatsoever for any damage, destruction, theft, or other acts which may occur to the Contractor's material or equipment as a result of his negligence.

Contractual work shall be conducted Monday through Thursday, 7:00 a.m. to 5:30 p.m. The Owner shall be responsible for making the facility available to the Contractor on the dates and during the times specified so that the project can be completed within the time schedule. The Owner shall be responsible for any additional expense for staffing the building on this schedule. The Contractor must propose to the Owner a definite schedule so that the Owner can arrange for appropriate staffing. Any changes to the schedule must be approved by the Owner and submitted by the Contractor no less than 24 hours before the anticipated change.

◆ CHANGE ORDERS

The Owner, without invalidating the Contractor's bid, may make changes by adding to or deducting from the amount of the bid to form the Contract providing that such conditions and deductions from the face of the bid are based on the unit prices or alternates used to make up the bid.

Likewise, if the Contract is awarded, the Owner may, without invalidating the Contract, make changes by altering, adding to, or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be executed under the conditions of the original Contract, except that any claims for extension of time caused thereby shall be adjusted at the time of ordering such change. Except as provided, no change affecting the original Contract cost shall be made unless in pursuance of a written order, and no claim for an addition to the Contract Sum shall be valid unless so ordered. The Owner's Representative may not issue a written order without authority from the Owner.

Regardless of the method used to determine the value of changes, the estimated or actual cost shall be submitted in detailed breakdown form, giving quantity and unit costs by each trade for each item, labor cost with hourly rates, allowable overhead and profit. No additional amount will be paid for submittal in this form or for resubmittal if the breakdown is considered inadequate by the Owner or Owner's Representative. Back-up data submitted with applications for payment may be used as basis for approving or rejecting costs submitted in change orders.

◆ **CUTTING AND PATCHING**

All cutting and patching required for work must be done by the Contractor. No cutting of structural members will be permitted without specific approval of the Owner or Owner's Representative.

◆ **ADDITIONAL COSTS DUE TO AIR TESTING RESULTS**

It is the Contractor's responsibility to maintain the specified acceptable airborne fiber levels during the progress of the Work and to provide the specified clearance air level at the completion thereof. In the event that any air sample collected fails to meet the specified standard and additional air sampling, analysis or related monitoring activity is required as a result, the Contractor shall bear the costs of such additional work. In the event that remaining payments due the Contractor are not sufficient to cover such costs, the Contractor shall pay the difference to the Owner.

*** END OF SECTION 00800 ***

SECTION 00810

Modifications to General Conditions

GENERAL

The following provisions supplement, modify, change, delete from or add to the "General Conditions of the Contract for Construction," AIA Document A201, 2007 Edition, and are hereby made a part of the Contract Documents. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these Modifications to General Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

◆ ARTICLE 2: OWNER

2.2 Information and Services Required of the Owner:

Delete Paragraph 2.2.3

2.3 Owner's Right to Stop the Work

Delete Paragraph 2.3

Add the following:

2.3 If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or fails to carry out work in accordance with the Contract Documents, the Owner, by written order signed personally or by an agent specifically so empowered by the Owner in writing, may order 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 Subparagraph 6.1.3.

2.4 Owner's Right to Carry Out the Work

Delete Paragraph 2.4

Add the following:

2.4 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents 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 cost of correcting such deficiencies, including compensation for the Architect's additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

Add the following:

2.5 The Architect's Compensation for Services to Remedy Defective Work:

2.5.1 When the Architect's Additional Services are required because of defective work, neglect, failure, deficiencies or default by the Contractor, the Architect's compensation for such services shall be based on the Architect's invoice sent to the Owner. The invoice, when approved by the Owner, along with other costs, damages and liabilities incurred by the Owner or the Architect, shall be the basis for adjusting the Contract sum by a Change Order, to compensate the Owner for the Architect's additional services.

2.5.2 It is the Contractor's responsibility to maintain the specified acceptable airborne fiber levels during the progress of the Work and to provide the specified clearance air level at the completion thereof. In the event that any air sample collected fails to meet the specified standard and additional air sampling, analysis or related monitoring activity is required as a result, the Contractor shall bear the costs of such additional work. In the event that remaining payments due the Contractor are not sufficient to cover such costs, the Contractor shall pay the difference to the Owner.

◆ ARTICLE 3: CONTRACTOR

3.4 Labor and Materials

Add the following:

3.4.4 Certain materials are described in this specification by the use of trade names or manufacturer's names. It is understood and inferred that such description is followed by the phrase 'or approved equal.' The intention is to establish a standard of comparison -- not to exclude other materials.

3.4.5 Where Work is specified to be in accordance with building codes or other regulations or requirements, the Work shall comply with such regulations or requirements; however, where a higher quality of materials or type of construction is shown or specified than is required by the codes or regulations, the higher quality, or material or type of construction, in addition to compliance with codes or regulations, shall be furnished.

3.7 Permits, Fees, Notices, and Compliance with Laws

Delete Paragraph 3.7.4

Add the following:

3.7.4 Concealed or Unknown Conditions. If the contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Document, the Contractor shall promptly provide written notice to the Owner and the Architect before conditions are disturbed and in no event later than 24 hours after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that 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, or both. If the Architect determines that the conditions at the site area not materially different from those indicated in the Contractor Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. Claims made by either party in opposition of such determination must be made within three (3) business days after the Architect has given notice of the decision. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

3.18 Indemnification

Add the following:

3.18.3 To the fullest extent permitted by law, Contractor and its employees hereby waive any claims against Owner and its affiliates, subsidiaries, employees, agents and representatives as the result of performance of the Work, including, but not limited to, exposure to asbestos, asbestos-containing materials or other hazardous materials. Contractor's insurers (including its workers' compensation insurer) shall be required to waive subrogation rights against Owner, its affiliates, subsidiaries, employees, agents and representatives. Contractor shall further defend, indemnify and hold harmless Owner, its affiliates, subsidiaries, employees, agents and representatives from and against any claims, damages, losses, fines and expenses (including, without limitation, attorneys' fees and claims in the nature of workers' compensation or claims made by carriers of workers' compensation insurance) resulting from the Work or exposure to asbestos, asbestos-containing materials or other hazardous material. Prior to commencement of the work each employee of Contractor or other persons authorized or allowed by Contractor to enter the area of the Work will be required to execute a Waiver of Claims in form and substance satisfactory to Owner and its counsel. The Contractor agrees to indemnify and hold harmless the owner against claims, damages, judgments or expenses resulting from a claim that any material, equipment or service provided by the Contractor infringes a copyright, patent, trademark, intellectual property or other proprietary right, or constitutes unfair competition or misuse of a trade secret or confidential information belonging to a third party.

3.18.4 The Contractor shall indemnify and hold harmless the Owner and all its officers, agents, and employees from all suits, actions, or claims of any inquiries or damages received or sustained by any person, persons or property, by or from the act or acts of said Contractor, or by or in consequence of any negligence in safeguarding the work, or through the use of unacceptable materials in constructing the work, or by or on account of any act or omission, neglect, or misconduct of said Contractor, or from any claims or amounts arising or recovered under the Workmen's Compensation Law or any other law, by-law, ordinance, order or decree, and so much of the money due the said Contractor under and by virtue of his Contract, as shall be considered necessary by the Owner, may be retained for the use of the Owner, or in case no money is due, his Surety shall be held until such suit or suits, action or actions, claim or claims for injuries or damages, as aforesaid, shall have settled and suitable evidence to that effect furnished to the Owner. The Contractor shall indemnify and hold harmless the Owner from any and all losses caused by or on account of any claims or amounts received for any infringement of patent, trademark or copyright.

3.18.5 The unauthorized use by the Contractor of public or private property for any purpose may be considered an injury or damage to the property so used.

3.18.6 Where the Owner is joined as a party defendant in any aforesaid suit or suits, action or actions, on account of any aforesaid claim or claims for any such injuries or damages arising from the work or connected with the work, the Contractor shall be obligated to fully indemnify and hold harmless the Owner from the liability therein and to further accept the tender of the defense of any such suit or suits, action or actions, at the Contractor's own separate cost and expense, and if the Contractor, in any such instance or instances, shall unduly fail or refuse upon due notice and demand as the same may be given by the Owner to assume the defense of the Owner therein, and the Owner itself shall supply such defense then and thereupon the Contractor, shall on such account, and in addition to all other liability of the Contractor to the Owner in the premises, pay to the Owner the following sum on account, and for reimbursement for the Owner's cost and expenses in providing such defense, as compiled and set forth herein as follows:

- All actual costs incurred by the Owner in participating in such action, including specifically investigative expenses and any costs of the Owner by reason of any discovery procedures undertaken in such action.
- Reasonable attorney's fees for any appearance in Court. These fees shall be those established by the State Bar Association as a minimum fee schedule.
- The Owner may retain any amount due under the Contract or any amount which shall become due under the Contract in satisfaction of any costs or charges incurred by the Owner in accordance with the foregoing schedule of charges when the Owner is required to participate in any lawsuits as hereinbefore provided growing out of or caused as a result of the operations of the Contractor done in the performance of the Contract.

3.18.7 The Contractor agrees that it shall be his duty to notify the Owner in writing immediately by service of notice upon the Owner's attorney of the existence of any claims, other than those arising under the Workmen's Compensation Act, or possible claims either because of personal injury or property damage, which claims arise as a result of his (the Contractor's or Subcontractor's) operations in the performance of the Contract.

◆ **ARTICLE 4: ARCHITECT**

4.1 **General**

Delete Paragraph 4.1.1

Add the following:

4.1.1 The Architect as referenced in this Project Manual shall mean the asbestos abatement project designer. The Project Designer responsible for this specification is IEA, Inc. The term "Architect" means the Architect or the Architect's authorized representative.

◆ **ARTICLE 5: SUBCONTRACTORS**

5.2 **Award of Subcontracts and Other Contracts for Portions of the Work**

Delete Paragraph 5.2.1

Add the following:

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 any variation from the original list 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, he has reasonable objection to any such proposed person or entity.

Add the following subparagraph:

5.2.2.1 Notice of no reasonable objection shall in no way be construed to indicate prior acceptance or approval of materials or equipment for which such persons or entities may be agents or representatives and shall not relieve the Contractor from full and complete responsibility for the quality of Work and performance of those with whom he executes a contract.

◆ **ARTICLE 8: TIME**

8.3 **Delays and Extension of Time**

Delete Paragraph 8.3.1

Add the following:

8.3.1 If the Contractor is delayed at any time in 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 other causes which the Architect determines may justify delay, then the contractor time shall be extended by Change Order for such reasonable time as the Architect may determine.

◆ **ARTICLE 9: PAYMENTS AND COMPLETION**

9.5 Decisions to Withhold Certification

Delete Paragraph 9.5.1.7

Add the following:

9.5.1.7 failure to carry out the Work in accordance with the Contract Documents.

9.6 Progress Payments

Delete Paragraph 9.6.2

Add the following:

9.6.2 Prompt Payment to Subcontractors: In accordance with Minnesota law, the Contractor shall include, in all subcontracts and other agreements with its subcontractors and suppliers, a provision which requires the Contractor to pay any of its subcontractors and suppliers within 10 days of the Contractor's receipt of payment from the Owner, for undisputed services or supplies provided by the subcontractor or supplier. The provision shall also include the requirement that the Contractor shall pay interest of one and one-half percent (1.5%) per month or any part of a month to the subcontractor or supplier on any undisputed amount not paid on time to the subcontractor or supplier. The provision shall further provide that the minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10; for an unpaid balance of less than \$100, the Contractor shall pay the actual penalty due to the subcontractor or supplier; and a subcontractor or supplier who prevails in a civil action to collect interest penalties from the Contractor shall be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

◆ **ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY**

10.3 Hazardous Materials

Delete Paragraph 10.3.1

Delete Paragraph 10.3.2

Delete Paragraph 10.3.3

◆ **ARTICLE 11: INSURANCE & BONDS**

11.3 Property Insurance

Delete paragraph 11.3.1

Add the following:

11.3.1 Until the Work is completed and accepted by the Owner, the Contractor 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 or an equivalent form, to include an installation floater, if necessary, to cover material on site in the amount of the initial Contract Sum, as well as subsequent modifications thereto for the entire Work at the site on replacement cost basis without voluntary 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 Paragraph 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Paragraph 11.4 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

The form of policy or this coverage shall be "Completed Value" or "Reporting" at the Contractor's option. If by the terms of this insurance any mandatory deductibles are required, or if the Contractor should elect to increase the mandatory deductible amounts or purchase this insurance with voluntary deductible amounts, the Contractor shall be responsible for payment in the amount of the deductible in the event of a paid claim.

Delete Paragraph 11.3.1.1.

Add the following:

11.3.1.1 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, flood (in an approved flood plain), 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.

Delete Paragraph 11.3.1.2.

Delete Paragraph 11.3.1.3.

Delete Paragraph 11.3.1.5.

Delete Paragraph 11.3.2.

Delete Paragraph 11.3.9.

Add the following:

11.3.9 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. If after such loss no other special agreement is made, replacement of damaged property shall be covered by appropriate Change Order.

Delete Paragraph 11.3.10

11.4 Performance Bond and Payment Bond

Add the following:

11.4.3 The bonds shall be automatically increased in amount and extended in time with formal and separate amendments to cover full and faithful performance of the Contract in the event of Change Orders, regardless of the amount of time or money involved. It is Contractor's responsibility to notify his surety of any changes affecting the general scope of the Work or change in the Contract Price or Time.

11.4.4 At any time during the continuance of the Contract that the surety on any bond becomes unacceptable to the Owner for financial reasons, Owner has the right to require additional and sufficient sureties, which Contractor shall furnish to the satisfaction of Owner within ten (10) days after notice to do so.

◆ **ARTICLE 13: MISCELLANEOUS PROVISIONS**

13.7 Time Limits on Claims

Delete Paragraph 13.7

Add the following:

13.7 The Owner and Contractor shall commence all claims and causes of action, other than asbestos-related claims, whether in contract, tort, breach, of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution methods selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

◆ **ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT**

14.2 Termination by the Owner for Cause

Delete paragraph 14.2.1(.1), (.2), (.3), and (.4)

Add the following:

14.2.1 The Owner may terminate the Contract if the Contractor:

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

Delete paragraph 14.2.2 (.1), (.2) and (.3)

Add the following:

14.2.2 When any of the above reasons exist, the Owner may without prejudice to any other rights or remedies of the Owner and after giving the Contractor 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 Paragraph 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient.

◆ **ARTICLE 15: CLAIMS AND DISPUTES**

15.1 Claims

15.1.3 Continuing Contract Performance

Delete Paragraph 15.1.3

Add the following:

15.1.3 Continuing Contract Performance: Pending final resolution of a claim, unless otherwise agreed in writing, the Contractor shall proceed diligently with performance of the contract and the Owner shall continue to make payments in accordance with the contract documents. The Architect will prepare change orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

15.2 Initial Decision

Delete Paragraph 15.2.1

Add the following:

15.2.1 Claims, including those alleging an error or omission by the Architect, shall be referred initially to the Architect for action as provided in Subparagraph 15.2.4, shall be required as a condition precedent to litigation of a Claim between the Contractor or Owner as to all such matters arising prior the date final payment is due, regardless of (1) whether such matters related to execution and progress of the Work or (2) extent to which the work has been completed. The decision by the Architect in response to Claim shall not be a condition precedent to litigation in the event (1) the position of Architect is vacant, (2) the Architect has not received evidence or has failed to render a decision within agreed time limits, (3) the Architect has failed to take action required under Subparagraph 15.2.4 within 30 days after the Claim is made, (4) 45 days have passed after the Claim has been referred to the Architect or (5) the Claim relates to a mechanic's lien.

Delete Paragraph 15.2.5

Delete Paragraph 15.2.6

Delete Paragraph 15.2.6.1

Add the following:

15.2.6 If a claim has not been resolved after consideration of the foregoing and further evidence presented by the parties or requested by the Architect, the Architect will notify the parties in writing that the Architect's decision will be made within seven days. Upon expiration of such time period, the Architect will render to the parties the Architect's written decision relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Architect may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

15.3 Mediation

Delete Paragraph 15.3.1

Delete Paragraph 15.3.2

Delete Paragraph 15.3.3

15.4 Arbitration

Delete Paragraph 15.4.1

Delete Paragraph 15.4.1.1

Delete Paragraph 15.4.2

Delete Paragraph 15.4.3

15.4.4 Consolidation or Joinder

Delete Paragraph 15.4.4.1

Delete Paragraph 15.4.4.2

Delete Paragraph 15.4.4.3

*** END OF SECTION 00810 ***

SECTION 01013

Summary of the Work - Asbestos Abatement

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. **The Project** consists of the removal of asbestos-containing pipe insulation and mudded fittings, ceiling tile adhesive, 9" x 9" floor tile, 12" x 12" floor tile, duct insulation, black flooring mastic, insulation panel adhesive, water holding tank, Tackboard and chalkboard adhesives, roof base flashing, windowsill caulking, and exterior wall caulking.

1. Project Location: Clarkfield School
2. Owner: Yellow Medicine County Schools

- B. **Contract Documents**, dated August 14, 2019, were prepared for the Project by Jim Lindahl.

- C. **The Work** consists of:

LUMP SUM BASE BID

Phase 1

The scope of work includes the removal of all identified asbestos-containing materials in or on the Clarkfield School to allow demolition of the facility.

All work areas where removal of friable asbestos materials is planned shall be cleaned prior to the removal work per MDH 4620.3566 and shall include the following activities:

- Moving of uncontaminated objects from the planned containment area.
- All contaminated materials/objects in the planned containment area shall either be decontaminated by use of HEPA vacuuming or wet wiping, or disposed of as asbestos-contaminated waste.
- Pre-cleaning of all surfaces where critical barriers are to be installed.

For functional areas where the removal of asbestos-containing pipe insulation is less than 25 linear feet or 10 square feet of asbestos-containing material per room, the use of glovebag procedures may be used per MDH Rule 4620.3580. All glovebag removal work shall adhere to the requirement of employee decontamination units.

For functional areas where the removal of entire facility components with intact asbestos-containing material may be achieved as conditions allow or with the use of glovebag removal to assist in the intact removal, all work shall be completed in accordance with MDH Rule 4620.3582.

For all functional areas that require the removal of more than 25 linear feet or 10 square feet of friable asbestos-containing materials, the Contractor shall construct full containments per MDH Rule 4620.3568 with five (5)-stage employee decontamination units and adequate negative air pressure (-0.020 or more) with HEPA air filtration.

The Contractor shall plan the asbestos-containing material removal work that requires a full containment to incorporate as many rooms/areas as reasonably feasible to achieve and maintain proper negative air pressure for the duration of the asbestos removal work.

D. **The Work** will be constructed under a single prime contract.

E. **General Conditions:**

1. Where critical barrier walls are required, the barrier shall be structurally supported with 2"x4" lumber, floor to ceiling, with a distance no greater than six (6) feet between supports. A layer of polyethylene critical barrier shall be placed on each side of the lumber supports. Tunnel critical barrier walls shall be constructed in a manner so as to allow a minimum of three (3) feet passage clearance between permanent structure and temporary barrier wall.
2. The Contractor shall be responsible for security at all HEPA-exhaust locations. At a minimum, all exhaust locations shall be faced with a 5/8" to 3/4" plywood barrier.
3. Mastic removal solvents must be used in accordance with the SDS and the manufacturer's instructions. If the solvent used is considered to be hazardous waste, proper disposal manifests must be provided to the Owner's Representative and/or Owner. The floor surface from which the mastic is removed must be cleaned and dry of removal solvents prior to the removal of containment barriers. This shall be accomplished by scrubbing the floor surface with a one percent (1%) liquid Tide™ and water solution. The Contractor shall then be required to perform two (2) separate clean water rinses of the abated floor surface. Work shall be conducted in a manner to ensure that mastic removal solvents do not seep into floor cracks or drains, below walls, cabinetry or unit ventilators, etc. The work area must be solvent-free at the completion of work.
4. The Contractor shall dispose of carpet which is free of asbestos-containing floor tile and mastic as non-asbestos containing waste.
5. The Contractor shall provide a licensed electrician to connect/disconnect Contractor's subpanel to/from the building's distribution panel(s).
6. The Contractor will properly transfer containerized asbestos-containing waste from equipment decontamination unit to an enclosed and secured dumpster and/or enclosed truck.
7. The Contractor shall protect all wall finishes, floor finishes, electrical systems, mechanical systems, communication systems, life safety systems, security systems, pneumatic systems, plumbing systems, cabinetry, landscaping, etc. from damage as a result of the abatement project. The Contractor shall be responsible for any such damage to the above-mentioned components at no additional cost to the Owner.
8. The Contractor will be responsible for additional costs due to non-compliance to the above-referenced work schedule as per Section 00810 – Modifications to General Conditions, Paragraphs 2.5.1 and 2.5.2.
9. It will be the Abatement Contractor's responsibility to submit all contract documents within 30 days of project completion so a final report can be completed in a timely fashion. If the Abatement Contractor fails to submit all written documentation within this timeframe, the Abatement Contractor shall assume project management costs as approved by the Owner.
10. The Contractor shall segregate all regulated waste items that may arise during the pre-cleaning of the planned abatement areas. The materials shall be moved and stored in an area not included in the abatement work.

NOTE: ANY ESTIMATED QUANTITIES PROVIDED IN THIS SUMMARY ARE FOR REFERENCE ONLY AND ARE IN NO SENSE WARRANTED OR BINDING. IT REMAINS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY PREVAILING CONDITIONS IN ORDER TO DETERMINE THE ACTUAL AMOUNTS OF MATERIAL AND EXTENT OF AREA AFFECTED BY THE SUMMARY AND THE SPECIFICATIONS. NO ADDITIONS TO THE CONTRACT SUM WILL BE ALLOWED DUE TO FAILURE OF THE CONTRACTOR TO PROPERLY ASSESS THE SCOPE OF THE WORK. ANY DISCREPANCIES NOTED BETWEEN THE SUMMARY AND OBSERVED CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO SUBMITTING A BID, EXECUTING THE AGREEMENT OR COMMENCING THE WORK.

1.3 WORK SEQUENCE

A. The Work will be conducted in one (1) phase.

1. Phase 1:

Start Date: Monday, September 23, 2019
Final Completion Date: Thursday, October 24, 2019

1.4 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 "Schedule of Asbestos-Containing Materials" at the end of this section. If any other ACM or 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.

1.5 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.

1.6 NOT APPLICABLE

1.7 NOT APPLICABLE

1.8 CONTRACTOR USE OF PREMISES

A. Use of the Site: Limit use of the premises to work in 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. Owner Occupancy:** Allow for Owner occupancy and use by the public.

2. **Driveways and Entrances:** Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. 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 on-site.

B. **Use of the Existing Building:** Maintain the existing building in a weather tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

1. **Use of Existing Elevators:** The use of elevators by the Contractor will not be permitted.

2. **Smoking:** Smoking or open fires will not be permitted within the building enclosure or on the premises.

1.9 **AIR MONITORING BY THE OWNER**

A. **The Owner has contracted for air monitoring.** Air monitoring may be conducted outside of the work area during the work, and for clearance sampling at the end of the project

1. **Outside of the Work Area:** The Owner's air monitoring firm may sample air outside of the work area to detect faults in the work area isolation such as:

- a. Contamination of the building outside of the work area with airborne asbestos fibers,
- b. Failure of filtration or rupture in the differential pressure system,
- c. Contamination of air outside the building envelope with airborne asbestos fibers.

B. **Work area clearance:** Clearance air sampling by the Owner's air monitor at the completion of asbestos abatement work is described in Section 01711 – Project Decontamination.

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

1.10 **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 collected is based on the requirements of the Minnesota Department of Health (MDH) and/or AHERA regulations.

C. **Base Line:**

1. **Before Start of Work:** The Owner may secure air samples to establish a base line.

2. **PCM Samples**

Background Sampling	Minimum No. of Samples	Analysis Method	Limit of Detection Fibers/cc	Limit of Quantification Fibers/cc	Recommended Volume (Liters)	Rate-LPM
Indoors within 10' of the planned work area	6	PCM	<0.01	0.024	2,000 ¹ <i>minimum</i>	4.5 – 16

¹ Lower volumes may be collected only if overloading is likely due to dust-generating activities near sampling locations. Documentation of these activities is required on a daily basis as justification for collecting less than 2,000 liters.

3. **Base Line:** a level expressed in fibers per cubic centimeter which is equal to one of the following:
 - a. Indoor Air Standard: 0.01 fibers per cubic centimeter
 - b. Alternative Indoor Air Standard: The upper boundary of the range defined by the 95% confidence level of the average of the first five (5) readable sampled collected outside the work area prior to the start of work.
4. **Daily:**
 - a. **From start of work** of Section 01526 Temporary Enclosures through the work of Section 01711 – Project Decontamination, the Owner’s air monitoring firm will take samples as required by MDH.
 - b. **PCM Samples:**

Duration Sampling	Minimum No. of Samples	Analysis Method	Limit of Detection Fibers/cc	Limit of Quantification Fibers/cc	Recommended Volume (Liters)	Rate-LPM
Glovebag/Mini-Containment	2 ¹	PCM	<0.01	0.024	2,000 ⁴ <i>minimum</i>	4.5 – 16
Outside Each Work Area at Critical Barrier	4 ²	PCM	<0.01	0.024	2,000 ⁴ <i>minimum</i>	4.5 – 16
Output Pressure Differential System	1 ³	PCM	<0.01	0.024	2,000 ⁴ <i>minimum</i>	4.5 - 16

¹ Two (2) air samples must be collected within ten feet (10') of each glovebag/mini-containment operation.

² For each containment, two (2) air samples must be collected simultaneously no less than once during every zero to five-hour period while abatement personnel are performing asbestos-related work from the time the disturbance of asbestos-containing material occurs until the results of clearance air sampling indicate fiber levels in the air within the containment do not exceed the clearance standard or alternative clearance standard. At least one (1) of the samples must be collected within ten feet (10') of the decontamination unit.

³ For every fan unit exhausted indoors, one (1) air samples shall be collected no less than once every zero to four-hour period.

⁴ Lower volumes may be collected only if overloading is likely due to dust generating activities near sampling locations. Documentation of these activities is required on a daily basis as justification for collecting less than 2,000 liters.

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

1.11 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 the analysis method set forth in the AHERA regulation 40 CFR Part 763, Subpart E, Appendix A, Section II, Parts A, E, F, H, I and J.

1.12 LABORATORY TESTING BY OWNER

- A. **The services of a testing laboratory** will be employed by the Owner to perform laboratory analyses of the air samples. A microscope and technician will be set up at the job site, or samples will be sent overnight on a daily basis, so that verbal reports on air samples can be obtained within 24 business hours after they have been received by the laboratory.
- B. **The Contractor will have access** to all air monitoring tests and results upon request.

1.13 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.

1.14 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. **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 Designer will determine the source of the high reading and so notify the Contractor.
 - 1. If the high reading was the result of a failure of Work Area isolation measures initiate the following actions:
 - a. 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 involved space (e.g. wall, ceiling, floor).
 - b. Decontaminate the affected area.
 - c. 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.
 - d. 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.
 - e. 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.
 - f. After Certification of Visual Inspection in the Work Area remove critical barriers separating the work area from the affected area. High Adjacent Response Samples (HARS) will be taken within the entire area as set forth in Section 01711 – Project Decontamination.
 - 2. If the high reading was the result of other causes initiate corrective action as determined by the Designer.
- B. **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, Designer, or Project Administrator** 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, Designer or Project Administrator.
- 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 Designer.

3.3 SCHEDULE OF ASBESTOS-CONTAINING MATERIALS

The following asbestos-containing materials are known to be present at the worksite. If any other materials are found, which are suspected of containing asbestos, notify immediately Owner's Representative.

MATERIAL TYPE	ASBESTOS CONTENT	LOCATION
Pre-Formed Pipe Insulation	30% Chrysotile 20% Amosite	Throughout Building
Millboard Pipe Insulation	10-60% Chrysotile	North Classroom Additions
Mudded Fittings	8-10% Chrysotile	Throughout Building
Ceiling Tile Adhesive Pucks	2% Chrysotile	Throughout 1957 Addition
9" x 9" Floor Tile	5-8% Chrysotile	Throughout Building
12" x 12" Floor Tile	2-5% Chrysotile	Throughout Building
HVAC Duct Insulation	65% Chrysotile	East Lower Custodial/Storage Room
Black Flooring Mastic	3% Chrysotile	Throughout Building
Exterior Wall Insulation Panel Adhesive	2% Chrysotile	North Classroom Additions
North Water Holding Tank	25% Chrysotile	Boiler Room
Brown Tackboard Adhesive	3% Chrysotile	Throughout Building
Gray Chalkboard Adhesive	55% Chrysotile	Northwest Addition
BUR Roof Base Flashing	5% Chrysotile	Southeast Lower Roof
Exterior Windowsill Caulking	5% Chrysotile	Northwest Classroom Addition
White Exterior Wall Caulking	2% Chrysotile	Throughout Building

* END OF SECTION 01013 *

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, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 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 Applications for Payment with the Contractor's Construction Schedule, List of Subcontractors, and Submittal Schedule.
- B. The Contractor's Construction Schedule form is included after Section 00210 - Supplementary Instructions to Bidders.
1. **Contractor's Construction Schedule:** The Contractor's Construction Schedule is specified in Division 1 Section "Coordination - Asbestos Abatement".
 2. **Submittal Schedule:** The Submittal Schedule is specified in Division 1 Section "Submittals".

1.3 SCHEDULE OF VALUES

- A. 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, as appropriate:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment Form.
 - c. List of Subcontractors.
 - d. Schedule of Allowances.
 - e. Schedule of Alternates.
 - f. List of Products.
 - g. List of Principal Suppliers and Fabricators.
 - h. Schedule of Submittals.
 2. **Submit the Schedule of Values** to the Owner's Representative at the earliest feasible date, but in no case later than 7 days before the date scheduled for submittal of the initial Application for Payment.
 3. **Sub-Schedules:** If the work is separated into phases that require separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
- B. **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 Designer.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.

2. **Breakdown Contract Sum** into each of the following items:
 - a. Mobilization
 - b. Preparation of Work Area
 - c. Site Demolition
 - d. Asbestos Abatement
 - e. Project Decontamination
 - f. Other Work
 - g. Project Closeout

3. **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.
 - 1) Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

4. 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 Manual table of contents. Where appropriate, break principal subcontract amounts down into several line items.

5. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.

6. For portions of the Work involving installation of new materials, assemblies or systems, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

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 Designer and paid for by the Owner.
 1. The initial Application for Payment, the Application for Payment at time of Partial 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.

- C. **Payment-Application Forms:** Use AIA Document G702 and Continuation Sheets G703 as the form for Applications for Payment.

- 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 Designer 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 were 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 3 signed and notarized original copies of each Application for Payment to the Designer 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 Designer.
- F. Waivers of Mechanics Lien:** With each Application for Payment, submit partial waivers of mechanics lien from every entity who is lawfully entitled to file a mechanics lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers from each subcontractor, sub-subcontractor 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 and/or Partial Completion Application for Payment:** Submittals that must coincide with submittal of the first Application for Payment, include the following:
1. Waivers of lien.
- I. 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 Project Designer.
 6. Proof that taxes, fees, and similar obligations were paid (IC-134).
 7. Removal of temporary facilities and services.
 8. Removal of surplus materials, rubbish, and similar elements.
 9. Disposal receipts, bills of lading and other required documentation of transportation and disposal of asbestos-containing waste.
 10. Waivers of lien.
 11. Application for reduction of retainage and consent of surety.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

*** END OF SECTION 01028 ***

SECTION 01043

Coordination - Asbestos Abatement

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. **This Section includes** administrative and supervisory requirements necessary for project coordination including, but not necessarily limited to, the following:

1. General project coordination procedures.
2. Contingency Plan.
3. Project Directory.
4. Notifications.
5. Pre-Construction Inspection.
6. Administrative and supervisory personnel.
7. Pre-Construction Conference
8. Progress Meetings
9. Record Keeping.
10. Special Reports.
11. Submittals.

- 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 01701 - Project Closeout - Asbestos Abatement" for coordinating contract closeout.

1.3 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. Excessive heat / cold (if/when such limits are specified)

11. Water leaks
12. Unauthorized entry into work area
13. Elevated air samples outside of containment
14. Repairs inside containment

B. Submit at a pre-construction conference.

1.4 PROJECT DIRECTORY

- A. Develop a directory** of all entities involved in the project. Include the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site. Identify individuals, their duties and responsibilities. List business name, contact person, normal business and emergency telephone, pager and fax numbers and addresses of:
1. Owner, Designer, and Project Administrator
 2. Contractor's Project Supervisor, supervisory personnel and Contractor's home office
 3. Emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.
 4. Local, state, and federal agencies with jurisdiction over the project.
- B. Post:** Post copies of the Project Directory in the project meeting room, the temporary field office, each temporary telephone, and at entrance to clean room of Personnel Decontamination Unit.

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

1.6 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 Designer for record purposes prior to starting work.

1.7 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 Project Supervisor 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 Project Supervisor must have demonstrable experience in the successful management of asbestos abatement projects that are similar to the work of this contract.
 - a. The Project Supervisor must have a minimum of two (2) years experience in the on-site management of asbestos abatement projects.
 3. **Competent Person:** The Project Supervisor is to be a Competent Person as required by OSHA in 29 CFR 1926.
- B. **Accreditation:** The Site Supervisors and Forepersons are to be accredited as Asbestos Abatement Supervisors in accordance with the AHERA regulation 40 CFR Part 763, Subpart E, Appendix C.
- C. **Certification:** The Project Supervisor is to be a Certified Site Supervisor in accordance with:
- Minnesota Department of Health Asbestos Abatement Rules, Part 4620.3310.

1.8 PRE-CONSTRUCTION CONFERENCE

- A. **An initial progress meeting**, recognized as "Pre-Construction Conference" will be convened by the Designer prior to start of any work. The pre-construction conference will be arranged after acceptance of the qualified bidder, at Clarkfield School. Meet at the project site, or as otherwise directed, with Project Supervisor, Owner, Designer, Project Administrator, and other entities concerned with the asbestos abatement work.
- B. **Attendees:** Authorized representatives of the Owner, Designer, 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.
- 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 copies of required worker submittals including: current training certificates, licenses (hard cards) and physician's written opinions.
 8. Submittal of copies of Contractor's License, state notification(s) and permit(s), name and address of landfill used for project waste.
 9. Submittal of project-specific insurance certificates, Bonds for Performance and Labor and Material Payment.
 10. Use of the premises.
 11. Parking availability.
 12. Office, work, and storage areas.

- 13. Equipment deliveries and priorities.
- 14. Security.
- 15. Housekeeping.

1.9 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 Designer will hold general progress meetings as required. These meeting will be scheduled, where possible, at time of preparation of payment request.
- B. **Attendees:** Representatives of the Owner and Designer will attend this 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.
 - 2. Review the present and future needs of each entity present, including the following:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Status of submittals.
 - e. Deliveries.
 - f. Access.
 - g. Site utilization.
 - h. Temporary facilities and services.
 - i. Hours of work.
 - j. Hazards and risks.
 - k. Housekeeping.
 - l. Quality and work standards.
 - m. Change Orders.
 - n. Documentation of information for payment requests.
- D. **Reporting:** Revise the Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule no later than 3 days after each meeting. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1.10 RECORD KEEPING

- A. **Daily Log:** Maintain a Daily Log (in an area accessible to the Owner, Designer 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 breeching, equipment failures, accidents
 - 3. Documentation of Contractor's completion of the following:
 - a. Inspection of work area preparation prior to start of removal and daily thereafter.
 - b. Removal of any sheet plastic barriers

- c. 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.
 - d. Removal of waste materials from work area
 - e. Decontamination of equipment (list items)
 - f. Contractors' final inspection/final air test analysis.
4. Visitations; authorized and unauthorized.
- B. Entry/Exit Log:** Maintain near the decontamination unit, a daily log documenting the dates and time of but not limited to, the following items:
- 1. Personnel, by name, entering and leaving the work area with the following information
 - a. Printed Name
 - b. Certificate Number
 - c. Entry Time
 - d. Exit Time
 - 2. Other individuals who enter the containment must also record the following:
 - a. Name
 - b. Organization
 - c. Entry time
 - d. Exit Time
 - e. Respiratory protection
- C. Air Monitoring Results:** Post personnel air monitoring results within 24 hours of sample collection. Post the respiratory protection requirements for the work in progress.
- D. Records at Decontamination Unit:** Maintain the following documentation, 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, Designer, and Project Administrator including:
- 1. Waste Manifests and shipping records
 - 2. Landfill receipts.
 - 3. Accident reports.

1.11 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 Designer 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, 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, or 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 the work (e.g. leaks, termites, corrosion) prepare and submit a special report indication condition discovered.

1.12 SUBMITTALS

- A. Before the Start of Work:** Submit the following to the Designer:
 - 1. Copy of Contractor's Asbestos Abatement License
 - 2. Copy of Insurance Certificate as required in Section 00800.
 - 3. Performance and Labor and Material Payment Bond.
 - 4. Notifications: copy of notification sent to other entities at the work site, and to MDH and MPCA.
 - 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 legible copies of current training course certificates for the Project 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. Certification: Submit legible copies of current Asbestos Site Supervisor and Asbestos Workers licenses (hard cards) for all individuals who may work on the project.
 - 9. Physician's Written Opinion: Submit legible copies of the current Physician's Written Opinion for all personnel who will wear respiratory protection on the project.

- B. Project Close-out:** Submit one (1) copy 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 (Not Applicable)

*** END OF SECTION 01043 ***

SECTION 01097

Reference and Standards - Asbestos Abatement

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

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 Designer, requested by the Designer, and similar phrases.
3. "Approved": The term "approved," when used in conjunction with the Designer's action on the Contractor's submittals, applications, and requests, is limited to the Designer'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. "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.

9. "Designer": This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." All references to Architect or Engineer in the Contract Documents in all cases refer to the Designer. The Designer will represent the Owner during construction and until final payment is due. The Designer will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Designer.
10. "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 effect.
11. "General Superintendent" or "Project Supervisor": 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 or 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. "Nonfriable 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 concentrations 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 CSRF's 16-Division format and MasterFormat'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 a part of the Contract Documents by reference.
- B. Publication Dates:** Comply with the standards in effect as of the date of the Contract Documents.
- C. 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 Designer 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 Designer for a decision before proceeding.
- D. 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.
- E. 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)354-3300
- 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 E849
b. ASTM Standard Practice for Encapsulants for Spray-or-Trowel-Applied Friable Asbestos-Containing Building Materials E1494
- F. Abbreviations and Names:** Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research Co.'s "Encyclopedia of Associations," available in most libraries.

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 the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 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 persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Contractor shall hold the Owner and Designer 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
 - i. Construction Industry - General Duty Standards
Title 29, Part 1926, Sections 20 through 35 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 Hazard Emergency Response Act (AHERA) Regulation
Title 40, Part 763, Sub-part E of the Code of Federal Regulations
 - b. 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
 - c. 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. State Requirements:** which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:
- Minnesota Pollution Control Agency (MPCA):
- 1. The MPCA has been delegated the authority by the EPA to enforce NESHAP regulations. They may also review projects for compliance with MDH Asbestos Abatement Rules.

2. Guidance Regarding Proper Containment, Shipping and Final Disposal of Asbestos Residual Materials at MPCA-Permitted Landfills (*Minnesota Rules 7035.1700*)

Minnesota Department of Labor and Industry:

1. Maintenance and Repair of Buildings and Equipment—Asbestos (*Minnesota Rules 5205.0660*)
2. Demolition, Restoration, Remodeling Survey (*Minnesota Rules 5207.0035*)

Minnesota Department of Health:

1. Asbestos Abatement Rules (*Minnesota Rules 4620.3000 to 4620.3724 and Minnesota Statute Sections 326.70 to 326.81*)

E. Local Requirements:

1. Abide by all local requirements which govern asbestos abatement work or hauling and disposal of asbestos waste materials.

1.4 NOTICES

- A. Postmark or Deliver Written Notification as required by USEPA National Emission Standards for Hazardous Air Pollutants (NESHAP) Asbestos Regulations (40 CFR 61, Subpart M) at least 10 working days prior to beginning any work on asbestos-containing materials (ACM):**

1. Notification: Include the following information in the notification sent to the NESHAP contact:

Name and address of owner or operator.

Name: Ms. Janel Timm
Address: Yellow Medicine County Schools
180 – 8th Avenue
Granite Falls, MN 56241
County: Yellow Medicine
Phone No.: 320-564-3132

Description of the facility being demolished or renovated, including the size, age, and prior use of the facility.

Size: 200,000 square feet
Age: 1924 Original Building, 195X and 1960
of Floors: Four (4)
Prior Use: Education

B. STATE AND LOCAL AGENCIES

1. Send written notification as required by state and local regulations prior to beginning asbestos-related work.

Send written notification as required by State and local regulations at least ten (10) working days prior to beginning any work on asbestos-containing materials. Send notification to:

MPCA, Industrial Division – Asbestos Program
520 Lafayette Road
St. Paul, MN 55155-4194
E-mail: asbestos.demolition.pca@state.mn.us
Fax: 651-297-1438

2. PERMITS

Asbestos-related work: At least five (5) calendar days prior to commencement of work, submit "Notification of Intent to Perform an Asbestos Abatement Project" with a copy of a signed contract or other written evidence of the total cost of the abatement project and a check in the amount of one per cent of the total cost of the abatement project, made payable to "Minnesota Department of Health", to:

Minnesota Department of Health
Division of Environmental Health
Asbestos/Lead Compliance Unit
P.O. Box 64497
St. Paul, MN 55164-0497
651-201-4610/4620

For purposes of this requirement, "asbestos-related work" is defined as "the enclosure, removal or encapsulation of friable asbestos-containing material in quantities greater than or equal to 260 linear feet on pipes or 160 square feet on other facility components in one facility." "Asbestos-containing material (ACM)" is "material that contains more than one percent asbestos by weight." Include all activity planned within one calendar year.

For purposes of this requirement, "total cost of the abatement project" includes the cost of work area preparation, decontamination, installations, enclosures, alterations, removal and repairs, including, for example:

Wages
Materials
Waste disposal
Profit
Performance bond
Insurance
Administrative overhead

If the final invoice amount exceeds the reported total cost, within five days of submitting final application for payment, submit an amended "Notification of Intent to Perform an Asbestos Abatement Project", written evidence of the final cost and a check for one percent of the difference, as above.

Emergency demolition or renovation: In the event of emergency demolition or renovation, submit notification and fee as above within two (2) days after commencement of work.

3. LICENSES

Licenses: Maintain current licenses as required by applicable State or local jurisdictions for the removal, transporting, disposal or other regulated activity relative to the work of this contract.

Asbestos abatement contractors must be licensed. (*Minnesota Rules 4620.3200*)

Asbestos abatement workers and site supervisors must be certified. (*Minnesota Rules 4620.3250*)

1.5 PERMITS

- A. Permit: All asbestos containing waste is to be transported by an entity maintaining a 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 relative 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 a copy of applicable federal, state and local regulations and standards at job site.

1.8 SUBMITTALS

- A. **Before Start of Work:** Submit the following to the Designer for review. No work shall begin until these submittals have been received by the Designer.

1. **Permits, Licenses, and Certificates:** For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, notices, receipts for fee payments, 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.
2. **Notices:** Submit notices required by federal, state and local regulations together with proof of timely transmittal to 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 ***

SECTION 01301

Submittals – Asbestos Abatement

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including:
1. Submittal schedule.
 2. Daily construction reports.
 3. Product Data.
- 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:
1. Permits
 2. Applications for payment
 3. Performance and payment bonds
 4. Insurance certificates
 5. List of Subcontractors

C. RELATED SECTIONS

1. The following Sections contain requirements that relate to this Section:
 - a. Division 1 Section “Applications for Payment – Asbestos Abatement” specified requirements for submittal of the Schedule of Values.
 - b. Division 1 Section “Coordination” specifies requirements governing submittal and distribution of meeting and conference minutes.
 - c. Division 1 Section “Project Closeout – Asbestos Abatement” specifies requirements for submittal of Project Record Documents and warranties at project closeout.

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 of the work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Designer 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 re-submittals.
1. Allow 2 weeks for initial review. Allow additional time if the Designer 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 Designer 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 for title block.
1. Provide a space approximately 4 by 5 inches 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 Designer.
 - 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.
 3. 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.
- D. Submittal Transmittal:** Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Designer using a transmittal form. The Designer 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 submittal of 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 Designer's final release or approval.

- C. **Distribution:** Following response to the initial submittal, print and distribute copies to the Designer, 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 PRODUCT DATA

- B. **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 one (1) copy of each required submittal.
 - 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.

1.6 MISCELLANEOUS SUBMITTALS

- A. **Safety Data Sheets:** Process safety data sheets (SDS) as "product data." These are submitted for information purposes only.
- B. **Closeout Submittals:** Refer to individual sections of these specifications for specific submittal requirements of project closeout information.
- C. **Record Documents:** Furnish set of original documents as maintained on the project site. Along with original marked-up record drawings provide 2 photographic copies of marked-up drawings, which, at the Contractor's option, may be reduced to not less than half size.

1.7 DESIGNER'S ACTION

- A. Except for submittals for the record or information, where action and return is required or requested, the Designer will review each submittal and notify Contractor if a change or additional information is required.
 - 1. Compliance with specified characteristics is the Contractor's responsibility.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

*** END OF SECTION 01301 ***

SECTION 01301

Submittal Checklist

Project: Clarkfield School
2019 Asbestos Removal

Contractor:

Name

Address

City/State/Zip

Project Stage	Submittal	Reference Sections	Yes	No	Comments
Due With Bid					
	1. Completed Bid Form	00210			
	2. Bid Security	00210			
	3. Responsible Contractor Documents	00210			
	4. Construction Schedule	00210			
Due 24 Hours Post Bid					
	State License	00210			
	References	00210			
	Litigation & Arbitration	00210			
	Fines & Citations	00210			
	Liquidated Damages Statement	00210			
	Authorized Personnel	00210			
	Contractor's Qualification Statement	00210			
	Proof of Standard Insurance Coverage	00210			
	Proof of Asbestos Hazard Insurance Coverage	00210			
	List of Items to be Subcontracted	00210			
	Names of Subcontractors	00210			
Prior to Execution of Contract					
	Financial Information (AIA Form A305)	00210			
	Insurance	00800 & 01043			

Project Stage	Submittal	Reference Sections	Yes	No	Comments
Due at Pre-Construction Meeting					
	Schedule of Values	01028			
	Pre-Construction Inspection Report	01043			
	Performance and Labor and Material Payment Bond	00610			
	Contingency Plan for Emergency Actions	01043			
	Staff Names, Principal Assignments, Addresses, Phone Numbers	01043			
	Permits, Licenses & Certificates	01098			
	Asbestos Worker License	01043 & 01560			
	Asbestos Site Supervisor License	01043 & 01560			
	Training Certificates	01043 & 01560			
	Design of Pressure Differential System	01513			
	Worker Protection Requirements	01560			
	Respiratory Protection Requirements (if applicable)	01562			
	Physician's Written Opinion	01043 & 01560			
	Landfill--Name, Address, Contact Person, Phone Number	02084			
	Detailed Product List Schedule/SDS	01301			
	Product Data Work Area Containment	01526			
	Small-Scale, Short-Duration	01529			
	Decontamination Units	01563			
	Removal of Asbestos-Containing Materials	02081			
Initial and/or Partial Completion Application for Payment					
	Completed Payment Application Form	01028			
	Lien Waivers	01028			

Project Stage	Submittal	Reference Sections	Yes	No	Comments
Final Payment Application					
	Completed Payment Application Form	01028			
	Lien Waivers	01028			
	Project Construction Records	01028			
	Application for Reduction of Retainage & Consent of Surety (if applicable)	01028			
	Disposal receipts, Bills of Lading & other required documentation of transport and disposal of asbestos-containing waste	02084			
	Proof that Taxes, Fees and similar obligations have been paid (IC-134)	01028			
	Daily Log	01043			

SECTION 01503

Temporary Facilities - Asbestos Abatement

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 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, laboratories and storage sheds.
 2. Temporary enclosures.
 3. Hoists and temporary elevator use.
- 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 connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.4 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 having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 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 Designer, the Contractor may use undamaged, previously used materials and equipment in serviceable condition. Provide materials and equipment suitable for use intended.
- B. 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:** Connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. 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 amended 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:** may be secured from the building hot water system, provided backflow protection is installed at point of connection as described in this section under Temporary Water Service connection, and if authorized in writing by the Designer. If hot water is not available from the building hot water system, see below.
- E. **Hot Water Heater:** If applicable, provide UL rated minimum 40 gallon 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" deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart 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 breaker or fused disconnect connected to the buildings 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 a licensed electrician.
 - 2. Access to subpanel shall be made available to Owner's Representative.
- 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 circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.
- 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:** If applicable, 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 COOLING

- A. **Cooling Units:** If applicable, provide temporary cooling units consisting of a fan coil unit inside the work area with a compressor and heat rejection coil outside.

2.6 TEMPORARY STRUCTURES

- A. **Temporary Offices:** If applicable, provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- B. **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 nonabsorbent material.

2.7 FIRST AID

- A. **First Aid Supplies:** Comply with governing regulations and recognized recommendations within the construction industry.

2.8 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 IFC 906, 1415** 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 installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with 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 completed 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.

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, remove from work area via equipment decontamination unit.

3.3 TEMPORARY UTILITY INSTALLATION

A. Water Service:

1. Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm each to hot and cold water supply. Install using vacuum breakers or other backflow preventer as required by local authority. Hot water shall be supplied at a minimum temperature of 100 degrees F. Supply hot and cold water to the Decontamination Unit in accordance with Section 01563.
 - a. Maintain hose connections and outlet valves in leakproof 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.

B. 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 to the Work Area are not to be used. All power and lighting to the Work Area and Decontamination facilities are to be provided from temporary electrical panel described below.
 - 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. Tagout breakers with notation "DANGER circuit being worked on". Lock panel and have all keys under control of authorized person who has locked panel.
 - c. 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" on center with signs reading, "DANGER live electric circuit. Electrocutation 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 panel to existing building electrical system. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Designer. Panel is to be installed by a licensed electrician. Access to panel shall be provided to Owner's Representative.
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 (GFCI) 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 panel. 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 of work area
 - d. One outlet at each decontamination unit, located in 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 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 area in location designated by Designer

C. 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 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 of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas provide one 100-watt incandescent lamp every 50 feet. In stair ways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.
 - b. Provide lighting in areas where work is being performed as required to supply a 100 foot candle minimum light level.
 - c. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.
 - d. Provide lighting in the Decontamination Unit as required to supply a 50 foot candle 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 panel.
4. Circuit Protection: Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

D. 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 gasoline-burning space heaters, open flame, or salamander heating units is prohibited.
3. Maintain a minimum temperature of 70 degrees where finished work has been installed.

4. Maintain a minimum temperature of 75 degrees F in the shower of the decontamination unit.
5. Maintain a minimum temperature of 65 degrees F in the Work Area at all times that work is going on. At all other times and at completion of removal work, but before start of reconstruction work, maintain a minimum temperature of 50 degrees F.

E. Temporary Cooling:

1. Required Cooling: Provide units sufficient to supply 20,000 BTU/hr of cooling per 8,000 cubic feet of work area.

F. Sanitary Facilities:

1. **General:** 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 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 material.
2. Toilets: Provide and install self-contained toilet unit for every thirty (30) workers. Facilities shall be maintained throughout the work.

3.4 FIRE PROTECTION FACILITIES INSTALLATION

A. Temporary Fire Protection: 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, other enclosures or in hazardous fire-exposure areas.

*** END OF SECTION 01503 ***

SECTION 01513

Temporary Pressure Differential & Air Circulation System

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 RELATED SECTIONS

- A. **Heating and cooling requirements** are set forth in Section 01503 Temporary Facilities - Asbestos Abatement.

1.3 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). Device shall be equipped with an audible alarm which will sound if the pressure differential drops below 0.01" of water.

1.4 SUBMITTALS

- A. **Before Start of Work:** Submit design of pressure differential system to the Designer for review. Do not begin work until submittal is received. 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 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. Manufacturer's product data on equipment used to monitor pressure differential between inside and outside of Work Area.
 9. Manufacturer's product data on auxiliary generator to be used (if applicable).
 10. Manufacturer's product data on auxiliary power switch to be used (if applicable).

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 standard-size 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 (e.g., 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, or 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. Audible alarm to indicate too high a pressure drop across the filters (i.e., filter overloading) and too low of a pressure drop (i.e., rupture in HEPA filter or obstructed discharge)
 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 to be 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:

1. **HEPA filtered Fan Units:** The following machines are standard 2000 CFM machines used in typical asbestos abatement jobs.

Aerospace America, Inc.
900 Truman Parkway
PO Box 189
Bay City, Michigan 48707
517-684-2121

“Aero-Clean 2000”

Abatement Technologies
3305 Breckinridge Blvd., #118
Duluth, GA 30136
800-634-9091 or 404-925-2761

“HEPA-AIRE 1990 and HEPA-AIRE 2000”

Global Consumer Services, Inc.
4615-1U E. Industrial St.
Sims Valley, CA 93063
805-579-0230
805-579-0230

M-Tec Corp.
1300 W. Steel Rd.
Unit #2
Morrisville, PA 19067
215-295-8208

Micro-Trap
Alumina II

2. **Large Capacity:** The following are large capacity 5000-6000 CFM machines used on large asbestos abatement jobs.

Abatement Technologies
3305 Breckinridge Blvd., #118
Duluth, GA 30136
800-634-9091 or 404-925-2761

"HEPA-AIRE 5000"
model H5000C

3. **Hazardous Locations:** The following are pneumatically powered machines for use in asbestos abatement jobs in hazardous locations where electric motors are prohibited.

Abatement Technologies
3305 Breckinridge Blvd., #118
Duluth, GA 30136
800-634-9091 or 404-925-2761

"HEPA-AIRE PNEUMATIC"
model H2000P

2.2 AUXILIARY GENERATOR

- A. **Auxiliary Generator:** Provide a gasoline-powered self-starting generator with a capacity adequate to power a minimum of 50% of the HEPA filtered fan units in operation at any time during the work.

2.3 AUXILIARY POWER SWITCH

- A. **Auxiliary Power Switch:** Provide a switching relay which will automatically start auxiliary generator and switch over power supplied to HEPA filtered fan units to auxiliary generator.

PART 3 - EXECUTION

3.1 ADDITIONAL TESTING

- 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:
1. 0.02 inches of water. If unable to maintain a pressure differential of 0.02 inches of water, maintain pressure differential as close as possible to 0.02 and increase the number of air changes per hour in the work area to a minimum of six (6).
- C. Accomplish the pressure differential by exhausting** a sufficient number of HEPA filtered fan units from the work area. The number of units required will depend on machine characteristics, the seal at barriers, and required air circulation. The number of units will increase with increased make-up air or leaks into the Work Area. Determine the number of units required for pressure isolation by the following procedure:
1. Establish required air circulation in the work area, personnel and equipment decontamination units.
 2. Establish isolation by increased pressure in adjacent areas or as part of seals where required.
 3. Exhaust a sufficient number of 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 building unless authorized in writing by Designer.
 6. The Contractor shall be responsible for security at all HEPA-exhaust locations. At a minimum, all exhaust locations shall be faced with a $\frac{5}{8}$ " to $\frac{3}{4}$ " plywood barrier.
 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 inflatable, disposable plastic ductwork in lengths not greater than 100 feet.
 11. Use spiral wire-reinforced flex duct in lengths not greater than 50 feet.
 12. Arrange exhaust as required to inflate duct to a rigidity sufficient to prevent flapping.
 13. If direction of discharge from fan unit is not aligned with duct use sheet metal elbow to change direction. Use six feet of spiral wire reinforced flex duct after direction change.
- 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 polyethylene. Construct a barrier from $\frac{1}{2}$ " CDX plywood supported by 2" x 4" wood studs at 16" on centers. Space face of barrier a minimum of 3" from face of door. Seal barrier with 6 mil sheet plastic and duct tape.
 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 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 AUXILIARY GENERATOR

- A. Provide auxiliary gasoline-powered generator** located outside of the building in a location protected from the weather. Install the generator in a location so that the exhaust from the generator does not flow to any building ventilation or supplied air intakes. Arrange so that if a power failure occurs the generator automatically starts and supplies power to a minimum of 50% of the HEPA filtered fan units in operation.

3.3 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. four (4) and/or six (6) air changes per hour
 2. If unable to maintain pressure differential of 0.02 inches of water across physical or critical barrier, provide a minimum of six (6) air changes per hour.
- D. Determine Number of Units needed to achieve 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. Divide the air circulation requirement (CFM) above by capacity of HEPA filtered fan unit(s) used. Capacity of a unit for purposes of this section is seventy-five percent (75%) of the rated capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machine's labeled operating characteristics.
4. Number of Units Needed =

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

5. Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

3.4 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 air circulation requirement of this section.
 2. **Location of HEPA Filtered Fan Units:** 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 wall covering. Seal plastic around the unit or duct with tape.
 4. **Vent to Outside of Building,** unless authorized in writing by the Designer.
 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.
7. **Supplemental Makeup Air Inlets:** Provide where required for proper air flow through the Work Area in location approved by the Designer by making openings in the plastic sheeting that allow air from outside the building into the Work Area. Locate auxiliary makeup air inlets as far as possible from the fan unit(s) (e.g., on an opposite wall), off the floor (preferably near the ceiling), and away from barriers that separate the Work Area from occupied clean areas. Cover with flaps to reseal automatically if the pressure differential system should shut down for any reason. Spray flap and around opening with spray adhesive so that if flap closes meeting surfaces are both covered with adhesive. Use adhesive that forms contact bond when dry.

3.5 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.

3.6 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 Designer 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, 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 a constant pressure differential and air circulation until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.
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 Designer 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 – Project Decontamination, 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 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, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 SUBMITTALS

- A. **Before Start of Work**, submit the following to the Designer for review. Do not begin work until these submittals are received.
1. **Safety Data Sheet:** Submit Safety Data Sheets (SDS), 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 size possible to minimize seams, clear, four to six (4-6)-mil.

2.2 MISCELLANEOUS MATERIALS

- A. **Duct Tape:** Provide duct tape in 2 inch or 3 inch 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 Barriers
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 the 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 so as to prevent asbestos-containing dust or debris from passing beyond the isolated area. Should the area beyond the Work Area(s) become contaminated with asbestos-containing dust or debris as a consequence of the work, clean those areas in accordance with the procedures indicated in Section 01711 – Project Decontamination. Perform all such required cleaning or decontamination at no additional cost to owner.
- C. **Size:** Construct enclosure with sufficient volume to encompass all of 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.
- D. **Shape:** The enclosure may be any shape that optimizes the flow of ventilation air past the worker(s).
- E. **Structural Integrity:** The walls, ceilings and floors must be supported in such a manner that portions of the enclosure will not fall down during normal use.
- F. **Barrier Supports:** Where critical barrier walls are required, the barrier will be structurally supported with 2"x4" lumber, floor to ceiling, with a distance no greater than six feet (6') between supports. A layer of polyethylene critical barrier shall be placed on each side of the lumber supports. Tunnel critical barrier walls shall be constructed in a manner so as to allow a minimum of three feet (3') passage clearance between permanent structure and temporary barrier wall.
- G. **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. In the event that 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 airlock or a vestibule.
- H. **Place all tools, scaffolding, staging, etc.** necessary for the work in the area to be isolated prior to completion of Work Area isolation.
- I. **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 contamination control area by physical curtains, doors, and/or airflow patterns that force any airborne contamination back into the work area.
- J. **Removing Mobile Objects:** All movable objects are to be removed from the work area before an enclosure is constructed. Mobile objects which harbor suspect dust or debris 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. Any immovable objects must be covered with two (2) layers of six (6)-mil polyethylene sheeting and sealed with duct tape.
- K. **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 six (6)-mil polyethylene to prevent entrainment of contaminated air.

- L. **Operating HVAC Systems in the regulated Area:** If components of a HVAC system located in the regulated area are connected to a system that will service another zone during the project, the portion of the duct in the regulated area must be sealed and pressurized. Necessary precautions include caulking the duct joints, covering all cracks and openings with two layers of sheeting, and pressurizing the duct throughout the duration of the project by restricting the return air flow. The power to the fan supplying the positive pressure should be locked "on" to prevent pressure loss.
 - 1. If fan providing positive pressure fails for any reason, immediately stop asbestos removal work, mist the area to reduce airborne fiber levels. Notify the Project Administrator. Do not re-start asbestos removal work until authorized by the Designer.
- M. **Lock out 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. **Lock out power** to circuits running through work area wherever possible by switching off all breakers or removing fuses serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of authorized person who applied locks. If circuits cannot be shut down for any reason, label at intervals 4 feet on center with signs reading, "DANGER live electric circuit. Electrocutation hazard." Label circuits in hidden locations but which may be affected by the work in a similar manner.
- O. **Temporarily plug and seal all drains in the work area** excluding any drain used for filtered water. When drainage is required, provide 20 micron and 5 micron wastewater filters in line to drain. Change filters daily or more often as necessary.
- P. **Inspection Windows:** Install inspection windows in locations shown on the plans or as directed by the Designer. 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 above floor height in a manner that provides unobstructed vision from outside to inside of the Work Area. Protect window from damage from scratching, dirt or any coatings used during the work. A sufficient number of windows are to be installed to provide observation of all portions of the Work Area that can be made visible from adjacent areas. Inspection windows that open into uncontrolled area are to be covered with a removable plywood hatch secured by lock and key. Provide keys to Designer 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 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 outline. Arrange Primary and Critical 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.

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 Designer a list of doors and other openings that must be secured to isolate Work Area. Include on list notation if door or opening is in an indicated exit route.

2. After receiving written authorization from the Designer lock all doors into Work Area. Cover any signs that direct emergency exiting, either outside or inside of Work Area, to locked doors. Do not obstruct doors required for emergency exits from Work Area or from building.
 3. Modify elevator controls to prevent elevators from stopping at doors in Work Areas. This work is to be performed by a qualified elevator technician.
 4. 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 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. Replace locksets or passage sets on doors leading to decontamination units with temporary locksets for duration of the project. Remove any deadbolts or padlocks. Use entry type locksets that are key lockable from outside and always unlocked and operable from inside. After meeting contractor release criteria set forth in Section 01711 – Project Decontamination reinstall original locks, passage sets and locksets and adjust for proper operation.
 3. Provide one key for each door to Owner, and Designer and maintain one key on-site (3 total).
- C. Visual Barrier:** Where the Work Area is immediately adjacent to or within view of occupied areas, provide a visual barrier of opaque polyethylene sheeting at least 6-mil in thickness so that the work procedures are not visible to building occupants. Where this visual barrier would block natural light, substitute frosted or woven rip-stop sheet plastic in locations approved by the Designer.
- D. Demarcation:** Demarcate the regulated area in any manner that 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.
- E. Access:** Limit access to regulated areas to authorized persons as defined by OSHA, and to the Owner, Designer, Project Administrator or a representative authorized by one of these entities.
- F. Provide Warning Signs** at each locked door leading to Work Area reading as follows:
1. Provide Warning Signs at each locked door leading to Work Area reading as follows

Legend	Notation
KEEP OUT	3 inch Sans Serif Gothic or Block
CONSTRUCTION	1 inch Sans Serif Gothic or Block
WORK AREA	1 inch 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 inch by 14 inch manufactured reflective caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
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 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

3.6 CRITICAL BARRIERS

- A. **Completely Separate** the Work Area from other portions of the building, and the outside by closing all openings with sheet plastic barriers at least 6 mil in thickness.
- 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 polyethylene sheeting at least 6-mil in thickness, taped securely in place with duct tape. Maintain seal until all work including Project Decontamination is completed. Take care in sealing of lighting fixtures to avoid melting or burning of sheeting.
- C. **Provide Sheet Plastic** barriers at least 6 mil in thickness as required to seal openings completely from the Work Area into adjacent areas. Seal the perimeter of all sheet plastic barriers with duct tape or spray cement.
- D. **Mechanically Support** sheet plastic independently of duct tape or spray cement seals so that seals do not support the weight of the plastic. Following are acceptable methods of supporting sheet plastic barriers. Alternative support methods may be used if approved in writing by the Designer.
1. Plywood squares 6 inch x 6 inch x 3/8 inch held in place with one 6d smooth masonry nail or electro-galvanized common nail driven through center of the plywood and duct tape on plastic so that plywood clamps plastic to the wall. Locate plywood squares at each end, corner and at maximum 4 feet on centers.
 2. Nylon or polypropylene rope or wire with a maximum unsupported span of 10 feet, minimum 1/4 inch in diameter suspended between supports securely fastened on either side of opening at maximum 1 foot below ceiling. Tighten rope so that it has 2 inches maximum dip. Drape plastic over rope from outside Work Area so that a two foot long flap of plastic extends over rope into Work Area. Staple or wire plastic to itself 1 inch below rope at maximum 6 inches on centers to form a sheath over rope. Lift flap and seal to ceiling with duct tape or spray cement. Seal loop at bottom of flap with duct tape. Erect entire assembly so that it hangs vertically without a "shelf" upon which debris could collect.
- E. **Provide Pressure Differential System** per Section 01513.
1. Clean housings and ducts of all overspray materials prior to erection of any Critical Barrier that will restrict access.

3.7 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 prior to being moved. Objects that cannot be moved from the work area must be covered with two (2) layers of six (6)-mil polyethylene sheeting that is secured with duct tape to achieve an air-tight seal around them.

- 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 (2) layers of six (6)-mil polyethylene sheeting. The sheeting should be secured with duct tape or an equivalent method to provide a tight seal around the object.

3.8 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. **Sealing Elevators:** If an elevator shaft is located in the regulated area, it should be either shut down or isolated by sealing with two layers of plastic sheeting. The sheeting should provide enough slack to accommodate the pressure changes in the shaft without breaking the air-tight seal.
 - 2. **Sheet Plastic:** Protect surfaces in the Work Area with two (2) layers of plastic sheeting on floor, if applicable, and one (1) layer on walls, or as otherwise directed on the Contract Drawings or in writing by the Designer. Note that a secondary barrier (a third layer) of six (6)-mil polyethylene sheeting is required as a drop sheet to protect the primary layers from debris and damage (See Section 02081). 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 6 mil in thickness, turned up walls at least 12 inches. Form a sharp right angle bend at junction of floor and wall so that there is no radius which could be stepped on causing the wall attachment to be pulled loose. Both spray-glue and duct tape all seams in floor covering. Locate seams in top layer six feet from, or at right angles to, seams in bottom layer. Install sheeting so that top layer can be removed independently of bottom layer.
 - c. Cover all walls in Work Area including "Critical Barrier" sheet plastic barriers with one layer of polyethylene sheeting, at least 4-mil in thickness, mechanically supported and sealed with duct tape or spray-glue in the same manner as "Critical Barrier" sheet plastic barriers. Tape all joints including the joining with the floor covering with duct tape or as otherwise indicated on the Contract Documents or in writing by the Designer.
 - d. **Repair of Damaged Polyethylene Sheeting:** Remove and replace plastic sheeting which has been damaged by removal operations or where seal has failed allowing water to seep between layers. Remove affected sheeting and wipe down entire area. Install new sheet plastic only when area is completely dry.

3.9 STOP WORK

- A. **If the Primary or Critical 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 by the Designer.

3.10 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.

3.11 SECONDARY BARRIER

- A. **Secondary layer** of plastic as a drop cloth to protect the primary layer(s) and/or surfaces from debris generated by the asbestos abatement work is specified in the appropriate work sections.

*** END OF SECTION 01526 ***

SECTION 01527

Regulated Areas

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. **Worker Protection:** is specified in Section 01560 "Worker Protection – Asbestos Abatement".
- B. **Respiratory Protection:** is specified in Section 01562 – "Respiratory Protection"
- C. **Wet Decontamination Facilities:** are described in Section 01563 – "Decontamination Units."

1.3 DESCRIPTION OF WORK

- A. Work of this section consists of preparing a Regulated Area for work of the following specification sections only. Do not use procedures set forth in this section in connection with any other work.
1. Section 01529 – Mini Enclosures and Glovebags
 2. Section 02061 – Building Component Demolition
 3. Section 02081 – Removal of Asbestos-Containing Materials
 4. Section 02087 – Resilient Flooring Removal

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. Polyethylene Sheet: Provide flame-resistant polyethylene film that conforms to requirements set forth by the National Fire Protection Association Standard 701, Small-Scale Fire Test for Flame-Resistant Textiles and Films. Provide largest size possible to minimize seams, 4.0 and 6-mil thick, clear, frosted or black polyethylene.

PART 3 - EXECUTION

3.1 SECURING WORK AREA

- A. **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 persons outside the area from exposure to airborne concentrations of asbestos.
 1. **Drop Cloth:** Cover floor in vicinity of Work Area and six (6) feet beyond, with 6 mil polyethylene drop sheet. Where work is adjacent to wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the Regulated Area.
 2. **Signs:** Post warning signs that carry the following legends in both English and any other language applicable to the primary language of the Contractor's Crew members working at the site:
 - a. **First Sign:** Provide warning signs at each locked door leading to the controlled area reading as follows:

Legend	Notation
KEEP OUT	3 inch Block

- b. **Second Sign:** Immediately inside the locked door and outside the controlled area post an approximately 20 inch by 14 inch manufactured reflective 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. **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 wide polyethylene ribbon with the printed warning, "CAUTION ASBESTOS REMOVAL". Install this ribbon at between 3 and 4 feet 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** have application to 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 an OSHA Competent Person as described in Section 01043 –Coordination – Asbestos Abatement
 2. Before start of work comply with requirement for worker protection in Section 01560 “Worker Protection – Asbestos Abatement”.
 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 beyond, with 6 mil polyethylene drop sheet. Where work is adjacent to wall, extend drop sheet up wall and secure at ceiling with duct tape. This drop sheet demarcates the boundary of the Regulated Area.
 7. Seal all openings, supply and exhaust vents, and convectors within ten (10) feet of the Work Area with 6 mil polyethylene sheeting secured and completely sealed with duct tape.
 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. Worker 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 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 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 use of a HEPA filter vacuum until no visible residue remains.
- B. **At completion of work** require all workers to complete decontamination procedures in accordance with Section 01560 “Worker Protection – Asbestos Abatement”.

- C. **Remove respirators** using the procedure in Section 01560 – “Worker Protection – Asbestos Abatement”.
- D. **At completion of work**, if applicable, require all workers to complete wet decontamination procedures in accordance with Section 01560 Worker Protection – Asbestos Abatement.

*** END OF SECTION – 01527 ***

SECTION 01529

Mini-Enclosures and Glovebags

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to 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 III 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 received by the Designer.
1. 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 received by the Designer.
1. Safety Data Sheet: Submit Safety Data Sheets (SDS), 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 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**: A single polyethylene film in the largest sheet size possible to minimize seams, clear, four to six (4-6)-mil.

2.3 MISCELLANEOUS MATERIALS

- A. **Duct Tape:** Provide duct tape in 2 inch or 3 inch 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 start of work of this section:
 - 1. Section 01527 – Regulated Areas

3.2 WORKER PROTECTION

- A. Before beginning work with any material for which a Safety Data Sheet (SDS) has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.
- B. For each glovebag operation and/or mini-containment operations, a remote decontamination unit must be available and used that complies with Minnesota Asbestos Abatement Rules, Part 4620.3569, Subpart 1 (Items B to D) and 2.

3.3 GLOVEBAGS

- A. **Complete requirements** of the following:
 - 1. Section 01562 – Respiratory Protection
 - 2. Section 01560 – “Worker Protection – Asbestos Abatement”
- B. **Glovebag:** Remove asbestos-containing material inside a glove bag according to the following procedure:
 - 1. Before the glovebag operation begins, the area within ten feet (10’) of the glovebag operation must be cleaned using HEPA-filtered vacuum and/or wet methods.

2. Place 6-mil polyethylene drop cloth directly below glove bag location, extending six feet (6') beyond work area.
3. Check pipe where the work will be performed. Wrap damaged (broken lagging, hanging, etc.), pipe in two (2) layers of 6-mil polyethylene and "candy-stripe" with duct tape. Place one layer of duct tape around undamaged pipe at each end where the glove bag will be attached.
4. 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 glovebag will be clear of the pipe after installation.
5. Place necessary tools into pouch located inside glove bag. This will usually include: bone saw, utility knife, rags, scrub brush, wire cutters, tin snips and pre-wetted cloth.
6. Place one strip of duct tape along both edges of the open top slit of glove bag for reinforcement.
7. Place the glove bag around section of pipe to be worked on and staple top together through reinforcing duct tape. Staple down sides approximately six inches (6") so that the top of the glovebag 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.
8. Use 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 smoke tube and twist water sleeve closed. While holding the water sleeve tightly, gently squeeze 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.
9. Insert wand from garden sprayer through water sleeve. Duct tape water sleeve tightly around the wand to prevent leakage.
10. 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.
11. One person places his hands into the long-sleeved gloves while the second person directs garden sprayer at the work.
12. 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.
13. Remove insulation using putty knives or other tools. Place pieces in bottom of bag without dropping.
14. Rinse all tools with water inside the bag and place back into pouch.
15. Using scrub brush, rags and water, scrub and wipe down the exposed pipe until no visible asbestos-containing material remains.
16. All exposed asbestos-containing material within the glove bag must be encapsulated with an encapsulant before the glove bag is removed.
17. Before the glove bag is removed, the interior surfaces of the glove bag must be cleaned using an airless or Hudson-type sprayer until no visible residue is seen on the top and vertical sides of the glove bag.
18. Tools must be removed from the glove bag as specified in this item.
 - a. With hands in the gloves, tools must be grabbed and the gloves pulled inside out.
 - b. The air in the glove bag must be evacuated using a HEPA-filter equipped vacuum.
 - c. With the tools in them, the glove must be twisted and sealed with tape. The glove must then be cut off by cutting across the middle of the tape.
 - d. The glove containing the tools must be labeled as asbestos-containing material.
 - e. The glove containing the tools must be opened only inside another glove bag, decontamination unit, containment, or when submerged under water.
 - f. The glove containing the tools, if transported off site, must be placed in a leak-tight container and labeled as asbestos-containing material.
 - g. That portion of the sprayer that was inside the glove bag must be wet wiped as it is pulled out of the glove bag. The hole resulting from removal of the sprayer must immediately be sealed with tape.
19. The glove bag must be collapsed using a HEPA-filtered equipped vacuum.
20. After the glove bag is collapsed, the glove bag must be squeezed tightly as close to the top of the glove bag as possible, twisted, and bound with tape.
21. The glove bag must then be cut from the pipe or other facility component and placed in a leak-tight container.
22. The area beneath the glove bag operation must be inspected for any dust or debris resulting from the glove bag operation.
23. Dust and debris from the glove bag operation must be assumed to be asbestos-containing material and must be cleaned using a HEPA-filter equipped vacuum or wet wiped.

24. The 6-mil polyethylene sheeting must not be reused. The sheeting must be bagged and labeled as asbestos-containing waste.
25. Workers must decontaminate using a remote decontamination unit placed within twenty (20) feet of the glove bag operation, or used with the procedures listed below to prevent contamination of any area between the glove bag operation and the remote decontamination unit.
 - a. For an individual wearing a single layer of protective clothing, before leaving the asbestos work area, the individual must use a HEPA-filter equipped vacuum to remove contamination from protective clothing and exposed body surfaces. A clean second layer of protective clothing must be placed over existing protective clothing before proceeding to the remote decontamination area.
 - b. For an individual wearing two layers of protective clothing, before leaving the asbestos work area, the individual must use a HEPA-filter equipped vacuum to remove contamination from the outer layer of protective clothing and exposed body surfaces. The individual must then remove the outer layer of protective clothing before proceeding to the remote decontamination unit.

3.4 MINI-ENCLOSURES

- A. A **mini enclosure** is a small walk-in enclosure which accommodates no more than two persons. Provide a fabricated or job-made enclosure constructed of 6-mil plastic or equivalent. Place the enclosure under negative pressure by means of a HEPA filtered vacuum or similar HEPA filtered ventilation unit. Negative pressure must be maintained until completion criteria are met.
- B. Provide a **remote personnel decontamination unit** meeting requirements of Section 01563 – “Decontamination Units” for worker decontamination. The negative pressure must be maintained until completion criteria are met.
- 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. Before the mini-containment operation begins, the area within ten (10) feet of the mini-containment operation must be cleaned using a HEPA-filtered equipped vacuum, wet wiping, or both, until no dust or debris is visible.
- E. **Work Room:** Construct Work Room in the same manner as a Primary Barrier fabricated from 6 mil sheet plastic. Arrange so that Primary Barrier provides both a Primary and Critical Barrier. Line walls and floor of Work Room with a continuous Secondary Barrier.
- F. **Change Room:** Provide an approximately 3 feet by 3 feet Change Room, with additional space as required for storage, attached to each Work Room. Fabricate Change Room from 6 mil sheet plastic in the same manner as a Primary Barrier. Locate so that access to Work Area is through Change Room.
- G. **Step Off Area:** Cover floor in front of entry to Change Room with one layer of 6 mil sheet plastic. Securely anchor sheet plastic to prevent slipping.
- H. **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 longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side from duct tape on inside and outside of door.

- I. **Signage:** At entry to Change Room post an approximately 20 inch by 14 inch manufactured caution sign displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

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.

J. **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.

- K. **Testing:** The mini-enclosure shall be inspected for leaks and smoke tested to detect breaches, and breaches sealed.

L. **Entry to Work Room:** Require that any time a worker enter 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 Change Room be sure that entry is completely closed.
3. Enter Work Room be sure that entry is completely closed.

M. **Work Procedures:**

1. Surfaces from which asbestos-containing material has been removed must be thoroughly cleaned until no visible asbestos-containing material remains.
2. All exposed asbestos-containing material within the mini-containment must be encapsulated before the mini-containment is removed.
3. Every mini-containment operation must be completed according to the following procedures:
 - a. All tools and equipment used in the mini-containment must be wet wiped until no visible residue remains.
 - b. The wet wiped tools and equipment must be passed through the mini-containment door in a sealed, leak-proof container.
 - c. The leak-proof container containing the tools must be opened only inside another mini-containment, decontamination unit, containment or when submerged under water.
 - d. If the leak-proof container with the tools is transported off-site, the container must be labeled as asbestos-containing material.
 - e. After the asbestos removal, encapsulation, or enclosure is complete, the interior of the mini-containment must:
 1. be cleaned using HEPA-filter equipped vacuuming, wet wiped or both; or
 2. have an encapsulant applied to the interior of the mini-containment.
4. Before the mini-containment is removed, a visual inspection of the interior of the mini-containment and the abated surfaces must be performed.

5. The mini-containment must be removed as specified in this item. The mini-containment must be removed by:
 - a. sealing the door and collapsing the containment using a HEPA-filter equipped vacuum; or
 - b. tearing down the mini-containment only after the results of clearance air sampling indicate that fiber levels within the mini-containment do not exceed the clearance standard or alternative clearance standard.

 6. Pre-formed Pipe Insulation: remove preformed pipe insulation either air cell (corrugated paper), plaster, or millboard (layered cardboard) using the following procedures:
 - a. HEPA vacuum the work site.
 - b. Wet surface with amended water or removal encapsulant.
 1. Air Cell (corrugated paper type): Use a hand pump garden sprayer to inject amended water or removal encapsulant into the corrugations of the insulation. Push the nozzle halfway through the insulation and inject amended water or removal encapsulant until it begins to run out the joints on either end of the section of insulation.
 2. Plaster and Mill Board: Inject amended water in lateral and annular joints until water runs out both ends of section.
 - c. Allow the amended water or removal encapsulant to soak in. If the insulation is the consistency of moist putty, it may be removed; otherwise, inject more amended water or removal encapsulant and wait for it to soak in.
 - d. Slit jacket of the insulation at both lateral and annular joints, cut metal bands and lower into an asbestos disposal bag held open below the pipe.
 - e. Clean the exposed pipe with wet decontamination procedures. Dispose of the rags or paper towels in the disposal bag used above.
 - f. Collapse the bag with a HEPA vacuum, twist top of bag, seal with at least 3 wraps of duct tape, bend over top and seal again with at least 3 wraps of duct tape.
 - g. Seal exposed ends of remaining pipe insulation in accordance with Section 09805.

 7. Job Molded Pipe Fitting Insulation: Thoroughly wet with amended water or removal encapsulant and allow to soak in. Wet adequately to penetrate and soak material through to substrate.

 8. Ceiling/Tackboard Adhesive: Spray asbestos-containing ceiling/wall tile mastic adhesive with a fine mist of amended water. Do not over-saturate to cause excess dripping. Scrape materials from substrate. Remove materials in manageable quantities and control the descent to staging or floor below. Do not allow mastic material to fall to the floor. When using amended water, spray mist surface continuously during work process. Remove residue remaining on scratch coat after scraping using stiff nylon bristled hand brush. If substrate dries before complete removal of residue, re-wet with amended water
- N. 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 with 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 respirator in place to Change Room.
 5. Be sure that entry to Work Area is completely closed.
 6. In Change Room don clean disposable suit leaving respirator in place.
 7. Exit change room be sure that entry to Change Room is completely closed. Proceed to next Mini-Enclosure, or a remote shower.
 8. At end of workday decontaminate fully in accordance with procedures in appropriate specification section describing Worker Protection.
- O. 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 on Step Off Area.
 2. Equipment and bagged debris are to be removed from the Mini-Enclosure in separate operations.
 3. Worker in 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. Worker in Change Room wet cleans each piece of equipment or bag and stores them in Change Room. Equipment is sealed completely in 6 mil 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.
- P. Mini-Enclosure Decontamination:** At completion of all work decontaminate the Work and Changing Rooms as set forth in Section 01711 – Project Decontamination.

*** END OF SECTION – 01529 ***

SECTION 01560

Worker Protection – Asbestos Abatement

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to 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 state or local code or regulation.
 - 1. Workers must be certified according to Minnesota Rules 4620.3300.
- 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).
- D. **Training - Class II Intact (Non-Friable):** Provide training for workers who will be performing Class II work involving only the removal and/or disturbance of one generic category of building material, such as roofing materials, flooring materials, siding materials or cement asbestos panels; which includes as a minimum the specific work practices and engineering controls which specifically relate to that category. Provide a course that includes "hands-on" training and takes at least 8 hours. Provide training that includes the elements set forth in 29 CFR 1926.1101(k) and the Compliance Directive CPL 2-2.63.
- E. **Training - Class II Non-Intact (Friable):** Provide training for workers who will be performing Class II work on materials that are friable, or will become friable during the work that is the equivalent in curriculum, training method and length to the EPA Interim Final 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,
 - a. For the purposes of this paragraph, any day in which a worker engages in Class II or Class III work or a combination thereof for one hour or less (taking into account the entire time spent on the removal operation, including cleanup) and, while doing so, adheres fully to the work practices specified in the OSHA standard (29 CFR 1926.1101) is not counted.
 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 Designer for review. Do not start work until these submittals are received by the Designer:
1. **AHERA Accreditation:** Submit copies of certificates from an EPA-approved AHERA Abatement Worker or Site Supervisor 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:** Provide copies of all worker licenses as required by state or local code or regulation. The Contractor shall ensure that a current certificate plus current photo identification is available at the work site for verification of the identity and certification of each employee.
 3. **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.

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 any employee performing Class I operations which involve the removal of over 25 linear or 10 square feet 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 a sufficient number for all required changes, for all workers in the Work Area.
- C. **Additional Protective Clothing:** Provide each worker with the protective clothing as required by Federal State and local regulations. This includes, but is not necessarily limited by Hardhats, Cold weather gear, Glove, boots and goggles.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT

- A. Disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Designer, 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 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 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 body, hair, respirator face piece, and all parts of the respirator except the blower unit and battery pack on a PAPR. Pay particular attention to seal between face and respirator and under straps.
 - 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 breath.
 - f. Carefully wash facepiece of respirator inside and out.
 - 2. If using PAPR: shut down in the following sequence, first cap inlets to filter cartridges, then turn off blower unit (this sequence will help keep debris which has collected on the inlet side of filter from dislodging and contaminating the outside of the unit). Thoroughly wash blower unit and hoses. Carefully wash battery pack with wet rag. Be extremely cautious of getting water in battery pack as this will short out and destroy battery.
 - 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. Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a half or full face cartridge type respirator:
- a. When exiting area, remove disposable coveralls, disposable headcovers, 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 and filters to avoid asbestos fibers while showering. The following procedure is required as a minimum:
 - c. Thoroughly wet body from neck down.
 - d. Wet hair as thoroughly as possible without wetting the respirator filter if using an air purifying type respirator.
 - e. Take a deep breath, hold it and/or exhale slowly, complete wetting of hair, thoroughly wetting face, respirator and filter (air purifying respirator). While still holding breath, remove respirator and hold it away from face before starting to breath.
 - f. Dispose of wet filters from air purifying respirator.
 - g. Carefully wash facepiece of respirator inside and out.
 - h. Shower completely with soap and water.
 - i. Rinse thoroughly.
 - j. Rinse shower room walls and floor prior to exit.
 - k. Proceed from shower to Changing Room and change into street clothes or into new disposable work items.

B. 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 require that he enter 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.

*** END OF SECTION 01560 ***

SECTION 01562

Respiratory Protection

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to 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 wear a respirator, properly fitted on the face in the Work Area from the start of any operation which may cause airborne asbestos fibers until the Work Area is completely decontaminated. Use respiratory protection appropriate for the fiber level encountered in the 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.
- 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 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-OPTS-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

1.5 SUBMITTALS

- A. **Before Start of Work** submit the following to the Designer for review. Do not begin work until these submittals are received by the Designer.
 - 1. **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.

1.6 AIR QUALITY FOR SUPPLIED AIR RESPIRATORY SYSTEMS

- A. **Provide air** used for breathing in supplied air respiratory systems that meets 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	CGA Type 1 (Gaseous Air)			CSA Z180.1
	Grade D	Grade E	Grade H	
Carbon Monoxide, PPM/v	20	10	5	5
Carbon Dioxide, PPM/v	1000	500	500	500
Condensed Hydrocarbons, mg/cu. meter	5	5	---	1
Gaseous Hydrocarbons—as methane, PPM/v	---	---	10	25
Water Vapor—PPM/v Dewpoint	(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 contaminants	---	---	---	(2)
Inorganic particulates, mg/cu. meter	---	---	---	1
---	Indicates that the standard shows no limiting characteristics.			
(1)	The CGA standards do not call out a specific moisture limit when the ambient temperature is above freezing. However, since a moisture content no greater than a -50 degrees Fahrenheit Dewpoint (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 Dewpoint or better.			
(2)	Maximum allowable content of trichlorofluoroethane, 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 to job site in manufacturer's containers.

PART 2 - EQUIPMENT

2.1 AIR PURIFYING RESPIRATORS

- A. **Respirator Bodies:** Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit (0 degrees Celsius).
- B. **Filter Cartridges:** Provide, at a minimum, HEPA type filters labeled with NIOSH 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 Certification.
- C. **Non-permitted respirators:** Do not use single use, disposable or quarter face respirators.

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 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 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 in excess of 5 PPM/V
- G. **Carbon Monoxide (CO) Monitor:** Continuously monitor and record on a strip chart recorder Carbon Monoxide (CO) levels. Place monitors in the air line between compressor and back-up air supply and between backup air supply and workers. Connect monitors so that they also sound an alarm as specified under "Warning Devices".
- 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 Motor:** Provide a compressor driven by an electric motor. Do not use a gas or diesel engine to drive compressor. Insure that electrical supply available at the work site is adequate to energize motor.
- J. **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 occupied portions of the building.
- K. **Air Intake:** Locate air intake remotely from any source of automobile exhaust or any exhaust from engines, motors, auxiliary generator or buildings.
- L. **After-Cooler:** Provide an after-cooler at entry to filter system which is capable of reducing temperatures to outside ambient air temperatures.

- M. **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 respirators be used in the following circumstances:**
1. During all Class I asbestos jobs.
 2. During all Class II work where the ACM is not removed in a substantially intact state,
 3. During all Class II and III work which is not performed using wet methods.
 4. During all Class II and III asbestos jobs where the employer does not produce a "negative exposure assessment".
 5. During all Class III jobs where TSI or surfacing ACM or PACM is being disturbed.
 6. During all Class IV work performed within regulated areas where employees performing other work are required to wear respirators.
 7. During all work covered by this section where employees are exposed above the OSHA PEL (TWA, or excursion limit).
 8. In emergencies. During emergencies where the airborne asbestos fiber concentration is not known, a self-contained breathing apparatus (SCBA) must be used.
- C. **Require that respiratory protection be used at all times that there is any possibility of disturbance of ACM whether intentional or accidental.**
- D. **Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause airborne fibers until the area has been cleared for re-occupancy in accordance with Section 01711 – Project Decontamination.**
- E. **Regardless of Airborne Fiber Levels:** Require that the minimum level of respiratory protection used be half-face air-purifying respirators with high efficiency filters.
- F. **Do not allow** the use of single-use, disposable, or quarter-face respirators for any purpose.

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 actually worn by each individual. Allow an individual to use only those respirators for which training and fit testing has been provided.
- B. **On an Annual 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 user check seal 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. **Level of Respiratory Protection:** Determine the proper level of respiratory protection by dividing the expected or actual airborne fiber count in the Work Area by the "protection factors" given below. The level of respiratory protection which supplies an airborne fiber level inside the respirator, at the breathing zone of the wearer, at or below the Specified Permissible Exposure Limits (PEL) set forth in this Section is the minimum level of protection allowed.
- C. **Specific Respiratory Protection Requirements:** Provide respiratory protection as indicated below as a minimum requirement:
 - 1. **Half-face Negative Pressure Air-Purifying Respirators:** Provide half-face negative pressure air-purifying respirators during installation of Primary or Critical Barriers or other activities where there has been an "Initial Exposure Assessment" that has determined that airborne asbestos fiber levels will not exceed 0.1 fiber per cubic centimeter (0.1 f/cc). Provide a PAPR where a half-face negative pressure air-purifying respirator is allowed to any worker who so requests.
 - 2. **Powered Air-Purifying Respirators (PAPR):** Provide powered air-purifying respirators (PAPR) during removal of asbestos-containing thermal system insulation (TSI) or surfacing material where there has been an "Initial Exposure Assessment" that has determined that airborne asbestos fiber levels will not exceed 1.0 fiber per cubic centimeter (1.0 f/cc).
 - 3. **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 which results in or may result in airborne asbestos fiber levels above 1.0 fibers per cubic centimeter (1.0 f/cc).
- D. **Provide a full facepiece supplied air respirator operated in the pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus for all workers within a regulated area where Class I work is being performed and for which an initial exposure assessment has not been produced. After an initial exposure assessment is made, use the level of respiratory protection required by that assessment and requirements of this specification and the OSHA Asbestos Construction Standard 29 CFR 1926.1101.**

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 in excess of 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. 0.1 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.

3.5 RESPIRATORY PROTECTION FACTOR

A. Respirator Type	Protection Factor
1. Air Purifying: Negative pressure respirator High efficiency filter Half facepiece	10
2. Air Purifying: Negative pressure respirator High efficiency filter Full facepiece	50
3. Powered Air Purifying (PAPR): Positive pressure respirator High efficiency filter Full facepiece	50
4. Powered Air Purifying Respirator: Equipped with high-efficiency filters or any supplied air respirator operated in continuous flow mode Full facepiece	100
6. Supplied Air: Positive pressure respirator Pressure demand or other positive pressure mode Full facepiece equipped with an auxiliary HEPA-cartridge or positive pressure self-contained breathing apparatus (SCBA) for escape	1,000

3.6 AIR PURIFYING RESPIRATORS

- A. Negative pressure - half or full face mask:** Supply a sufficient quantity of respirator filters approved for asbestos, so that workers can change filters during the workday. Require that respirators be wet-rinsed, and filters discarded, each time a worker leaves the Work Area. Require that new filters be installed each time a worker re-enters the Work Area. Store respirators and filters at the job site in the changing room and protect totally from exposure to asbestos prior to their use.
- B. 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 filters 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. Require entire exterior housing of respirator, including blower unit, filter cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

3.7 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 the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to 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 Designer for review. Do not begin work until these submittals are received by the Designer.
 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. Filters: Provide product data and shop drawing of installation on decontamination unit.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. **Polyethylene Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, clear, four to six (4-6)-mil.
- B. **Duct Tape:** Provide duct tape in 2 inch or 3 inch widths as indicated, with an adhesive which is formulated to stick aggressively to sheet polyethylene.
- C. **Spray Adhesive:** Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

- D. **Shower Pan:** Provide one piece waterproof shower pan. Fabricate from seamless fiberglass minimum 1/16 inch thick reinforced with wood, 18 ga. stainless or galvanized steel with welded seems, copper or lead with soldered seams, or a seamless liner of minimum 60 mil thick elastomeric membrane.
- E. **Shower Walls:** Provide approximately 7 feet high walls fabricated from rigid, impervious, waterproof material, either corrugated fiberglass roofing or equivalent. Structurally support as necessary for stability.
- F. **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.
- G. **Filters:** Provide cascaded filter units on drain lines from showers or any other water source carrying asbestos-contaminated water from the Work Area. Provide units with disposable filter elements as indicated below. Connect so that discharged water passes primary filter and output of primary filter passes through secondary filter.
 - 1. Primary Filter - Passes particles 20 microns and smaller
 - 2. Secondary Filter - Passes particles 5 microns and smaller
- H. **Hose Bib:** Provide heavy bronze angle type with wheel handle, vacuum breaker, and 3/4 inch National Standard male hose outlet.
- I. **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 square with minimum 6 feet high sides and back. Structurally support as necessary for stability. Equip with hose bib, as specified in this section, mounted at approximately 4 feet 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.

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. Installation of previously used one-use disposable decontamination units is prohibited. Require all persons without exception to pass through this Decontamination Unit for entry into and exiting from the Work Area for any purpose. Do not allow parallel routes for entry or exit. Do not remove equipment or materials through Personnel Decontamination Unit. Provide temporary lighting within Decontamination Units as necessary to reach a lighting level of 100 foot candles.
- 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 thickness, to provide an airtight seal between the Changing Room and the rest of the building.
 - 2. Locate so that access to Work Area from Changing Room is through Shower Room.
 - 3. Separate Changing Room from the building by a sheet plastic flapped doorway.
 - 4. 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 room with sheet plastic as set forth in Section 01526 – Temporary Enclosures. Authorization for this must be obtained from the Designer in writing prior to start of construction.

6. Maintain floor of changing room dry and clean at all times. Do not allow overflow water from shower to wet floor in changing room.
 7. Damp wipe 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.
- C. Drying Room:** Provide a drying room as a place for workers to dry after showering.
1. Construct room by providing a pan continuous with or draining to Shower Room pan. Install a freely draining wooden or non-skid metal floor in pan at elevation of top of pan.
 2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
 3. Separate this room from the Changing Room and Airlock with airtight walls fabricated of 6 mil polyethylene.
 4. Separate from Changing Room by a sheet plastic flapped doorway.
 5. Provide a continuously adequate supply of disposable bath towels.
- D. Airlock:** Provide an airlock between Shower Room and Drying Room. This is a transit area for workers. Separate this room from Equipment Room by a sheet plastic flap doorway.
1. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
 2. Separate this room from the Equipment Room and Shower Room with airtight walls fabricated of 6 mil polyethylene.
 3. Separate from Equipment Room by a sheet plastic flapped doorway.
- E. 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 headed out of the Work Area after undressing in the Equipment Room.
1. Construct room by providing a shower pan and 2 shower walls in a configuration that will cause water running down walls to drip into pan. Install a freely draining wooden floor in shower pan at elevation of top of pan.
 2. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
 3. Separate this room from the Airlocks with airtight walls fabricated of 6 mil polyethylene.
 4. Provide splashproof entrances to Airlocks with overlapping 6-mil polyethylene sheets.
 - a. Overlap the flaps a minimum of 6 inch in a direction that presents a shingle-like configuration to the water stream from the shower. Overlap sill (bottom) by 1-1/2 inch minimum. Arrange so that any air movement out of the Work Area will cause the flaps to seal against the door frame.
 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 wastewater storage. Change filters daily or more often if necessary. Locate filters inside shower unit so that water lost during filter changes is caught by shower pan. The use of 5 micron "socks" is not permitted.
 12. Provide hose bib.
- F. Airlock:** Provide an airlock between Shower Room and Equipment Room. This is a transit area for workers. Separate this room from Equipment Room by a sheet plastic flap doorway.
1. Separate this room from the rest of the building with airtight walls fabricated of 6 mil polyethylene.
 2. Separate this room from the Equipment Room and Shower Room with airtight walls fabricated of 6 mil polyethylene.
 3. Separate from Equipment Room by a sheet plastic flapped doorway.

- G. 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 doorway.
 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 floor in the Equipment Room for every shift change expected. Roll drop cloth layer of plastic from Equipment Room into Work Area after each shift change. Replace before next shift change. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

- H. Work Area:** Separate Work Area from the Equipment Room by polyethylene barriers.

- I. 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 Equipment Room needed by the worker are put on in the Equipment Room.
 3. Worker proceeds to Work Area.

- J. 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, gloves are to be stored in 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 (Bagout)

- A. Provide an Equipment Decontamination Unit** consisting of a serial arrangement of rooms, Clean Room, Holding Room, 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. Wash Down Station:** Provide a washdown station located in Work Area just outside Washroom as an equipment, bag and container cleaning station.

- C. Washroom:** Provide washroom 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. Provide a minimum of two (2) layers of plastic at all times. Use only clear plastic to cover floors.

- D. **Holding Room:** Provide Holding Room as a drop location for bagged asbestos-containing materials passed from the Washroom. Construct 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 directly 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.
- E. **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 Primary and Critical 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.
- F. **Decontamination Sequence:** Take all equipment or material from the Work Area through the Equipment Decontamination Unit according to the following procedure:
 - 1. At washdown station, thoroughly wet clean contaminated equipment or sealed polyethylene bags and pass into Washroom.
 - 2. When passing equipment or containers into the Washroom, close all doorways of the Equipment Decontamination Unit, other than the doorway between the Washdown 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 Holding Room. Close all doorways except the doorway between the Holding room and the Clean Room.
 - 5. Workers from the building exterior enter 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 to enter 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 three feet (3') between entrance and exit of any room. Provide a minimum of three feet (3') between doors to airlocks.
- 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 ¼ inch thick hardboard or ½ 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 Designer for approval. Do not proceed with any such method(s) without written authorization of the Designer.

- 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 on a daily basis or as otherwise indicated on Contract Drawings. Damp wipe or hose down all surfaces after each shift change. Clean debris from shower pans on a daily basis.

3.5 SIGNS

- A. Post** an approximately 20 inch by 14 inch manufactured reflective caution sign at each entrance to the Work Area displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:
 - 1. Provide signs in both English and any other language applicable to the primary language of the Contractor's Crew members working at the site.

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS & PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

- 2. Provide spacing between respective lines at least equal to the height of the respective upper line.

* END OF SECTION -- 01563 *

SECTION 01701

Contract Closeout – Asbestos Abatement

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 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. **Closeout requirements** for specific construction activities are included in the appropriate Sections in Divisions 2- 9.

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. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.
 6. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
 7. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
 8. Rectify all items listed on the Project Punch-List.
 9. Complete final cleanup requirements, including touch up painting.
 10. Touch up and otherwise repair and restore marred, exposed finishes.

- B. **Inspection Procedures:** On receipt of a request for inspection, the Designer will either proceed with inspection or advise the Contractor of unfilled requirements.
 - 1. The Designer will repeat inspection when requested and assure that the Work is substantially complete.

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 where required.
 - 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 - 3. Submit a certified copy of the Designer's final inspection list of items to be completed or corrected, endorsed and dated by the Designer. 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 Designer.
 - 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
 - 5. Submit consent of surety to final payment.
 - 6. Submit a final liquidated damages settlement statement.
- B. **Reinspection Procedure:** The Designer will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspection, has been completed, except for items whose completion is delayed under circumstances acceptable to the Designer.
 - 1. Upon completion of reinspection, the Designer will prepare a certificate of final acceptance. If the Work is incomplete, the Designer 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, reinspection will be repeated at the Contractor's cost.

1.5 RECORD DOCUMENT SUBMITTALS

- A. **Record Specifications:** Maintain one complete copy of the Project Manual, including addenda. Upon completion of work, submit the following to the Project Designer:
 - 1. Submit 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.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. **General:** The General Conditions require general cleaning during construction. 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 asbestos labels that are no longer valid.
 - 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 interior hard-surfaced 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 *

SECTION 01711

Project Decontamination

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 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 the 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 01526
 - 2. Critical barriers erected by work of Section 01527
 - 3. Decontamination Unit erected by work of Section 01563
 - 4. 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.

1.3 DESCRIPTION OF REQUIREMENTS

- A. **General:** Decontamination of the Work Area following asbestos abatement.
- B. 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.
- C. 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 01529 – Mini-Enclosures & Glovebags
 - 2. Section 02061 – Building Component Demolition
 - 3. Section 02081 – Removal of Asbestos-Containing Materials
 - 4. Section 02087 – Resilient Flooring Removal

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. **Final Air Sampling PCM – Phase Contract Microscopy (PCM):** After the work area is found to be visually clean, air samples will be taken and analyzed in accordance with the procedure for Phase Contract Microscopy set forth in this Section:
 - a. If Release Criteria are not met, repeat Final Cleaning and continue Decontamination Procedure from that point.
 - b. If Release Criteria are met, proceed to work of this Section on Removal of Work Area Isolation.

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 be continued for 5 minutes per 10,000 cubic feet of room volume.
 2. One 20 inch diameter fan per 10,000 cubic feet of room volume must be 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 of vents.
 4. After air sampling pumps have been shut off, fans will be shut off.

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 fiber 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 a 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.

1.8 PHASE CONTRAST MICROSCOPY

- A. In each homogeneous Work Area after completion of all cleaning work, a minimum of 5 simultaneous air samples and 2 field blanks will be collected and analyzed as follows:
1. Samples will be collected on 25 mm. cassettes with the following filter media:
 - PCM: 0.8 mixed cellulose ester in a cassette with a conductive extension cowl.

	Number of Samples	Analysis Method	Limit of Detection Fibers/cc	Limit of Quantification Fibers/cc	Accepted Volume (Liters)	Rate (LPM)
Each Work Area	5	PCM	<0.01	0.024	2,000 <i>minimum</i>	4.5 - 16
(For the first 25,000 square feet of area, 5 samples must be collected. One (1) additional sample is recommended for each additional 5,000 square feet of Work Area.)						
Work Area Blank	2	PCM	N/A	N/A	- 0 -	Throughout Sample Collection

- B. **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).
- C. **Fibers:** referred to in this section include fibers regardless of composition as counted by the phase contrast microscopy method used.
- D. **Quality Control:** One Work Area sample or ten percent (10%) of the samples will be reanalyzed to assure accuracy.
- E. **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 releaning per Section 01711 – Project Decontamination is required.

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 submitted daily 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 Designer, the Owner and the Contractor.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 START OF WORK

- A. **Previous Work:** During completion of the asbestos abatement work specified in other sections, the Secondary Barrier of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the asbestos abatement work.
- B. **Start of Work:** Work of this section begins with the cleaning of the Primary and Critical Barriers. At start of work the following will be in place:
 - 1. **Primary Barrier:** Two layers of polyethylene sheeting on floor, if applicable, and one layer on walls.
 - 2. **Critical Barrier:** An airtight barrier between the Work Area and other portions of the building or the outside.
 - 3. **Critical Barrier Sheeting:** Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers and other openings.
 - 4. **Decontamination Units:** For personnel and equipment in operating condition.
 - 5. **Pressure Differential System:** In operation.

3.2 FIRST CLEANING

- A. **First Cleaning:** Carry out a first cleaning of all surfaces of the work area including items of remaining sheeting, tools, scaffolding and/or staging by use of damp-cleaning and mopping, and/or a High Efficiency Particulate Air (HEPA) filtered vacuum. (Note: A HEPA vacuum may fail if used with wet material.) Do not perform dry dusting or dry sweeping. Use each surface of a cleaning cloth one time only and then dispose of as contaminated waste. Continue this cleaning until there is no visible debris from removed materials or residue on plastic sheeting or other surfaces.
 - 1. Remove All Filters in Air Handling System(s) and dispose of as asbestos-containing waste in accordance with requirements of Section 02084 – Disposal of Asbestos-Containing Material.

3.3 VISUAL INSPECTION

- A. **Visual inspection:** Before the application of any sealer to abated surfaces as a lock-back, perform a visual inspection to determine if all ACM including debris and residue has been removed. Perform visual inspections along with Project Administrator. Perform a complete visual inspection of the entire Work Area, as follows: using a dark damp cloth, wipe all surfaces, ceiling, walls, floor, decontamination unit, all plastic sheeting, seals over ventilation openings, doorways, windows, and other openings; look for debris from any sources, residue on surfaces, dust or other matter. When the area is visually clean and if after sweeping of all surfaces with leaf blowers and wiping with a dark, damp cloth, no debris, residue, dust or other material is found, complete a Certification of Visual Inspection provided by the Project Administrator. Visual inspection is not complete until confirmed in writing on the certification by Project Administrator. After this visual inspection is passed, lock-back sealants can be applied, and the work area decontamination process can be initiated.
 - 1. **Temporary Lighting:** Provide a minimum of 100 foot candles of lighting on all surfaces in the area to be subjected to visual inspection. Provide handheld lights providing 150 foot candles at 4 feet capable of reaching all locations in work area.
 - 2. **Lifts:** Provide ladders, scaffolding, and lifts as required to provide access to all surfaces in the area to be subjected to visual inspection. Access is to allow touching of all surfaces.

3.4 REMOVAL OF PRIMARY BARRIERS

- A. Remove all Primary Barrier sheeting and Material Decontamination Unit, if there is one, leaving only:
1. Critical Barrier: Which forms the sole barrier between the Work Area and other portions of the building or the outside.
 2. Critical Barrier Sheeting: Over lighting fixtures and clocks, ventilation openings, doorways, convectors, speakers, and other openings.
 3. Decontamination Unit: For personnel, in operating condition.
 4. Pressure Differential System: Maintain in continuous operation.

3.5 FINAL CLEANING

- A. **Final cleaning:** Carry out a final cleaning of all surfaces in the work area in the same manner as the first cleaning immediately after removal of Primary plastic. This cleaning is now being applied to existing room surfaces. Take care to avoid water marks or other damage to surfaces.
- B. **Contractor's final visual inspection:** At the completion of the above cleaning, visually inspect all surfaces. Reclean if any dust, debris, etc. is found.
- C. **After completion of Final Cleaning,** again wait for a period of time long enough for the HEPA-filtered fan units operating in the work area to provide 48 air changes to allow HEPA filtered fan units to clean air of airborne asbestos fibers. Maintain pressure differential system in operation for the entire 48 air change period.

3.6 CLEARANCE AIR SAMPLING BY OWNER (PCM)

- A. **Phase Contrast Microscopy (PCM):** After the work area is found to be visually clean, air samples will be taken and analyzed by the Owner in accordance with the procedure for Phase Contrast Microscopy set forth in Part 1 of this section.
1. If Release Criteria are not met, repeat Final Cleaning and continue Decontamination Procedure from that point.
 2. If Release Criteria are met, proceed to work of this Section on Removal of Work Area Isolation.

3.7 REMOVAL OF WORK AREA ISOLATION

- A. **After all requirements of this section** have been met:
1. Shut down and remove the Pressure Differential System. Seal HEPA filtered fan units, HEPA vacuums and similar equipment with 6 mil polyethylene sheet and duct tape to form a tight seal at intake end before being moved from Work Area.
 2. Remove Personnel Decontamination Unit.
 3. Remove the Critical Barriers separating the Work Area from the rest of the building. Remove any small quantities of residual material found upon removal of the plastic sheeting with wet wiping, HEPA filtered vacuum cleaners and local area protection. If significant quantities, as determined by the Designer, are found then the entire area affected shall be decontaminated as specified.
 4. Remove all equipment, materials, debris from the work site.
 5. Dispose of all asbestos-containing waste material as specified in Section 02084 – Disposal of Asbestos Containing Material.

3.8 SUBSTANTIAL COMPLETION OF ABATEMENT WORK

- A. Asbestos Abatement Work is Substantially Complete** upon meeting the requirements of this section including submission of:
1. Certificate of Visual Inspection
 2. Receipts Documenting proper disposal as required by Section 02084 – Disposal of Asbestos-Containing Material.
 3. Punch list detailing repairs to be made and incomplete items.

3.9 CERTIFICATE OF VISUAL INSPECTION

- A. A "Certificate of Visual Inspection":** is to be completed by the Contractor and certified by the Project Administrator for each work area. These certification forms will be available on-site from the air monitoring technician. Final payment will not be made until this Certification is executed for all work areas.

*** END OF SECTION 01711 ***

SECTION 02061

Building Component Demolition – Asbestos Abatement

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF THE WORK

- A. **The work of this Section** includes the demolition of buildings and installations where asbestos containing materials are present.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- A. **Work to be completed prior to start of the work of this section** are set forth in the following sections:
 1. Worker Protection - Asbestos Abatement
 2. Respiratory Protection
 3. Decontamination Units
- B. **Section 02084 – Disposal of Asbestos-Containing Material** describes the handling and disposal of asbestos-containing waste.

1.4 SUBMITTALS (Not Applicable)

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 by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons of water.
- C. **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 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons of water.

- D. **Polyethylene Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, clear, four to six (4-6)-mil.
- E. **Duct Tape:** Provide duct tape in 2 inch or 3 inch 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.

PART 3 - EXECUTION

3.1 WORKER PROTECTION

Before beginning work with any material for which a Safety Data Sheet (SDS) has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.2 REMOVAL OF COMPLETE SYSTEMS

- A. **Before Starting Work of This Section:** Complete the work set forth in the following specification sections:
 - 1. Section 01527 – Regulated Areas
 - 2. Section 01529 – Mini-Enclosures and Glovebags
 - 3. Section 01560 – Worker Protection – Asbestos Abatement
 - 4. Section 01562 – Respiratory Protection
- B. Repair any damaged asbestos-containing material prior to completely sealing all components to be removed in two (2) layers of 6 mil polyethylene sheet sealed with duct tape. Candy stripe surface of plastic as reinforcement. Wrap large items such as boilers, tanks, and converters with nylon reinforced sheet plastic. Install sheet plastic to allow cutting of components into sections where this is necessary for the work.
- C. Remove ACM where necessary to allow the cutting components into sections using the procedures set forth in Section 01529 – "Mini Enclosures and Glovebags" of these Specifications.
- D. Remove Components: In largest sections possible.
- E. **Visual Inspection:** Visually inspect work area for debris. If any visible debris is noted, clean all surfaces in the Work Area again. Continue this procedure until no visible debris is found in the Work Area.
- F. **Final Air Testing:** Clear the Work Area in accordance with requirements of Section 01711 – Project Decontamination.

3.3 DISPOSAL OF WASTE

- A. Pack: All asbestos-containing or contaminated waste material in bags marked as required by Section 02084 – Disposal of Asbestos-Containing Material.

*** END OF SECTION 02061 ***

SECTION 02063

Removal of Asbestos-Contaminated Materials

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

- A. **Work of this section includes** removal and disposal of all non-Asbestos-Containing Material including but not limited to:
1. Ceiling system and supports
 2. Removal of all carpeting from within the work area

PART 2 – PRODUCTS

2.1 MATERIALS

- A. **Unlabeled Clear Bags:** Provide clear 6 mil thick leak-tight polyethylene bags with no label.
- B. **Disposal Bags:** Provide disposal bags as described in Section 02084 – "Disposal of Asbestos-Containing Material"

PART 3 - EXECUTION

3.1 SEQUENCE

- A. **Before beginning work of this section** comply with:
1. Section 01503 – Temporary Facilities - Asbestos Abatement
 2. Section 01513 – Temporary Pressure Differential and Air Circulation System
 3. Section 01563 – Decontamination Units
 4. Section 01526 – Temporary Enclosures
 5. Section 01560 – Worker Protection - Asbestos Abatement
 6. Section 01562 – Respiratory Protection
 7. Section 01527 – Regulated Areas
 8. Section 01529 – Mini Enclosures and Glovebags

3.2 CEILING SYSTEM

- A. **Non-Asbestos Ceiling Tiles:** Remove sufficient ceiling tiles to gain access to top of ceiling system. Mist top of tiles with amended water. Wet sufficiently to soak debris thoroughly, but not cause dripping. Remove ceiling tiles and carry to Wash Down Station. Wash ceiling tiles in wash down station. Bag washed tiles in unlabeled clear 6 mil bags. Dispose of tiles as non-asbestos waste.
 - 1. Bag debris from washed off tiles in properly labeled asbestos disposal bags. Dispose of debris as asbestos-containing waste as set forth in Section 02084 – Disposal of Asbestos-Containing Material.
- B. **Support System:** Remove hangers, tracks, T-bars, etc. Decontaminate in Wash Down Station. Wrap in clear 6 mil sheet plastic. Dispose of as non-asbestos waste.

3.3 CARPETING

- A. **Deface carpeting** with a contrasting spray paint before the work. Coat lightly enough that wetting will not be retarded.
- B. **Thoroughly wet asbestos-contaminated carpeting** to be removed to reduce fiber dispersal into the air. Wet carpet prior to cutting, rolling or any other activity that could disturb dust in or under the carpet. Accomplish wetting by a fine spray (mist) of amended water or encapsulant. Saturate material completely without causing excess dripping. Allow time for water or encapsulant to penetrate material thoroughly. Spray material repeatedly during the work process to maintain a continuously wet condition. Spraying amended water or encapsulant on carpeting during cutting or rolling to minimize dispersal of asbestos fibers into the air.
- C. **Cut seams in the carpeting and roll up** into rolls of carpeting that are no wider than factory width of carpeting. Roll or fold padding as necessary. Remove dust and debris from floor after removal of carpeting and padding by HEPA vacuuming followed by wet wiping.
 - 1. Wrap the rolled carpeting in two layers of 6 mil sheet plastic. Label and dispose of in accordance with requirements of specification section on “Disposal of Asbestos-Containing Waste.”
 - 2. Dispose of rolled carpeting as normal construction debris.
- D. **Cut carpeting into three foot wide strips.** Cut strips into short enough lengths to fit in asbestos disposal bags when rolled up. As carpeting and padding is removed, simultaneously pack material while still wet into disposal bags, 6 mil minimum thickness. Seal bags, clean outside and move to Wash Down Station adjacent to Material Decontamination Unit. Remove dust and debris from floor after removal of carpeting and padding by HEPA vacuuming followed by wet wiping.

3.4 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 *

SECTION 02081

Removal of Asbestos-Containing Materials

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to 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 Primary and Critical 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 Asbestos-Containing Material.

1.3 SUBMITTALS

- A. **Before Start of Work:** Submit the following to the Designer for review. Do not start work until these submittals are received by the Designer:
 - 1. **Safety Data Sheet:** Submit Safety Data Sheets (SDS), 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 by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether mixed with five gallons of water.

- C. **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 mixture of 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether in five gallons of water.
- D. **Polyethylene Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, clear, four to six (4-6)-mil.
- E. **Duct Tape:** Provide duct tape in 2 inch or 3 inch 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 thick leak-tight polyethylene bags labeled as required by Section 02084 – Disposal of Asbestos Containing Material.
- H. **Fiberboard Drums:** Provide heavy duty leak tight fiberboard drums with tight sealing locking metal tops.
- I. **Paper board Boxes:** Provide heavy duty corrugated paper board boxes coated with plastic or wax to retard deterioration from moisture. Provide in sizes that will easily fit in disposal bags.
- J. **Felt:** Standard felt approximately 1/16 inch thick and 36 inches to 72 inches 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 sheet plastic in all areas where asbestos removal work is to be carried out. Completely cover floor with sheet plastic. Where the work is within 10 feet of a wall extend the Secondary Barrier up wall to ceiling. Support sheet plastic on wall with duct tape and 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. **Clean Secondary Barrier** at the end of each work shift or as work in an area is completed. Do not allow any accumulated debris to dry out.
 - 2. **Remove Secondary Barrier** as work in an area is completed. Fold plastic toward center of sheet and pack in disposal bags.

3.2 WORKER PROTECTION

- A. **Before beginning work** with any material for which a Safety Data Sheet (SDS) has been submitted provide workers with the required protective equipment. Require that appropriate protective equipment be used at all times.

3.3 WET REMOVAL

- A. **Thoroughly wet**, to satisfaction of Designer, 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 manufacturer's written instructions. Perforate outer covering of any installation which has been painted and/or jacketed in order to allow penetration of amended water or removal encapsulant, or use injection equipment to wet material under the covering. Where necessary, carefully strip away while simultaneously spraying amended water or removal encapsulant on the installation to minimize dispersal of asbestos fibers into the air.
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. **Tank, Stack, and Boiler Insulation:** Spray with a mist of amended water or removal encapsulant. Allow amended water or removal encapsulant to saturate material to substrate. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Perforate outer covering of any insulation which has been painted and/or jacketed to allow penetration of amended water or removal encapsulant. Remove material in small sections and immediately bag debris. Remove any residue remaining on substrate after scraping using a stiff nylon bristled hand brush. If removal encapsulant is used, remove residue completely before encapsulant dries. If substrate dries before complete removal of residue, re-wet with amended water or removal encapsulant and completely remove all remaining residue.
- C. **Ceiling/Wall Tile Mastic Adhesive:** Spray asbestos-containing ceiling/wall tile mastic adhesive with a fine mist of amended water. Do not over-saturate to cause excess dripping. Scrape materials from substrate. Remove materials in manageable quantities and control the descent to staging or floor below. Do not allow mastic material to fall to the floor. When using amended water, spray mist surface continuously during work process. Remove residue remaining on scratch coat after scraping using stiff nylon bristled hand brush. If substrate dries before complete removal of residue, re-wet with amended water.
- D. **Pipe Insulation:** Spray with a mist of amended water or removal encapsulant. Allow amended water or removal encapsulant to saturate material to substrate. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions. Cut bands holding preformed pipe insulation, slit jackets at seams, remove and hand-place in a disposal bag. Remove job-molded fitting insulation in chunks and hand place in a disposal bag. Do not drop to floor. Remove any residue on pipe or fitting with stiff bristle nylon hand brush. In locations where pipe fitting insulation is removed from pipe with straight runs insulated with fibrous glass or other non-asbestos-containing fibrous material, remove fibrous material 6" (150 mm) from the point where it contacts the asbestos-containing insulation.
- E. **Window Caulk/Glazing Compound:** Spray asbestos-containing window caulk/glazing compound with a fine mist of amended water or removal encapsulant. Allow time for amended water or removal encapsulant to saturate material to substrate. Do not over-saturate to cause excess dripping. Scrape materials from substrate. Remove materials in manageable quantities and control the descent to floor below. If using amended water, spray mist surface continuously during work process. If using removal encapsulant, follow manufacturer's written instructions. Remove residue remaining on window after scraping using stiff nylon bristled hand brush. If substrate dries before complete removal of residue, re-wet with amended water.
- F. **Chalkboard Adhesive:** Spray with a fine mist of amended water or removal encapsulant. If a removal encapsulant is used, use in strict accordance with manufacturer's written instructions. Scrape materials from substrate. Remove materials in manageable quantities, and control descent to the floor. Remove residue remaining on wall after scraping using stiff nylon-bristled hand brush.

- G. **Light Blankets:** Spray with amended water or removal encapsulant. Allow amended water or removal encapsulant to saturate material to substrate. The light blanket shall be kept wet during removal and disposal. Remove each light blanket by hand and place in a disposal bag. Do not drop to floor.
- H. **Transite Panels:** Wet Transite panels and remove from frame as a whole component. Wrap with two layers of 6-mil Polyethylene Sheeting.

3.4 LOCAL VENTILATION AND COLLECTION SYSTEM

- A. **Provide local ventilation and collection systems** as described below for each area where amosite or dry ACM is being removed or otherwise disturbed:
- B. **Provide HEPA filtered fan units in addition** to those required by Section 01513, in the vicinity of the work. Arrange so that the units exhaust into the Work Area oriented in a direction away from the work. Extend a 12 inch diameter flexible non-collapsing duct from the intake end to a point no more than 4 feet from any scraping or wire brushing activity.
- C. **Locate intake** of duct so that air flow is horizontally and slightly downward into intake. Replace primary filters on HEPA filtered fan units at an interval of no greater than 30 minutes. Allow no more than one scraping or wire brushing activity per fan unit.

* END OF SECTION 02081 *

SECTION 02084

Disposal of Asbestos-Containing Material

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. **Worker protection requirements** are set forth in Section 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 Asbestos-Containing Materials (ACM).** Disposal includes packaging of Asbestos-Containing Materials. Asbestos-containing waste material and debris which is packaged in accordance with the provisions of this specification must be disposed of at approved sanitary landfills.

1.4 SUBMITTALS

- A. **Before Start of Work:** Submit the following to the Designer for review. Do not start work until these submittals are received by Designer.
 - 1. **Name and address of landfill** where Asbestos Containing Materials are to be buried. Include contact person and telephone number.
- B. **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 Designer within 35 days of departure from building.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. **Disposal Bags:** Provide 6 mil thick leak-tight polyethylene bags labeled with three labels identified as follows:
 - 1. **First Label:** Provide in accordance with 29 CFR 1910.1200(f) of OSHA's Hazard Communication Standard.
 - 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.

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.

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. **Water** contaminated with asbestos as a result of the abatement process shall not be drained into a sanitary or storm sewer. A filtration system incorporating an in-line 20 micron filter and 5 micron filter must be used to remove asbestos fibers from such water prior to sewerage.
- B. **All waste** is to be hauled by a waste hauler with all required licenses from all state and local authority with jurisdiction.
- C. **Liquid waste:** Mix all liquid asbestos-containing waste or asbestos contaminated waste with a bladeable material so that it forms a bladeable (non-liquid) form, and have the concurrence of the landfill operator prior to disposal.
- D. **Load all adequately wetted 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 disposal bags or
 2. Two 6 mil disposal bags and a fiberboard drum or
- E. **Protect interior of truck** or dumpster with Primary and Critical Barriers as described in Section 01526 – Temporary Enclosures.
- F. **Carefully load containerized waste** in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to ensure that no unauthorized persons have access to the material.
- G. **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

- H. **Do not store containerized materials outside of the Work Area.** Take containers from the Work Area directly to a sealed truck or dumpster.

- I. **Do not transport disposal bagged materials on open trucks.** Label drums with same warning labels as bags. Treat drums that have been contaminated as Asbestos-Containing Material and dispose of in accordance with this specification.
- J. **Advise the landfill operator** or processor, at least ten days in advance of transport, of the quantity of material to be delivered.
- K. **At disposal site** unload containerized waste:
 - 1. **At a disposal site**, sealed plastic bags should be carefully unloaded from the truck. If bags are broken or damaged, place in new, undamaged disposal bags. Workers conducting rebagging shall wear two disposable suits and respiratory protection. Decontaminate outside of bags prior to removal from truck. Workers shall decontaminate using dry decontamination techniques or wet decontamination techniques if the protective clothing worn by the worker has been visibly contaminated with debris. Clean entire truck and contents using procedures set forth in Section 01711 – Project Decontamination.
- L. **Retain receipts from landfill** for materials disposed of.
- M. **At completion of hauling** and disposal of each load submit copy of waste manifest, chain of custody form, and landfill receipt to Designer.

*** END OF SECTION 02084 ***

SECTION 02087

Resilient Flooring Removal

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. **Drawings and general provisions of the Contract**, including General and Supplementary Conditions, Modifications to General Conditions, Additional Articles, Division 1 and Division 2 Specification Sections, apply to 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. Section 01503 – Temporary Facilities – Asbestos Abatement
 2. Section 01513 – Temporary Pressure Differential & Air Circulation System
 3. Section 01526 – Temporary Enclosures – Complete Work Except Delete Floor Plastic
 4. Section 01527 – Regulated Areas – Complete Work Except Delete Drop Cloth
 5. Section 01560 – Worker Protection - Asbestos Abatement
 6. Section 01562 – Respiratory Protection
 7. Section 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. Section 01711 – Project Decontamination
 2. Section 02084 – Disposal of Asbestos-Containing Material

1.3 SUBMITTALS

- B. **Before Start of Work** submit the following to the Designer for review.
1. **Safety Data Sheet:** Submit Safety Data Sheets (SDS), 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 by the use of one ounce of a surfactant consisting of 50 percent polyoxyethylene ester and 50 percent 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 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 of water.
 3. Dishwashing detergent that contains anionic, nonionic, and amphoteric surfactants.
- B. Foam or Viscous Liquid:** Provide material that contains no organic materials, is non-flammable, presents no physical hazard due to reactivity, presents no acute or chronic health hazard, and does not require special skills, knowledge, or equipment for application.
- C. Tile Adhesive Removal Solvent:** Provide a slow-drying solvent intended to remove tile adhesive. Provide 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).
- D. Polyethylene Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, clear, four to six (4-6)-mil.
- E. Duct Tape:** Provide duct tape in 2 inch or 3 inch widths as indicated, with an adhesive formulated for use on sheet polyethylene.
- F. Spray Cement:** Provide, in aerosol cans, spray adhesive which is formulated for use on sheet polyethylene. Provide materials that do not contain methylene chloride.
- G. Disposal Bags:** Provide 6 mil thick leak-tight polyethylene bags labeled as required by Section 02084 – Disposal of Asbestos-Containing Material.
- H. Fiberboard Drums:** Provide heavy duty leak-tight fiberboard drums with tight sealing locking metal tops.
- I. Steel Drums:** Provide leak-tight steel drums with tight-sealing locking metal tops.
- J. Injection Molded Plastic Drums:** Provide leak-tight injection-molded plastic drums with tight sealing locking tops.
- K. 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.
- L. 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.
2. 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:

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

- a. Crain Cutter Co., Inc. No. 700 "Bearcat" Stripper
156 So. Milpitas Blvd. - without blades
Milpitas, CA 95035 - various blades available
408-946-6100

- b. Beno J. Gundlach Company No. 500
P.O. Box 544 No. 525
Belleville, IL 62222
- c. Inventive Manufacturing "The Bid RipOff"
1440 South Seneca
Wichita, KS 67213
316-267-2443

- d. Palmer Distributing & Sales Co. Model 460
P.O. Box 6327 Model PG101
Glendale, CA 91225-0327 Model PG 102
818-244-7261 or 800-423-2733

- e. Roofing Equipment, Inc. Taylor Tools
11075 East 47th Avenue
Denver, CO 80239
303-371-7667

- f. Warner Manufacturing No. 7079 Warner Floor Stripper
13435 Industrial Park Blvd.
Minneapolis, MN 55441
612-559-4740 or 800-328-0606

D. Rotary Cutters:

- 1. Machine with rotating discs facing flat against the floor with spring-loaded cutters that follow the profile of the floor and removes soft resilient materials by cutting them into thin strips and scraping them from the floor.
- 2. 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:
- 3. **Manufacturer:** Subject to compliance with requirements, provide products of one of the following:

- a. Critical Industries, Inc. "Strip-Dek" fitted for connection to HEPA Vac
5815 Gulf Freeway
Houston, TX 77023
800-624-7030

- b. Equipment Development Co. Inc. "Strip-Dek"
100 Thomas Johnson Drive
Frederick, MD 21701
301-663-1600 or 800-638-EDCO

- c. Roofing Equipment, Inc. Taylor Tools "Scrape Away"
11075 East 47th Avenue
Denver, CO 80239
303-371-7667

2.3 THERMAL EQUIPMENT WITH AUTOMATIC CONTROL

A. Thermal Equipment with Automatic Control:

1. Equipment utilizing controlled infrared radiant heat to make the resilient floor tiles and adhesive soft and pliable for removal.
2. 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:
3. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - a. Novateck Corporation "Novastrip" series
155 Philips Road
Exton, PA 19341
866-563-7800
 - b. Enviromethods, Inc. "Delta T" series
P.O. Box 6151
Wolcott, CT 06716
203-879-5527
 - c. UAS Automation Systems, Inc. "ATR" (Automated Tile Removal) series
4524 Parkway Commerce Blvd.
Orlando, FL 32808
407/294-8551 or 800/969-8837

2.4 OTHER TECHNOLOGIES APPLIED TO THE WORK

A. Rotary Grinders/Surfacers:

1. Machine with discs facing flat against the floor that removes hard materials with a grinding action.
2. 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:
3. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - a. Allen Engineering Corporation No. 021006 grinders; diamond (wet cut)
P.O. Box 819 with dust extraction kit
Paragould, AR 72451 - gasoline, electric, propane
501-236-7751 or 800-643-0095
 - b. Equipment Development Co. Inc. EDCO grinders diamond (wet cut)
100 Thomas Johnson Drive w/HEPA vac connectors
Frederick, MD 21701 models: SEC, 2EC, 2GC, 411
301-663-1600 or 800-638-EDCO

B. Surfacer/Planers/Scarifiers:

1. Machine with a series of small cutters freewheeling on axles mounted on a drum so that the cutters contact the floor surface with a flailing action.
2. 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:

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

- | | | |
|----|--|--|
| a. | Allen Engineering Corporation
P.O. Box 819
Paragould, AR 72451
501-236-7751 or 800-643-0095 | "Thunderbird 8" planer w/dust extraction kit
"Multi-Duty Planer" diamond
head grinder with dust extraction kit |
| b. | Aurand
1210 Ellis Street
Cincinnati, Ohio 45223
513-541-7200 | Handheld units (no vac)
and small walking units |
| c. | Bartell Power Products
56 Harvester Avenue
Batavia, NY 14020
716-344-0850 or 800-247-8577 | "Surface Preparation System" - machine and
cutter individually sold
Handheld units (2" path, no vac) models
SP86, SP86E
Walking units (8" path) with dust extractor
models B446, 436, 346 |
| d. | Equipment Development Co. Inc.
100 Thomas Johnson Drive
Frederick, MD 21701
301-663-1600 or 800-638-EDC | EDCO various Surfacers/Planers
with HEPA vacs
- models CPM 4, 8, CPU 10, 10C, 12 |
| e. | SASE Company
P.O. Box 81003
Seattle, WA 98108
206-762-0744 | VON ARX
various Surfacers/Scarifiers |

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. Section 01503 – Temporary Facilities - Asbestos Abatement
 2. Section 01513 – Temporary Pressure Differential & Air Circulation System
 3. Section 01526 – Temporary Enclosures – Complete Work Except Delete Floor Plastic.
 4. Section 01527 – Regulated Areas – Complete Work Except Delete Drop Cloth
 5. Section 01560 – Work Protection - Asbestos Abatement
 6. Section 01562 – Respiratory Protection
 7. Section 01563 – Decontamination Units
- B. Preparation:** Prior to beginning the removal of any resilient floor covering complete the following:
1. Remove appliances and furniture from the work area.
 2. Mix a detergent solution (16 ounces of liquid dishwashing detergent to 1 gallon 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 raceway system.
 2. Remove hatch and trench covers that are covered with resilient flooring. Seal opening with plywood. Seal 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 slab where cover on openings and penetrations must seal to floor to accomplish a watertight assembly. Remove this residue by abrasion using dampened, clean, 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 cover assemblies with strippable coating. Install strippable coating so that it seals plywood to floor.
8. Cover sealed openings with strippable coating installed so that it seals opening.
9. Cover sealed plywood hatch assemblies with 6 mil sheet plastic. Seal plastic to floor with spray glue or urethane caulk.
10. Cover sealed openings with sheet plastic. Seal plastic to floor with spray glue or urethane caulk.

3.2 STEP ONE – NON-FRIABLE REMOVAL OF RESILIENT TILE FLOOR COVERING

A. Remove resilient tile floor covering using the following procedure:

1. General:
 - a. If applicable, remove carpet and dispose of as non-asbestos containing waste. Dispose of any carpet that has asbestos-containing floor tile and/or mastic adhered to it as asbestos-containing waste.
 - b. 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 entire surface is wet. Do not allow 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 floor continuously wet throughout removal operation.
 - c. Start removal by carefully wedging a razor or floor scraper in the seam of two adjoining tiles and gradually forcing the edge of one of the tiles up and away from the floor. Continue to force the balance of the tile up by working the scraper beneath the tile. Exert both a forward pressure and a twisting action on the blade to promote release of the tile from the adhesive and the floor.
 - d. When the first tile is removed, place it, without breaking it further into smaller pieces, in a disposal bag or impermeable container.
 - e. After the first tile is removed and accessibility to other tiles is improved, force the razor or floor scraper under the exposed edge of another tile. Continue to exert a prying, twisting force to the scraper as it is moved under the tile until the tile releases from the floor. Again, dispose of the tile and succeeding tiles by placing in a disposal bag or closed impervious container without additional breaking.
 - f. Force the scraper through tightly-adhered areas by striking the scraper handle with a hammer using blows of moderate force while maintaining the scraper at a 25-30 degree angle to the floor. Use eye protectives and other protective equipment as required by the section on Worker Protection.
 - g. Attempt to remove individual tiles as complete units without breakage to the greatest extent possible. However, some breakage is inevitable.
 - h. If the procedure above is inadequate to loosen tiles, use heat to soften adhesive or dry ice to separate tile from the adhesive. Thoroughly heat the tile(s) with a hot air blower or radiant heat source until the heat penetrates through the tile and softens the adhesive. Require that the hot air blower or radiant heat source, tiles and adhesive be carefully handled to avoid burns. Do not allow heated tiles and adhesive to be handled without suitable glove protection for hands.
 - i. If dry ice is used, place dry ice on tile for a period of time to loosen adhesion. Move dry ice to another tile location. Carefully pry tile from adhesive to avoid breakage of tile. Do not handle dry ice without suitable glove protection for hands. Allow for adequate air exchanges sufficient for replacing oxygen which will be displaced by the gases generated from the evaporating dry ice.
3. Thermal Removal
 - a. Follow thermal equipment manufacturer's recommended procedures.

B. Debris and Waste

1. Dispose of all ACM in accordance with Section 02084 – Disposal of Asbestos-Containing Material.
2. Pick up whole tiles, stack, place in boxes or wrap in felt, and place in labeled disposal bags. At the Contractor's option tiles may be placed directly into durable leak-tight containers.
3. Place bagged waste in a second disposal bag during decontamination and dispose of waste as required by Section 02084 – Disposal of Asbestos-Containing Material.

3.3 STEP ONE – NON-FRIABLE REMOVAL OF ADHERED SHEET RESILIENT FLOORING:

A. Use the following procedure to remove adhered resilient sheet flooring completely:

1. Wet Floor
 - a. Wet floor with amended water, removal encapsulant, or detergent solution so that entire surface is wet. Do not allow to puddle or run off to other areas. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions.
 - b. Keep floor continuously wet throughout removal operation.

B. Debris and Waste:

1. Dispose of all friable materials in accordance with Section 02084 – Disposal of Asbestos containing Material.
2. Make a series of parallel cuts, with a knife, 4 to 8 inches apart parallel to the wall, keeping cut lines wet.
3. Start at the end of the room farthest from the entrance door. This will help avoid tracking of debris from the removal operation. Pry up the corner of the first strip, separating the backing layer. As the strip is being removed, spray a constant mist of the detergent solution into the delamination nip point to minimize any airborne dust particles. When done properly, any felt remaining on the floor and on the back of the strip will be thoroughly wet. Peel the strip either by pulling upward at an angle that permits the best separation or by rolling around a core.
 - a. PRECAUTION: Resilient flooring becomes slippery when wet with, amended water, removal encapsulant, or a detergent solution. Use caution to contain the solution in the immediate work area. Stand on a new sheet of plywood or non-slip surface while working on wet surfaces.
4. Debris and Waste:
 - a. Dispose of all friable materials in accordance with Section 02084 – Disposal of Asbestos-Containing Material.
 - b. Roll the strip tightly as it is removed. Tie or tape securely and place in a disposal bag or closed impermeable container for disposal.
5. Occasionally parts of the foam inner-layer will remain stuck to the backing. This condition can sometimes be eliminated by pulling the strips loose from the opposite end. Peel the foam inner-layer from the floor while spraying the detergent solution into the delamination nip point.
6. Some resilient flooring is not readily strippable by hand. When these conditions are encountered, a sharp stiff blade scraper may be used to assist cleavage of the wear layer from felt. If this procedure is used the distance between cuts should be narrowed to 3 to 5 inches wide.
7. Regardless of whether stripping of the wear surface is accomplished by hand peeling alone or with the assistance of a stiff blade scraper, amended water, removal encapsulant or detergent solution must be sprayed into the delamination nip point to minimize any airborne dust particles.
8. Place all flooring strips and felt scrapings into disposal bags immediately, while still wet. Close full bags tightly and seal securely for disposal.
9. Keep floor where wear layer has been removed continuously wet until after completion of heavy residue removal.

3.4 STEP ONE – REMOVAL OF ADHERED SHEET RESILIENT FLOORING:

A. Use the following procedure to remove adhered resilient sheet flooring completely:

1. Wet Floor
 - a. Wet floor with amended water, removal encapsulant, or detergent solution so that entire surface is wet. Do not allow to puddle or run off to other areas. If a removal encapsulant is used, use in strict accordance with manufacturer's instructions.
 - b. Keep floor continuously wet throughout removal operation.
2. Make a slice into the adhered floor covering 4-8 inches wide, parallel with the walls, around the perimeter of the room.
3. Starting on either side of the entrance door, pry up the corner of the first strip, separating the backing layer. As the strip is being removed, spray a constant mist of the detergent solution into the delamination nip point to minimize any airborne dust particles. When done properly, any felt remaining on the floor and on the back of the strip will be thoroughly wet. Peel the strip either by pulling upward at an angle that permits the best separation or by rolling around a core.
4. Roll the strip tightly as it is removed. Tie or tape securely and place in a disposal bag or closed impermeable container for disposal.
5. Remove additional strips, following the above procedure, as necessary to expose unadhered subfloor area.
6. Remove all of the exposed residual felt by wet scraping, using the procedures under, "Removal of Residual Backing Material," in this section, before proceeding with removal of the unadhered portion of the floor covering. Residual felt must be removed by wet scraping. Do not sand or dry scrape in any way. Do not dry sweep. Avoid creating dust.
 - a. PRECAUTION: Resilient flooring becomes slippery when wet with, amended water, removal encapsulant, or a detergent solution. Use caution to contain the solution in the immediate work area. Stand on a new sheet of plywood or non-slip surface while working on wet surfaces.
7. Debris and Waste:
 - a. Dispose of all friable materials in accordance with Section 02084 – Disposal of Asbestos containing Material.
 - b. Roll the strip tightly as it is removed. Tie or tape securely and place in a disposal bag or closed

3.5 STEP ONE – FRIABLE HAND TOOL REMOVAL OF RESILIENT TILE FLOOR COVERING

A. Remove resilient tile floor covering using the following procedure:

1. General:
 - a. If applicable, remove carpet and dispose of as non-asbestos containing waste. Dispose of any carpet that has asbestos-containing floor tile and/or mastic adhered to it as asbestos-containing waste.
 - b. 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 entire surface is wet. Do not allow 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 floor continuously wet throughout removal operation.
 - c. Start removal by wedging a razor or floor scraper in the seam of two adjoining tiles and gradually forcing the edge of one of the tiles up and away from the floor. Continue to force the balance of the tile up by working the scraper beneath the tile. Exert both a forward pressure and a twisting action on the blade to promote release of the tile from the adhesive and the floor.
 - d. When the first tile is removed, place it in a disposal bag or impermeable container.

- e. After the first tile is removed and accessibility to other tiles is improved, force the razor or floor scraper under the exposed edge of another tile. Continue to exert a prying, twisting force to the scraper as it is moved under the tile until the tile releases from the floor. Again, dispose of the tile and succeeding tiles by placing in a disposal bag or closed impervious container.
- f. Force the scraper through tightly-adhered areas by striking the scraper handle with a hammer using blows of moderate force while maintaining the scraper at a 25-30 degree angle to the floor. Use eye protectives and other protective equipment as required by the section on Worker Protection.

B. Debris and Waste

1. Dispose of all ACM in accordance with Section 02084 – Disposal of Asbestos-Containing Material.
2. Pick up whole tiles, stack, place in boxes or wrap in felt, and place in labeled disposal bags. At the Contractor's option tiles may be placed directly into durable leak-tight containers.
3. Place bagged waste in a second disposal bag during decontamination and dispose of waste as required by Section 02084 – Disposal of Asbestos-Containing Material.

3.6 STEP ONE – MECHANICAL REMOVAL OF RESILIENT TILE FLOOR COVERING

A. Remove resilient tile floor covering using the following procedure:

1. General:
 - a. If applicable, remove carpet and dispose of as non-asbestos containing waste. Dispose of any carpet that has asbestos-containing floor tile and/or mastic adhered to it as asbestos-containing waste.
 - b. 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 entire surface is wet. Do not allow 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 floor continuously wet throughout removal operation.
 - c. Remove tiles using a powered spade, or stripping machine. 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 Asbestos-Containing Material.
2. Pick up whole tiles, stack, place in boxes or wrap 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, or place directly in steel leak-tight drums.
4. Place bagged waste in a second disposal bag during decontamination and dispose of waste as required by Section 02084 – Disposal of Asbestos-Containing Material.

3.7 STEP TWO – NON-FRIABLE REMOVAL OF ADHESIVE RESIDUE

A. After removal of resilient flooring, remove in a non-friable manner all residue of adhesive with the use of hand tools only from the floor using the following procedure:

1. Start in the corner of the room farthest from the entrance door and moisten an area of the adhesive (approximately 3-10 feet) with removal solvent. Wet scrape with a stiff-bladed razor or floor scraper removing ridges and any loose adhesives, until only a thin smooth film remains.

2. Place loosened adhesive residues into a 6-mil polyethylene lined fiber drum, and label as specified in Section 02084 – Disposal of Asbestos-Containing Material.
3. Continue the above steps until the entire area is wet scraped.
4. Place sawdust over a 6 by 6 foot area and wet remove the existing adhesive residue using hand methods. The sawdust and subfloor must be continuously kept wet.
5. Occasionally, push away cutting sawdust from the subfloor with a squeegee to check for complete removal.
6. Remove adhesive around the edge of the room and missed areas with hand tools and scrub pad.
7. Wet-scrape sawdust into a pile using a stiff-bladed razor or floor scraper or squeegee and place sawdust and adhesive residue in a 6 mil polyethylene-lined fiber drum, and label as specified in Section 02084 – Disposal of Asbestos-Containing Material.
8. Scrub area with a 1% liquid Tide™ and water solution.
9. Mop up standing liquid Tide™ and water solution.
10. Rinse area with clear, clean water.
11. Mop up standing rinse water.
12. Perform a second rinse with clear, clean water.
13. Mop up standing rinse water.
14. Perform pH test.
15. Continue with the above steps until the entire room is complete.
16. Allow subfloor to dry and vacuum up any remaining sawdust using a vacuum equipped with a HEPA filter and metal floor tool (no brush).
17. Wet-wipe and/or wash down all equipment used during the work.

3.8 STEP TWO – MECHANICAL REMOVAL OF ADHESIVE RESIDUE

- A. After removal of resilient flooring, remove all residue of adhesive from the floor using the following procedure:
 1. Start in the corner of the room farthest from the entrance door and moisten an area of the adhesive (approximately 3-10 feet) with removal solvent. Wet scrape with a mechanical floor scraper removing ridges and any loose adhesives, until only a thin smooth film remains.
 2. Place loosened adhesive residues into a 6-mil polyethylene lined fiber drum, and label as specified in Section 02084 – Disposal of Asbestos-Containing Material.
 3. Continue the above steps until the entire area is wet scraped.
 4. Place sawdust over a 6 by 6 foot area and wet remove the existing adhesive residue using hand methods. The sawdust and subfloor must be continuously kept wet.
 5. Occasionally, push away cutting sawdust from the subfloor with a squeegee to check for complete removal.
 6. Remove adhesive around the edge of the room and missed areas with hand tools and scrub pad.
 7. Wet-scrape sawdust into a pile using a stiff-bladed razor or floor scraper or squeegee and place sawdust and adhesive residue in a 6 mil polyethylene-lined fiber drum, and label as specified in Section 02084 – Disposal of Asbestos-Containing Material.
 8. Scrub area with a 1% liquid Tide™ and water solution.
 9. Mop up standing liquid Tide™ and water solution.
 10. Rinse area with clear, clean water.
 11. Mop up standing rinse water.
 12. Perform a second rinse with clear, clean water.
 13. Mop up standing rinse water.
 14. Perform pH test.
 15. Continue with the above steps until the entire room is complete.
 16. Allow subfloor to dry and vacuum up any remaining sawdust using a vacuum equipped with a HEPA filter and metal floor tool (no brush).
 17. Wet-wipe and/or wash down all equipment used during the work.

3.9 STEP TWO – MECHANICAL REMOVAL OF ADHESIVE RESIDUE

- A. After removal of resilient flooring, remove all residue of adhesive from the floor using the following procedure:
1. Start in the corner of the room farthest from the entrance door and moisten an area of the adhesive (approximately 3-10 feet) with amended water. Wet scrape with a mechanical floor scraper removing ridges and any loose adhesives, until only a thin smooth film remains.
 2. Place loosened adhesive residues into a 6-mil polyethylene lined fiber drum, and label as specified in Section 02084 – Disposal of Asbestos-Containing Material.
 3. Continue the above steps until the entire area is wet scraped.
 4. Remove adhesive around the edge of the room and missed areas with hand tools and scrub pad.
 5. Wet-scrape material into a pile using a stiff-bladed razor or floor scraper or squeegee and place sawdust and adhesive residue in a 6 mil polyethylene-lined fiber drum, and label as specified in Section 02084 – Disposal of Asbestos-Containing Material.
 6. Rinse area with clear, clean water.
 7. Mop up standing rinse water.
 8. Perform a second rinse with clear, clean water.
 9. Mop up standing rinse water.
 10. Continue with the above steps until the entire room is complete.
 11. Allow subfloor to dry and vacuum up any remaining material using a vacuum equipped with a HEPA filter and metal floor tool (no brush).
 12. Wet-wipe and/or wash down all equipment used during the work.

3.10 WORK AREA CLEARANCE

- A. After completion of all resilient flooring and adhesive removal work and prior to removal of primary and 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 ***

Appendix A

ATTACHMENT A

RESPONSIBLE CONTRACTOR AND CERTIFICATION OF COMPLIANCE

**Clarkfield School
2019 Asbestos Removal**

Minn. Stat. §16.285, Subd. 7, **IMPLEMENTATION**. any prime contractor or subcontractor that does not meet the minimum criteria in subdivision 3 or fails to verify it meets those criteria is not a responsible contractor and is not eligible to be awarded a construction contract for the project or to perform work on the project.

Minn. Stat. §16.285, Subd. 3. **RESPONSIBLE CONTRACTOR, MINIMUM CRITERIA**. "Responsible contractor" means a contractor that conforms to the responsibility requirements in the solicitation document for its portion of the work on the project and verifies that it meets the following minimum criteria:

1. The Contractor:
 - a. is in compliance with workers' compensation and unemployment insurance requirements;
 - b. is currently registered with the Department of Revenue and the Department of Employment and Economic Development if it has employees;
 - c. has a valid federal tax identification number or a valid Social Security number if an individual; and
 - d. has filed a certificate of authority to transact business in Minnesota with the secretary of state if a foreign corporation or cooperative.

2. The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 177.24, 177.25, 177.41 to 177.44, 181.13, 181.14, or 181.722, and has not violated United States Code, title 29, sections 201 to 219, or United States Code, title 40, sections 3141 to 3148. For purposes of this clause, a violation occurs when a contractor or related entity:
 - a. repeatedly fails to pay statutorily required wages or penalties on one or more separate projects for a total underpayment of \$25,000 or more within the three-year period;
 - b. has been issued an order to comply by the commissioner of labor and industry that has become final;
 - c. has been issued at least two determination letters within the three-year period by the Department of Transportation finding an underpayment by the contractor or related entity to its own employees;
 - d. has been found by the commissioner of labor and industry to have repeatedly or willfully violated any of the sections referenced in this clause pursuant to section 177.27;
 - e. has been issued a ruling or findings of underpayment by the administrator of the Wage and Hour Division of the United States Department of Labor that have become final or have been upheld by an administrative law judge or the Administrative Review Board; or
 - f. has been found liable for underpayment of wages or penalties or misrepresenting a construction worker as an independent contractor in an action brought in a court having jurisdiction.

Provided that, if the contractor or related entity contests a determination of underpayment by the Department of Transportation in a contested case proceeding, a violation does not occur until the contested case proceeding has concluded with a determination that the contractor or related entity underpaid wages or penalties;

3. The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 181.723 or chapter 326B. For purposes of this clause, a violation occurs when a contractor or related entity has been issued a final administrative or licensing order;

4. The contractor or related entity has not, more than twice during the three-year period before submitting the verification, had a certificate of compliance under section 363A.36 revoked or suspended based on the provisions of section 363A.36, with the revocation or suspension becoming final because it was upheld by the Office of Administrative Hearings or was not appealed to the office;

5. The contractor or related entity has not received a final determination assessing a monetary sanction from the Department of Administration or Transportation for failure to meet targeted group business, disadvantaged business enterprise, or veteran-owned business goals, due to a lack of good faith effort, more than once during the three-year period before submitting the verification;
6. The contractor or related entity is not currently suspended or debarred by the federal government or the state of Minnesota or any of its departments, commissions, agencies, or political subdivisions; and
7. All subcontractors that the contractor intends to use to perform project work have verified to the contractor through a signed statement under oath by an owner or officer that they meet the minimum criteria listed in clauses (1) to (6).

Minn. Stat. §16.285, Subd. 5. **SUBCONTRACTOR VERIFICATION.** A prime contractor or subcontractor shall include in its verification of compliance under subdivision 4 a list of all of its first-tier subcontractors that it intends to retain for work on the project.

If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors.

A prime contractor shall submit to the contracting authority upon request copies of the signed verifications of compliance from all subcontractors of any tier pursuant to subdivision 3, clause (7). A prime contractor and subcontractors shall not be responsible for the false statements of any subcontractor with which they do not have a direct contractual relationship. A prime contractor and subcontractors shall be responsible for false statements by their first-tier subcontractors with which they have a direct contractual relationship only if they accept the verification of compliance with actual knowledge that it contains a false statement.

Minn. Stat. §16.285, Subd. 4. **VERIFICATION OF COMPLIANCE.** A contractor responding to a solicitation document of a contracting authority shall submit to the contracting authority a signed statement under oath by an owner or officer verifying compliance with each of the minimum criteria in subdivision 3 at the time that it responds to the solicitation document.

A contracting authority may accept a sworn statement as sufficient to demonstrate that a contractor is a responsible contractor and shall not be held liable for awarding a contract in reasonable reliance on that statement. Failure to verify compliance with any one of the minimum criteria or a false statement under oath in a verification of compliance shall render the prime contractor or subcontractor that makes the false statement ineligible to be awarded a construction contract on the project for which the verification was submitted.

A false statement under oath verifying compliance with any of the minimum criteria may result in termination of a construction contract that has already been awarded to a prime contractor or subcontractor that submits a false statement. A contracting authority shall not be liable for declining to award a contract or terminating a contract based on a reasonable determination that the contractor

CERTIFICATION

By signing this document, I certify that I am an owner or officer of the company, and I swear under oath that:

- 1) My company meets each of the Minimum Criteria to be a responsible contractor as defined herein and is in compliance with Minn. Stat. §16.285,
- 2) I have included Attachment A-1 with my company's solicitation response, and
- 3) if my company is awarded a contract, I will also submit Attachment A-2 as required.

Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

ATTACHMENT A-2

ADDITIONAL SUBCONTRACTOR LIST

(Prime Contractor to submit as subcontractors are added to the project)

**Clarkfield School
2019 Asbestos Removal**

This form must be submitted to the Project Manager or individual as identified in the solicitation document.

Minn. Stat. §16.285, Subd. 5: If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors.

Additional Subcontractor Names (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

SUPPLEMENTAL CERTIFICATION FOR ATTACHMENT A-2

By signing this document, I certify that I am an owner or officer of the company, and I swear under oath that:

All additional subcontractors listed on Attachment A-2 have verified through a signed statement under oath by an owner or officer that they meet the minimum criteria to be a responsible contractor as defined in Minn. Stat. §16.285.

Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

Appendix B

June 4, 2019

Ms. Janel Timm
Property & Public Services Director
Yellow Medicine County
810 - 8th Avenue
Granite Falls, MN 56241

**RE: Clarkfield School
Asbestos Demo Inspection
IEA Project #201910454**

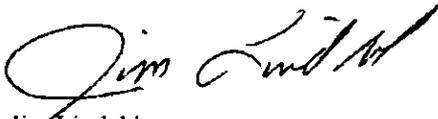
Dear Ms. Timm:

Enclosed please find one copy of the asbestos materials inspection report for the above-referenced location.

If you have any questions or require further assistance, please do not hesitate to contact me at 763-315-7900.

Sincerely,

IEA, Inc.



Jim Lindahl
Senior Project Manager

JL/wb 060419

Enc.

cc File

INSTITUTE FOR ENVIRONMENTAL ASSESSMENT, INC.
www.ieasafety.com

BROOKLYN PARK
1210 West Broadway, 2nd
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763-315-7900 FAX 763-315-7929
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ROCHESTER
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VIRGINIA
5525 Federal Avenue
Monticello, MN 55708
218-430-9521
www.ieasafety.com

**ASBESTOS
DEMO
INSPECTION**

**Clarkfield School
301 – 13th Street
Clarkfield, MN 56223**

June 4, 2019

Submitted to:

**Janel Timm
Yellow Medicine County**

Submitted by:

***Institute for Environmental Assessment
9201 West Broadway North, Suite 600
Brooklyn Park, MN 55445-1922***

763-315-7900 / 800-233-9513

IEA Project #201910454

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- Asbestos Summary and Inspection Report

SECTION II

- Asbestos Sample Locations Drawing

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- Asbestos Laboratory Report

SECTION IV

- Asbestos Inspectors' Licenses

SECTION I

Asbestos Summary and Inspection Report

**Asbestos Summary
Clarkfield School
301 – 13th Street
Clarkfield, MN 56223**

On the dates of May 6, 7 & 8, 2019, an inspection for asbestos-containing materials (ACM) was performed at the above-referenced location. The scope of the inspection included all reasonably-accessible suspect ACM within the building. Since there were some limitations during this inspection, there may be additional materials not identified on the report located within wall cavities, pipe chases and/or other inaccessible locations. Suspect ACM was identified and sampled for asbestos content.

Identified materials confirmed to be ACM include the following:

- ◆ Pre-formed pipe insulation
- ◆ Millboard pipe insulation
- ◆ Mudded fittings (excludes 1977 Addition)
- ◆ 1' x 1' ceiling tile adhesive (pucks, excludes Southeast Gymnasium Addition)
- ◆ 9" x 9" floor tile (throughout building)
- ◆ 12" x 12" floor tile (scattered throughout building)
- ◆ HVAC duct insulation (scattered throughout building)
- ◆ Black floor mastic (scattered throughout building)
- ◆ Exterior wall insulation panel adhesive (North Classroom Additions)
- ◆ Water holding tanks (Boiler Room)
- ◆ Tackboard adhesive (Brown) (throughout building)
- ◆ Chalkboard adhesive (Gray) – Northwest Addition
- ◆ BUR roof membrane (1977)
- ◆ BUR roof base flashing (1977)
- ◆ Exterior windowsill caulking (throughout)
- ◆ Exterior wall caulking (throughout)

The following suspect materials were not sampled as part of the inspection. These materials are assumed to contain asbestos and shall be treated as ACM or sampled prior to disturbance to determine if they are ACM or not.

Identified materials assumed to be ACM include the following:

- ◆ Fire doors (1958, 1960 & 1977)
- ◆ Boiler gaskets
- ◆ All interior boiler linings (2 units)

Specific locations of these materials, as well as those suspect materials which were analyzed and were found not to contain asbestos, are identified in the attached report.

This inspection meets the requirements of the Minnesota Pollution Control Agency (MPCA) and Minnesota OSHA (MNOSHA) for an asbestos demolition inspection.

Bulk samples of accessible suspect material were collected and analyzed in accordance with Environmental Protection Agency (EPA) sampling and analytical procedure requirements. Sampling was conducted in a manner determined by the inspector to be sufficient to identify whether the suspect materials are asbestos containing.

The purpose of the inspection was to identify all suspect materials that may contain asbestos prior to demolition. Any suspect materials not identified on the survey that are uncovered prior to demolition should be assumed to contain asbestos or sampled.

GENERAL COMMENTS

The report is prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted practices. Other than as provided in the preceding sentence and in our Proposal #8030 dated April 1, 2019, regarding the Hazardous Materials Assessment at Clarkfield School, including the General Conditions attached thereto, no warranties are extended or made.

Yellow Medicine County
Six Month Periodic Surveillance Report for:
Located at:

Clarkfield School
301 - 13th Street
Clarkfield, MN, 56223

Conducted On: 5/17/2019
Conducted By: Kyle Moret

Key		
% of Asbestos	EPA Assessment Category	Response Action
CH Chrysotile	1 = Damaged or significantly damaged TSI ACM.	A = Cleanup ACM debris.
AM Amosite	2 = Damaged friable surfacing ACM.	B = Encapsulate slight damage on TSI.
CR Crocidolite	3 = Significantly damaged friable surfacing ACM.	C = Patch TSI and/or repair ACM cover.
ACT Actinolite	4 = Damaged or significantly damaged friable miscellaneous ACM.	D = Enclose or protect accessible sections with protective barrier.
TR Tremolite	5 = ACBM with potential for damage.	E = Remove section of damaged ACM.
ANT Anthophyllite	6 = ACBM with potential for significant damage.	F = Remove ACM and replace with non-ACM.
Assumed	7 = Remaining friable ACBM or friable suspect ACBM.	G = Isolate area until repaired/removed.
None		H = Encapsulate slight damage.
Detected		I = Remove and replace damaged or loose tile section.
NSM Nonsuspect material		J = Monitor condition of material(s).
NEW		
Material installed since original AHERA inspection (1988/1989). Tracked for clients' benefit for inventory purposes.		

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
1	MDA	Plaster	THROUGHOUT 1957 ADDITION	4500 Sq Ft			NONE DETECTED		
CAD #:		1957 Addition							
Comments:									Sample #: 050719JL-11, 12, 13, 93, 94, 95, 96
2	ROA	Baseboard/Mopboard Adhesive	THROUGHOUT 1957 ADDITION	500 Sq Ft			NONE DETECTED		
CAD #:		Gray							
Comments:									Sample #: 050719JL-08
3	SDA	Wood Floor Felt / Vapor Barrier	1957 GYMNASIUM	8200 Sq Ft			NONE DETECTED		
CAD #:		Black Vapor Barrier							
Comments:									Sample #: 050719JL-01, 02
4	LOA	Flexible Duct Connector	1957 GYMNASIUM NE FAN ROOM	4 Sq Ft			NONE DETECTED		
CAD #:		Green Duct Connector							
Comments:									Sample #: 050719JL-03
5	X1A	Miscellaneous Material	WOMEN'S RESTROOM SOUTH OF 1957 GYMNASIUM	350 Sq Ft			NONE DETECTED		
CAD #:		4" X 4" White Ceramic Wall Tile System							
Comments:									Sample #: 050719JL-04
6	I3A	2' x 4' Ceiling Tile	WOMEN'S RESTROOM SOUTH OF 1957 GYMNASIUM	150 Sq Ft			NONE DETECTED		
CAD #:		Pockmarks and Pinholes							
Comments:									Sample #: 050719JL-05
7	X0A	Miscellaneous Material	WOMEN'S RESTROOM SOUTH OF 1957 GYMNASIUM	3 Sq Ft			NONE DETECTED		
CAD #:		Gray Caulking							
Comments:									Sample #: 050719JL-06
8	NOA	Drywall/Joint Compound	WOMEN'S RESTROOM SOUTH OF 1957 GYMNASIUM	300 Sq Ft			NONE DETECTED		
CAD #:		Textured Sheetrock							
Comments:									Sample #: 050719JL-07
9	Q0A	Carpet Adhesive	CORRIDOR SOUTH OF 1957 GYMNASIUM	400 Sq Ft			NONE DETECTED		
CAD #:		Berber Carpet							
Comments:									Sample #: 050719JL-10

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
10 CAD #:	K2A	12" x 12" Vinyl Floor Tile & Mastic Gray Mottle	TICKET BOOTH SOUTH OF 1957 GYMNASIUM	200 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-09
11 CAD #:	X1A	Miscellaneous Material 4" X 4" White Ceramic Wall Tile System	MEN'S RESTROOM SOUTH OF 1957 GYMNASIUM	350 Sq Ft			NONE DETECTED		
Comments:									Sample #:
12 CAD #:	K2A	12" x 12" Vinyl Floor Tile & Mastic Gray Mottle	CORRIDOR WEST OF 1957 GYMNASIUM	1000 Sq Ft			NONE DETECTED		
Comments:									Sample #:
13 CAD #:	B3A	Pre-Formed Pipe Insulation 1957 Addition	1957 ADDITION GIRL'S LOCKER ROOM	20 Lin Ft	0 Lin Ft	N	<1-30 CH, 20 AM	5	
Comments:									Sample #: 050719JL-14
14 CAD #:	B2A	Millboard Pipe Insulation 1957/58 Addition	1957 ADDITION GIRL'S LOCKER ROOM	12 Lin Ft	0 Lin Ft	N	10-60 CH	5	
Comments:									Sample #: 050719JL-15
15 CAD #:	P0A	Fire Doors Elevator Equipment Door	1957 ADDITION GIRL'S LOCKER ROOM	20 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-16
16 CAD #:	U0A	Light Pad Insulation Round	1957 GYMNASIUM NW FAN ROOM	14 Sq Ft	0 Sq Ft	N	55 CH	5	
Comments:		14 FIXTURES, 12 IN A BOX							Sample #: 050719JL-17
17 CAD #:	T0A	Light Cord Insulation White Stage Light	1957 GYMNASIUM STAGE	24 Lin Ft	0 Lin Ft	N	ASSUMED	5	
Comments:		12 CORDS							Sample #:
18 CAD #:	S0A	Wood Floor Felt / Vapor Barrier Black Vapor Barrier	1957 GYMNASIUM STAGE	500 Sq Ft			NONE DETECTED		
Comments:									Sample #:
19 CAD #:	F2A	Exterior Duct Insulation Duct Covering on Fiberglass Insulation	1957 NW CUSTODIAL STORAGE	150 Sq Ft	0 Sq Ft	N	55 CH	5	
Comments:									Sample #: 050719JL-18
20 CAD #:	A4A	Mudded Pipe Joints on Fiberglass Insulation 1957 Addition	1957 NW CUSTODIAL STORAGE	5 Joints			NONE DETECTED		
Comments:									Sample #: 050719JL-21
21 CAD #:	A4A	Mudded Pipe Joints on Fiberglass Insulation 1957 Addition	1957 WEIGHT ROOM	1 Joints			NONE DETECTED		
Comments:									Sample #:
22 CAD #:	X0B	Miscellaneous Material Dark Brown Tackboard Adhesive	1957 CHOIR ROOM	15 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:									Sample #: 050719JL-22
23 CAD #:	X0C	Miscellaneous Material Black Chalkboard Adhesive	1957 CHOIR ROOM	10 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-24
24 CAD #:	X0D	Miscellaneous Material Laminate Radiator Countertop	1957 CHOIR ROOM	16 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-23
25 CAD #:	I1A	1' x 1' Acoustical Ceiling Tile Pegboard (1957)	1957 CHOIR ROOM	1000 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:									Sample #:

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
26	W1A	1' x 1' Ceiling Tile Adhesive Pegboard	1957 CHOIR ROOM	250 Sq Ft			NONE DETECTED		
CAD #:						Sample #:	NONE DETECTED		
27	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	1957 CHOIR ROOM	1000 Sq Ft			NONE DETECTED		
CAD #:						Sample #:	NONE DETECTED		
28	K0A	9' x 9' Vinyl Floor Tile & Mastic Green with White Streaks	1957 MUSIC PRACTICE ROOMS	200 Sq Ft	0 Sq Ft		3 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:	050719JL-25		
29	I1A	1' x 1' Acoustical Ceiling Tile Pegboard (1957)	1957 MUSIC PRACTICE ROOMS	200 Sq Ft	0 Sq Ft		ASSUMED	5	
CAD #:						Sample #:			
Comments:						Sample #:	NONE DETECTED		
30	W1A	1' x 1' Ceiling Tile Adhesive Pegboard	1957 MUSIC PRACTICE ROOMS	75 Sq Ft			NONE DETECTED		
CAD #:						Sample #:	050719JL-26		
31	I1A	1' x 1' Acoustical Ceiling Tile Pegboard (1957)	1957 MUSIC PRACTICE ROOMS LOBBY	750 Sq Ft	0 Sq Ft		ASSUMED	5	
CAD #:						Sample #:			
Comments:						Sample #:	NONE DETECTED		
32	W1A	1' x 1' Ceiling Tile Adhesive Pegboard	1957 MUSIC PRACTICE ROOMS LOBBY	300 Sq Ft			NONE DETECTED		
CAD #:						Sample #:			
33	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	1957 MUSIC PRACTICE ROOMS LOBBY	750 Sq Ft			NONE DETECTED		
CAD #:						Sample #:			
34	I1A	1' x 1' Acoustical Ceiling Tile Pegboard (1957)	1957 BAND ROOM	1000 Sq Ft	0 Sq Ft		ASSUMED	5	
CAD #:						Sample #:			
35	W1A	1' x 1' Ceiling Tile Adhesive Pegboard	1957 BAND ROOM	250 Sq Ft			NONE DETECTED		
CAD #:						Sample #:			
36	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	1957 BAND ROOM	1000 Sq Ft			NONE DETECTED		
CAD #:						Sample #:			
37	K0A	9' x 9' Vinyl Floor Tile & Mastic Green with White Streaks	1957 MUSIC OFFICE	140 Sq Ft	0 Sq Ft		3 CH (TILE), NONE DETECTED (MASTIC)	5	
CAD #:						Sample #:			
38	P0B	Fire Doors Piced Metal Fire Door	ORIGINAL BUILDING CORRIDORS	300 Sq Ft	0 Sq Ft		ASSUMED	5	
CAD #:						Sample #:			
39	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	WEST ELEVATOR ACCESS HALLWAY	650 Sq Ft			NONE DETECTED		
CAD #:						Sample #:			
40	K2B	12' x 12' Vinyl Floor Tile & Mastic Cream Mottle	WEST ELEVATOR ACCESS HALLWAY	650 Sq Ft	0 Sq Ft		NONE DETECTED (TILE), 5 CH (BLACK MASTIC)	5	
CAD #:						Sample #:	050719JL-27		
Comments:						Sample #:	NSM		
41	I1C	1' x 1' Acoustical Ceiling Tile Wood Fiber	THROUGHOUT 1920 ORIGINAL BUILDING	7500 Sq Ft					
CAD #:						Sample #:			
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
42 CAD #	MOB	Plaster 1920 Original Building	THROUGHOUT 1920 ORIGINAL BUILDING	30000 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-97; 050719JL-98; 050719JL-99; 050719JL-100; 050719JL-101; 050719JL-101; 050719JL-102
43 CAD #	X0F	Miscellaneous Material Interior Wall Vapor Barrier	THROUGHOUT 1920 ORIGINAL BUILDING FIRST FLOOR PERIMETER	3000 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-36
44 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	THROUGHOUT 1920 ORIGINAL BUILDING HALLWAYS	5000 Sq Ft			NONE DETECTED		
Comments:									Sample #:
45 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 169	800 Sq Ft			NONE DETECTED		
Comments:									Sample #:
46 CAD #	ROA	Baseboard/Mopboard Adhesive Gray	ROOM 169	25 Sq Ft			NONE DETECTED		
Comments:									Sample #:
47 CAD #	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 257	800 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:									Sample #:
48 CAD #	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 257	200 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:									Sample #: 050719JL-28
49 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 257	800 Sq Ft			NONE DETECTED		
Comments:									Sample #:
50 CAD #	X0E	Miscellaneous Material Metal Framed Chalkboard Adhesive	ROOM 257	15 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:									Sample #:
51 CAD #	ROA	Baseboard/Mopboard Adhesive Gray	ROOM 257	25 Sq Ft			NONE DETECTED		
Comments:									Sample #:
52 CAD #	I2A	2' x 2' Acoustical Ceiling Tile Multi Sized Holes	ROOM 256	1500 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-29
53 CAD #	I3B	2' x 4' Ceiling Tile Worms	ROOM 256	1500 Sq Ft			NONE DETECTED		
Comments:									Sample #: 050719JL-30
54 CAD #	ROA	Baseboard/Mopboard Adhesive Gray	ROOM 256	35 Sq Ft			NONE DETECTED		
Comments:									Sample #:
55 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	1920 ORIGINAL BUILDING SECOND FLOOR EAST BOY'S RESTROOM	300 Sq Ft			NONE DETECTED		
Comments:									Sample #:
56 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 258	800 Sq Ft			NONE DETECTED		
Comments:									Sample #:
57 CAD #	ROA	Baseboard/Mopboard Adhesive Gray	ROOM 258	25 Sq Ft			NONE DETECTED		
Comments:									Sample #:

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
58 CAD #:	X0B	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 258	25 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:						Sample #:			
59 CAD #:	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 251	2400 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
60 CAD #:	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 251	600 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
61 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 251	2400 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
62 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 251	50 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
63 CAD #:	K0A	9" x 9" Vinyl Floor Tile & Mastic Green with White Streaks	ROOM 251	2400 Sq Ft	0 Sq Ft	Y	3 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
64 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 259	800 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
65 CAD #:	X0E	Miscellaneous Material Metal Framed Chalkboard Adhesive	ROOM 259	20 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
66 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 259	20 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
67 CAD #:	S0B	Wood Floor Felt / Vapor Barrier 1920 Original Building	ROOM 252	800 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
68 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 253	800 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
69 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 253	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
70 CAD #:	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 254	800 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
71 CAD #:	W1A	1' x 1' Ceiling Tile Adhesive Pegboard	ROOM 254	200 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
72 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 254	800 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
73 CAD #:	X0B	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 254	20 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
74 CAD #	R0B	Baseboard/Mopboard Adhesive Black	ROOM 254	25 Sq Ft			NONE DETECTED		
Comments:						Sample # 050719JL-32			
75 CAD #	K0B	9" x 9" Vinyl Floor Tile & Mastic Tan with White and Brown Streaks	ROOM 254	800 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample # 050719JL-33			
76 CAD #	I3B	2' x 4' Ceiling Tile Worms	1920 ORIGINAL BUILDING SECOND FLOOR GIRL'S RESTROOM	16 Sq Ft			NONE DETECTED		
Comments:		ABOVE CEILING AT ENTRANCE				Sample #:			
77 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 255	750 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
78 CAD #	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 255	250 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
79 CAD #	X0E	Miscellaneous Material Metal Framed Chalkboard Adhesive	ROOM 255	25 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
80 CAD #	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 255	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
81 CAD #	I3B	2' x 4' Ceiling Tile Worms	THROUGHOUT ELEMENTARY OFFICE AREA	1500 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
82 CAD #	K0C	9" x 9" Vinyl Floor Tile & Mastic Gray	THROUGHOUT ELEMENTARY OFFICE AREA	1500 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:		UNDER CARPET				Sample # 050719JL-35			
83 CAD #	K0D	9" x 9" Vinyl Floor Tile & Mastic Brown with Dark Brown and White Streaks	ELEMENTARY OFFICE RESTROOM	150 Sq Ft	0 Sq Ft	N	8 CH (TILE), 2 CH (MASTIC)	5	
Comments:						Sample # 050719JL-34			
84 CAD #	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	THROUGHOUT HIGH SCHOOL OFFICE AREA	200 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
85 CAD #	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	THROUGHOUT HIGH SCHOOL OFFICE AREA	75 Sq Ft	0 Sq Ft	Y	2 CH	5	
Comments:						Sample #:			
86 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	THROUGHOUT HIGH SCHOOL OFFICE AREA	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
87 CAD #	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 153	500 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
88 CAD #	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 153	150 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
89 CAD #	K0B	9" x 9" Vinyl Floor Tile & Mastic Tan with White and Brown Streaks	ROOM 153	500 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
90	X08	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 153	30 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments									
91	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 154	500 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:									
92	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 154	150 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:									
93	X08	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 154	25 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:									
94	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 155	200 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:									
95	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 155	800 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:									
96	X08	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 155	25 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:									
97	S08	Wood Floor Felt / Vapor Barrier 1920 Original Building	1920 ORIGINAL BUILDING FIRST FLOOR STAFF LOUNGE	750 Sq Ft			NONE DETECTED		
Comments:									
98	K1A	Sheet Vinyl Flooring & Adhesive Grayish Blue	1920 ORIGINAL BUILDING FIRST FLOOR STAFF LOUNGE	400 Sq Ft			NONE DETECTED		
Comments:									
99	K2B	12' x 12" Vinyl Floor Tile & Mastic Cream Mottle	1920 ORIGINAL BUILDING KITCHEN	800 Sq Ft	0 Sq Ft	N	050719CW-37 NONE DETECTED	5	
Comments:									
100	K0E	9' x 9' Vinyl Floor Tile & Mastic Cream with Spots	1920 ORIGINAL BUILDING CAFETERIA	2500 Sq Ft	0 Sq Ft	N	050719JL-38 5 CH (TILE), 5 CH (MASTIC)	5	
Comments:									
101	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	1920 ORIGINAL BUILDING CAFETERIA	2500 Sq Ft	0 Sq Ft	Y	050719JL-39 ASSUMED	5	
Comments:									
102	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	1920 ORIGINAL BUILDING CAFETERIA	750 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:									
103	R0B	Baseboard/Mopboard Adhesive Black	1920 ORIGINAL BUILDING CAFETERIA	50 Sq Ft			NONE DETECTED		
Comments:									
104	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 168	900 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:									
105	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 168	200 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:									

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
106 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 168	900 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
107 CAD #	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 168	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
108 CAD #	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 167	500 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
109 CAD #	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 167	150 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
110 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 167	500 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
111 CAD #	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 167	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
112 CAD #	K0B	9" x 9" Vinyl Floor Tile & Mastic Tan with White and Brown Streaks	ROOM 167	500 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
113 CAD #	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 167 NORTH	500 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
114 CAD #	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 167 NORTH	150 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
115 CAD #	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 167 NORTH	500 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
116 CAD #	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 167 NORTH	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
117 CAD #	K0B	9" x 9" Vinyl Floor Tile & Mastic Tan with White and Brown Streaks	ROOM 167 NORTH	500 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
118 CAD #	J3A	Miscellaneous Cementitious Material Window Sills	THROUGHOUT 1958 ADDITION	250 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
119 CAD #	M0C	Plaster 1958 Addition Plaster	THROUGHOUT 1958 ADDITION	5000 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
120 CAD #	X0H	Miscellaneous Material Exterior Wall Panel Adhesive	THROUGHOUT 1958 ADDITION	25 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
121 CAD #	K0F	9" x 9" Vinyl Floor Tile & Mastic Dark Brown	1958 ADDITION FIRST FLOOR NORTH / SOUTH HALLWAY	1000 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
122 CAD #:	I1D	1' x 1' Acoustical Ceiling Tile 1958 Addition Pegboard	1958 ADDITION FIRST FLOOR NORTH / SOUTH HALLWAY	1000 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
123 CAD #:	W1D	1' x 1' Ceiling Tile Adhesive 1958 Addition Pegboard	1958 ADDITION FIRST FLOOR NORTH / SOUTH HALLWAY	250 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
124 CAD #:	J3B	Miscellaneous Cementitious Material Table Tops	1958 ADDITION FIRST FLOOR NORTH / SOUTH HALLWAY	15 Sq Ft			NONE DETECTED		
Comments:	BROKEN ON FLOOR IN HALLWAY					Sample #:			
125 CAD #:	I1D	1' x 1' Acoustical Ceiling Tile 1958 Addition Pegboard	ROOM 166	1000 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
126 CAD #:	W1D	1' x 1' Ceiling Tile Adhesive 1958 Addition Pegboard	ROOM 166	250 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
127 CAD #:	R0C	Baseboard/Mopboard Adhesive 1958 Black	ROOM 166	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
128 CAD #:	G1A	Sprayed-On Acoustical Finish White Fluffy	ROOM 165	500 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
129 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 165	20 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
130 CAD #:	X06	Miscellaneous Material 1958 Addition Brown Tackboard Adhesive	ROOM 165	20 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
131 CAD #:	G1A	Sprayed-On Acoustical Finish White Fluffy	ROOM 164	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
132 CAD #:	K0B	9" x 9" Vinyl Floor Tile & Mastic Tan with White and Brown Streaks	ROOM 164	1000 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
133 CAD #:	R0C	Baseboard/Mopboard Adhesive 1958 Black	ROOM 164	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
134 CAD #:	B2A	Millboard Pipe Insulation 1957/58 Addition	ROOM 164	24 Lin Ft	0 Lin Ft	N	10-60 CH	5	
Comments:	RISERS FEEDING SINKS					Sample #:			
135 CAD #:	K0F	9" x 9" Vinyl Floor Tile & Mastic Dark Brown	1958 ADDITION SECOND FLOOR NORTH / SOUTH HALLWAY	1000 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
136 CAD #:	I1D	1' x 1' Acoustical Ceiling Tile 1958 Addition Pegboard	1958 ADDITION SECOND FLOOR NORTH / SOUTH HALLWAY	1000 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
137 CAD #:	W1D	1' x 1' Ceiling Tile Adhesive 1958 Addition Pegboard	1958 ADDITION SECOND FLOOR NORTH / SOUTH HALLWAY	250 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
138 CAD #:	I1D	1' x 1' Acoustical Ceiling Tile 1958 Addition Pegboard	ROOM 263	1000 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
139 CAD #:	W1D	1' x 1' Ceiling Tile Adhesive 1958 Addition Pegboard	ROOM 263	250 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
140 CAD #:	R0C	Baseboard/Mopboard Adhesive 1958 Black	ROOM 263	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
141 CAD #:	K0G	9" x 9" Vinyl Floor Tile & Mastic Light Green with Tan Streaks	ROOM 263	1000 Sq Ft	0 Sq Ft	N	2 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #	050719JL-50		
142 CAD #:	R0C	Baseboard/Mopboard Adhesive 1958 Black	ROOM 262	15 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
143 CAD #:	K0G	9" x 9" Vinyl Floor Tile & Mastic Light Green with Tan Streaks	ROOM 262	500 Sq Ft	0 Sq Ft	N	2 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
144 CAD #:	B2A	Millboard Pipe Insulation 1957/58 Addition	ROOM 262	7 Lin Ft	0 Lin Ft	N	10-60 CH	5	
Comments:						Sample #	050719JL-51		
145 CAD #:	K0F	9" x 9" Vinyl Floor Tile & Mastic Dark Brown	DARKROOM	50 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
146 CAD #:	J3B	Miscellaneous Cementitious Material Table Tops	DARKROOM	30 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
147 CAD #:	I1D	1' x 1' Acoustical Ceiling Tile 1958 Addition Pegboard	ROOM 261	1000 Sq Ft	0 Sq Ft	Y	ASSUMED	5	
Comments:						Sample #:			
148 CAD #:	W1D	1' x 1' Ceiling Tile Adhesive 1958 Addition Pegboard	ROOM 261	250 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
149 CAD #:	R0C	Baseboard/Mopboard Adhesive 1958 Black	ROOM 261	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
150 CAD #:	K0G	9" x 9" Vinyl Floor Tile & Mastic Light Green with Tan Streaks	ROOM 261	1000 Sq Ft	0 Sq Ft	N	2 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:						Sample #:			
151 CAD #:	B2A	Millboard Pipe Insulation 1957/58 Addition	ROOM 261	90 Lin Ft	0 Lin Ft	N	10-60 CH	5	
Comments:						Sample #	050719JL-52		
152 CAD #:	J3B	Miscellaneous Cementitious Material Table Tops	ROOM 261	60 Sq Ft			NONE DETECTED		
Comments:						Sample #	050719JL-53		
153 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	OFFICES NEXT TO HANDICAP RESTROOM	500 Sq Ft			NONE DETECTED		
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
154 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	OFFICES NEXT TO HANDICAP RESTROOM	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
155 CAD #:	K1B	Sheet Vinyl Flooring & Adhesive Floral Square Pattern	KITCHENETTE OFF OF HANDICAP RESTROOM	120 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
156 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	KITCHENETTE OFF OF HANDICAP RESTROOM	15 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
157 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	KITCHENETTE OFF OF HANDICAP RESTROOM	150 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
158 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	HANDICAP RESTROOM	150 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
159 CAD #:	I3B	2' x 4' Ceiling Tile Worms	HALLWAY OUTSIDE HANDICAP RESTROOM	350 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
160 CAD #:	R0B	Baseboard/Mopboard Adhesive Black	HALLWAY OUTSIDE HANDICAP RESTROOM	35 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
161 CAD #:	S0C	Wood Floor Felt / Vapor Barrier 1920 Original Building Basement	BASEMENT MAINTENANCE SHOP	900 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
162 CAD #:	D0A	Exterior Boiler Insulation Boiler Crown	BOILER ROOM	300 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
163 CAD #:	D2A	Interior Boiler Insulation Boiler Refractory	BOILER ROOM	500 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
164 CAD #:	D3A	Gasket Boiler Gaskets	BOILER ROOM	300 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:		FRONT BURNER AND REAR ACCESS HATCH GASKETS				Sample #:			
165 CAD #:	X0W	Miscellaneous Material Incinerator/Kiln Brick	BOILER ROOM	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
166 CAD #:	C2A	Water Tank Insulation Water Tank	BOILER ROOM	200 Sq Ft	0 Sq Ft	N	25 CH	5	
Comments:		NORTH WATER TANK				Sample #:			
167 CAD #:	C2B	Water Tank Insulation West Water Tank	BOILER ROOM	300 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
168 CAD #:	X0P	Miscellaneous Material Incinerator Refractory	BOILER ROOM	75 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
169 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	O I D COAL ROOM	13 Joints			NONE DETECTED		
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
170	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	TUNNEL OFF OF OLD COAL ROOM	25 Joints			NONE DETECTED		
Comments:									
171	I3C	2' x 4' Ceiling Tile Grubs with Pin Holes	ROOM 110	1000 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									
172	R0D	Baseboard/Mopboard Adhesive Dark Brown Adhesive	ROOM 110	25 Sq Ft	0 Sq Ft	Sample # 050719JL-63 N	ASSUMED	5	
CAD #:									
Comments:									
173	I3C	2' x 4' Ceiling Tile Grubs with Pin Holes	ROOM 109	900 Sq Ft		Sample # 050719JL-66 N	NONE DETECTED		
CAD #:									
Comments:									
174	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 109	25 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									
175	X0I	Miscellaneous Material Tan Chalkboard Adhesive	HALLWAY FROM ROOM 110 TO ROOM 109	25 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									
176	I3C	2' x 4' Ceiling Tile Grubs with Pin Holes	ROOM 108	900 Sq Ft		Sample # 050719JL-64 N	NONE DETECTED		
CAD #:									
Comments:									
177	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 108	25 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									
178	I2B	2' x 2' Acoustical Ceiling Tile Grubs and Pin Holes	HALLWAY TO SOUTHWEST GYMNASIUM	150 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									
179	I2B	2' x 2' Acoustical Ceiling Tile Grubs and Pin Holes	ROOM 212	1000 Sq Ft		Sample # 050719JL-66 N	NONE DETECTED		
CAD #:									
Comments:									
180	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 212	25 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									
181	I1B	1' x 1' Acoustical Ceiling Tile 1920 Pegboard	ROOM 211	550 Sq Ft	0 Sq Ft	Sample #:	ASSUMED	5	
CAD #:									
Comments:									
182	W1B	1' x 1' Ceiling Tile Adhesive 1920 Pegboard	ROOM 211	125 Sq Ft	0 Sq Ft	Sample #:	2 CH	5	
CAD #:									
Comments:									
183	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 211	20 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									
184	K0B	9' x 9' Vinyl Floor Tile & Mastic Tan with White and Brown Streaks	ROOM 211	200 Sq Ft	0 Sq Ft	Sample #:	5 CH (TILE), NONE DETECTED (MASTIC)	5	
CAD #:									
Comments:									
185	I3C	2' x 4' Ceiling Tile Grubs with Pin Holes	ROOM 210	1000 Sq Ft		Sample #:	NONE DETECTED		
CAD #:									
Comments:									

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
186 CAD #:	X05	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 210	25 Sq Ft	0 Sq Ft	Y	3 CH	5	
Comments:	187 CAD #:	2' x 4' Ceiling Tile Worms	ROOM 209	1000 Sq Ft		Sample #:	NONE DETECTED		
Comments:	188 CAD #:	2' x 4' Ceiling Tile Worms	ROOM 208	1000 Sq Ft		Sample #:	NONE DETECTED		
Comments:	189 CAD #:	9' x 9" Vinyl Floor Tile & Mastic Gray with Black and Salmon Smudges	ROOM 156	1000 Sq Ft	0 Sq Ft	Sample #:	3 CH (TILE), 2 CH (MASTIC)	5	
Comments:	190 CAD #:	Baseboard/Mopboard Adhesive 1988 Black	ROOM 156	25 Sq Ft		Sample #: 050719JL-67	NONE DETECTED		
Comments:	191 CAD #:	12' x 12" Vinyl Floor Tile & Mastic Tan with Brown Streaks	ROOM 156 OFFICE	100 Sq Ft	0 Sq Ft	Sample #:	2 CH (TILE), 3 CH (BLACK MASTIC)	5	
Comments:	192 CAD #:	2' x 4' Ceiling Tile Patterned Holes	ROOM 156 OFFICE	100 Sq Ft		Sample #: 060719JL-68	NONE DETECTED		
Comments:	193 CAD #:	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 158 WEST	1000 Sq Ft		Sample #: 060719JL-69	NONE DETECTED		
Comments:	194 CAD #:	Exterior Duct Insulation Duct Covering on Fiberglass Insulation	ROOM 158 WEST	100 Sq Ft	0 Sq Ft	Sample #:	55 CH	5	
Comments:	195 CAD #:	Flexible Duct Connector Green Duct Connector	ROOM 158 WEST	5 Sq Ft		Sample #: 090719JL-20	NONE DETECTED		
Comments:	196 CAD #:	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 158 EAST	1000 Sq Ft		Sample #:	NONE DETECTED		
Comments:	197 CAD #:	Exterior Duct Insulation Duct Covering on Fiberglass Insulation	ROOM 158 EAST	100 Sq Ft	0 Sq Ft	Sample #:	55 CH	5	
Comments:	198 CAD #:	Flexible Duct Connector Green Duct Connector	ROOM 158 EAST	5 Sq Ft		Sample #:	NONE DETECTED		
Comments:	199 CAD #:	1' x 1' Acoustical Ceiling Tile 1960 Addition	THROUGHOUT 1960 ADDITION	15000 Sq Ft	0 Sq Ft	Sample #:	ASSUMED	5	
Comments:	200 CAD #:	Plaster 1960 Addition	THROUGHOUT 1960 ADDITION	30000 Sq Ft		Sample #:	NONE DETECTED		
Comments:	201 CAD #:	1' x 1' Ceiling Tile Adhesive 1960 Addition	THROUGHOUT 1960 ADDITION	5000 Sq Ft	0 Sq Ft	Sample #: 050719JL-104, 105, 106, 107, 108, 109, 110	2 CH	5	
Comments:						Sample #: 050719JL-70			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
202 CAD #:	K0I	9" x 9" Vinyl Floor Tile & Mastic 1960 Dark Brown	THROUGHOUT 1960 ADDITION	15000 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:							Sample #: 050819JL-71		
203 CAD #:	K0J	9" x 9" Vinyl Floor Tile & Mastic 1960 Tan	THROUGHOUT 1960 ADDITION	9000 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:							Sample #: 050819JL-72		
204 CAD #:	R0E	Baseboard/Mopboard Adhesive 1960 Black Baseboard	THROUGHOUT 1960 ADDITION	500 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:							Sample #:		
205 CAD #:	X0J	Miscellaneous Material 1960 Addition Metal Frame Chalkboard Adhesive	THROUGHOUT 1960 ADDITION	150 Sq Ft	0 Sq Ft	N	8 CH	5	
Comments:		INCLUDES ASSOCIATED TACKBOARD					Sample #: 050719JL-75		
206 CAD #:	J3A	Miscellaneous Cementitious Material Window Sills	THROUGHOUT 1960 ADDITION	375 Sq Ft			NONE DETECTED		
Comments:							Sample #:		
207 CAD #:	X0H	Miscellaneous Material Exterior Wall Panel Adhesive	THROUGHOUT 1960 ADDITION	450 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:							Sample #:		
208 CAD #:	N0B	Drywall/Joint Compound 1960 Addition	THROUGHOUT 1960 ADDITION	150 Sq Ft			NONE DETECTED		
Comments:							Sample #: 050719JL-78		
209 CAD #:	X0K	Miscellaneous Material 1960 Addition Metal Frame Corkboard Adhesive	THROUGHOUT 1960 ADDITION	100 Sq Ft			NONE DETECTED		
Comments:							Sample #: 050719JL-76		
210 CAD #:	K0K	9" x 9" Vinyl Floor Tile & Mastic 1960 Dark Green	THROUGHOUT 1960 ADDITION SECOND FLOOR	1000 Sq Ft	0 Sq Ft	N	5 CH (TILE), NONE DETECTED (MASTIC)	5	
Comments:							Sample #: 050819JL-73		
211 CAD #:	B2B	Millboard Pipe Insulation 1960 Addition	THROUGHOUT 1960 ADDITION SECOND FLOOR	650 Lin Ft	0 Lin Ft	N	ASSUMED	5	
Comments:							Sample #:		
212 CAD #:	A2A	Mudded Pipe Joints on Millboard Insulation 1960 Addition	THROUGHOUT 1960 ADDITION SECOND FLOOR	60 Joints	0 Joints	N	ASSUMED	5	
Comments:							Sample #:		
213 CAD #:	B3B	Pre-Formed Pipe Insulation 1960 Addition	THROUGHOUT 1960 ADDITION SECOND FLOOR	325 Lin Ft	0 Lin Ft	N	ASSUMED	5	
Comments:							Sample #:		
214 CAD #:	A2A	Mudded Pipe Joints on Millboard Insulation 1960 Addition	ROOM 207	1 Joints	0 Joints	N	ASSUMED	5	
Comments:		PIPE CHASE BELOW CHALKBOARD					Sample #:		
215 CAD #:	A2A	Mudded Pipe Joints on Millboard Insulation 1960 Addition	1960 ADDITION SECOND FLOOR RESTROOM PIPE CHASE	15 Joints	0 Joints	N	ASSUMED	5	
Comments:							Sample #:		
216 CAD #:	B2B	Millboard Pipe Insulation 1960 Addition	1960 ADDITION SECOND FLOOR RESTROOM PIPE CHASE	45 Lin Ft	0 Lin Ft	N	ASSUMED	5	
Comments:							Sample #:		

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Asbestos Category	Response Action
217 CAD #:	K2D	12" x 12" Vinyl Floor Tile & Mastic Gray Mottle (1960)	1960 ADDITION FIRST FLOOR HALLWAY	500 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
218 CAD #:	U0A	Light Pad Insulation Round	ROOM 101 RESTROOM	2 Sq Ft	0 Sq Ft	N	55 CH	5	
Comments:						Sample #:			
219 CAD #:	B3B	Pre-Formed Pipe Insulation 1960 Addition	ROOM 102	3 Lin Ft	0 Lin Ft	N	ASSUMED	5	
Comments:						Sample #:			
220 CAD #:	U0A	Light Pad Insulation Round	ROOM 103 RESTROOM	2 Sq Ft	0 Sq Ft	N	55 CH	5	
Comments:						Sample #:			
221 CAD #:	K1C	Sheet Vinyl Flooring & Adhesive Gray Mottle	ROOM 103 RESTROOM	20 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
222 CAD #:	X0C	Miscellaneous Material Black Chalkboard Adhesive	ROOM 103	15 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
223 CAD #:	X0B	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 103	15 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:						Sample #:			
224 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 103	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
225 CAD #:	Q0B	Carpet Adhesive Blue Berber Carpet Adhesive	ROOM 103	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
226 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 103	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
227 CAD #:	K2D	12" x 12" Vinyl Floor Tile & Mastic Gray Mottle (1960)	ROOM 106 RESTROOM	20 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
228 CAD #:	U0A	Light Pad Insulation Round	ROOM 106 RESTROOM	2 Sq Ft	0 Sq Ft	Y	55 CH	5	
Comments:						Sample #:			
229 CAD #:	X0C	Miscellaneous Material Black Chalkboard Adhesive	ROOM 106	15 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
230 CAD #:	X0B	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 106	15 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:						Sample #:			
231 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 106	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
232 CAD #:	Q0B	Carpet Adhesive Blue Berber Carpet Adhesive	ROOM 106	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
233 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 106	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
234 CAD #:	U0A	Light Pad Insulation Round	ROOM 105 RESTROOM	2 Sq Ft	0 Sq Ft	N	55 CH	5	
Comments:						Sample #:			
235 CAD #:	K1C	Sheet Vinyl Flooring & Adhesive Gray Mottle	ROOM 105 RESTROOM	20 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
236 CAD #:	X0C	Miscellaneous Material Black Chalkboard Adhesive	ROOM 105	15 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
237 CAD #:	X0B	Miscellaneous Material Dark Brown Tackboard Adhesive	ROOM 105	15 Sq Ft	0 Sq Ft	N	3 CH	5	
Comments:						Sample #:			
238 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	ROOM 105	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
239 CAD #:	Q0B	Carpet Adhesive Blue Berber Carpet Adhesive	ROOM 105	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
240 CAD #:	I3A	2' x 4' Ceiling Tile Pockmarks and Pinholes	ROOM 105	1000 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
241 CAD #:	X0L	Miscellaneous Material Ceiling Tile Vapor Barrier	FIRST FLOOR CORRIDOR FROM ROOM 103 TO ROOM 106	600 Sq Ft			NONE DETECTED		
Comments:						Sample #:	050719JL-81		
242 CAD #:	I2C	2' x 2' Acoustical Ceiling Tile Chicken Scratch	CORRIDOR / NORTH RAMP TO NEW GYMNASIUM	600 Sq Ft			NONE DETECTED		
Comments:						Sample #:	050819JL-82		
243 CAD #:	Q0B	Carpet Adhesive Blue Berber Carpet Adhesive	CORRIDOR / NORTH RAMP TO NEW GYMNASIUM	600 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
244 CAD #:	R0A	Baseboard/Mopboard Adhesive Gray	CORRIDOR / NORTH RAMP TO NEW GYMNASIUM	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
245 CAD #:	I2C	2' x 2' Acoustical Ceiling Tile Chicken Scratch	NORTH ELECTRICAL ROOM	300 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
246 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	NORTH ELECTRICAL ROOM	9 Joints			NONE DETECTED		
Comments:						Sample #:			
247 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	BOY'S LOCKER ROOM	35 Joints			NONE DETECTED		
Comments:						Sample #:			
248 CAD #:	I3D	2' x 4' Ceiling Tile Patterned Holes	BOY'S LOCKER ROOM	900 Sq Ft			NONE DETECTED		
Comments:						Sample #:	050819JL-85		

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
249 CAD #	X1B	Miscellaneous Material 4" X 4" White Ceramic Wall Tile System (1977)	BOY'S LOCKER ROOM	244 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
250 CAD #	X0M	Miscellaneous Material White Caulking around Ceramic Perimeter	BOY'S LOCKER ROOM	5 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
251 CAD #	J1A	Cementitious Panels 1977 Addition Transite	BOY'S LOCKER ROOM	15 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
252 CAD #	X00	Miscellaneous Material Metal Frame Corkboard Adhesive (1977)	BOY'S LOCKER ROOM	5 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
253 CAD #	I2C	2' x 2' Acoustical Ceiling Tile Chicken Scratch	BOY'S LOCKER ROOM OFFICE	168 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
254 CAD #	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	BOY'S LOCKER ROOM OFFICE	6 Joints			NONE DETECTED		
Comments:						Sample #:			
255 CAD #	X0N	Miscellaneous Material Wood Frame Corkboard Adhesive (1977)	BOY'S LOCKER ROOM OFFICE	5 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
256 CAD #	X1B	Miscellaneous Material 4" X 4" White Ceramic Wall Tile System (1977)	BOY'S LOCKER ROOM OFFICE RESTROOM	200 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
257 CAD #	X0M	Miscellaneous Material White Caulking around Ceramic Perimeter	BOY'S LOCKER ROOM OFFICE RESTROOM	4 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
258 CAD #	X1C	Miscellaneous Material 1" X 1" Brown Ceramic Floor Tile System	BOY'S LOCKER ROOM OFFICE RESTROOM	25 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
259 CAD #	I3D	2' x 4' Ceiling Tile Patterned Holes	OLD WRESTLING ROOM	900 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
260 CAD #	X0N	Miscellaneous Material Wood Frame Corkboard Adhesive (1977)	OLD WRESTLING ROOM	5 Sq Ft		N	ASSUMED	5	
Comments:						Sample #:			
261 CAD #	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	OLD WRESTLING ROOM	6 Joints			NONE DETECTED		
Comments:						Sample #:			
262 CAD #	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	GIRL'S LOCKER ROOM	35 Joints			NONE DETECTED		
Comments:						Sample #:			

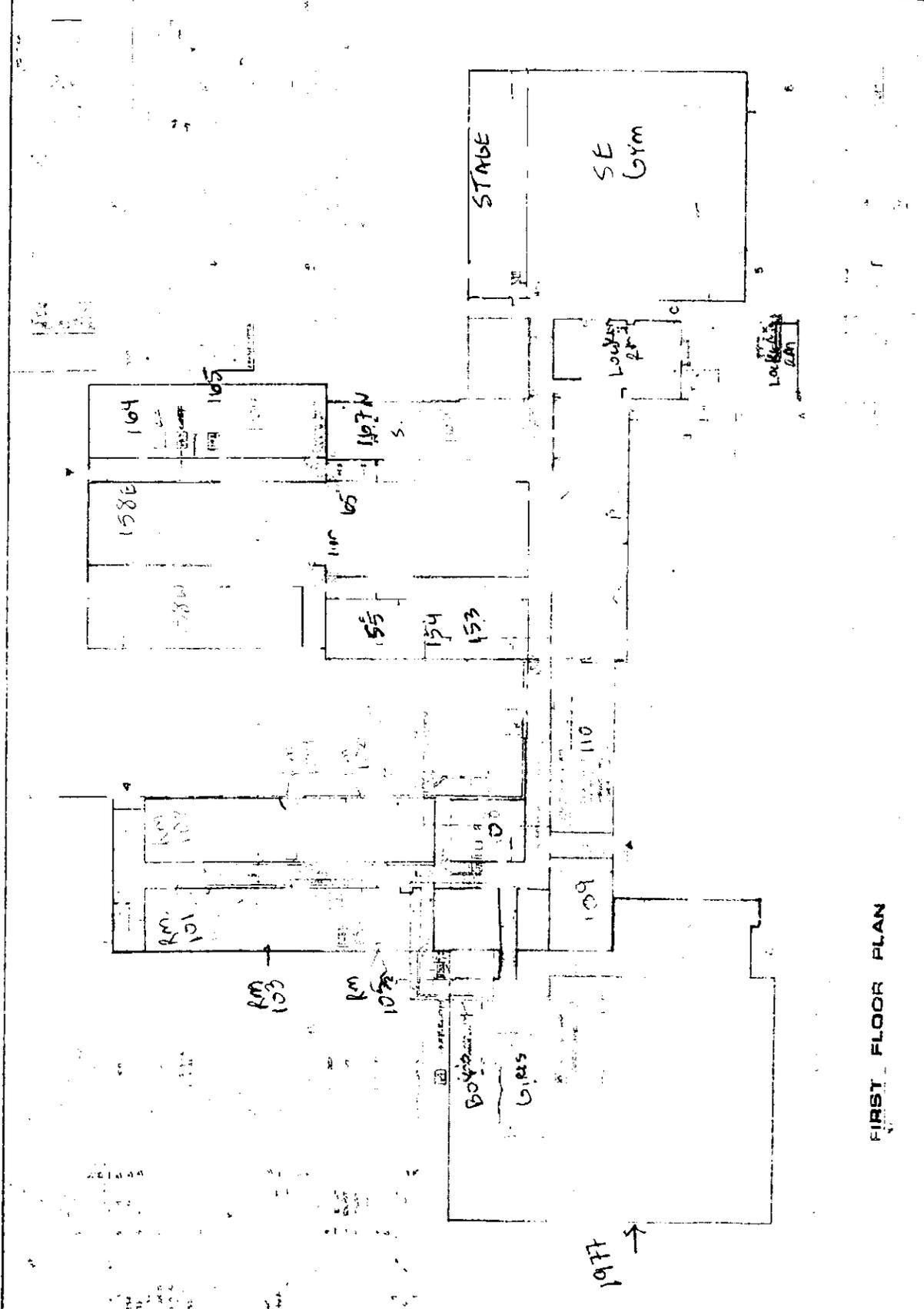
IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
263 CAD #:	I3D	2' x 4' Ceiling Tile Patterned Holes	GIRL'S LOCKER ROOM	900 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
264 CAD #:	X1B	Miscellaneous Material 4" X 4" White Ceramic Wall Tile System (1977)	GIRL'S LOCKER ROOM	244 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
265 CAD #:	X0M	Miscellaneous Material White Caulking around Ceramic Perimeter	GIRL'S LOCKER ROOM	5 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
266 CAD #:	X00	Miscellaneous Material Metal Frame Corkboard Adhesive (1977)	GIRL'S LOCKER ROOM	5 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
267 CAD #:	X1B	Miscellaneous Material 4" X 4" White Ceramic Wall Tile System (1977)	GIRL'S LOCKER ROOM OFFICE RESTROOM	150 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
268 CAD #:	X0M	Miscellaneous Material White Caulking around Ceramic Perimeter	GIRL'S LOCKER ROOM OFFICE RESTROOM	5 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
269 CAD #:	X1C	Miscellaneous Material 1" X 1" Brown Ceramic Floor Tile System	GIRL'S LOCKER ROOM OFFICE RESTROOM	25 Sq Ft	0 Sq Ft	N	ASSUMED	5	
Comments:						Sample #:			
270 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	GIRL'S LOCKER ROOM OFFICE	6 Joints			NONE DETECTED		
Comments:						Sample #:			
271 CAD #:	I3D	2' x 4' Ceiling Tile Patterned Holes	1977 GYMNASIUM	900 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
272 CAD #:	R0F	Baseboard/Mopboard Adhesive Brown Baseboard (1977)	1977 GYMNASIUM	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
273 CAD #:	I2C	2' x 2' Acoustical Ceiling Tile Chicken Scratch	MAIN LOBBY	1500 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
274 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	MAIN LOBBY	15 Joints			NONE DETECTED		
Comments:						Sample #:			
275 CAD #:	K2C	12" x 12" Vinyl Floor Tile & Mastic Tan with Brown Streaks	MAIN LOBBY CONCESSIONS	144 Sq Ft	0 Sq Ft	N	2 CH (TILE), 3 CH (BLACK MASTIC)	5	
Comments:						Sample #:			
276 CAD #:	I2D	2' x 2' Acoustical Ceiling Tile Vinyl Coated Sheetrock	MAIN LOBBY CONCESSIONS	144 Sq Ft			NSM		
Comments:						Sample #:			
277 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	MAIN LOBBY CONCESSIONS PIPE CHASE	6 Joints			NONE DETECTED		
Comments:						Sample #:			

IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
278 CAD #:	X1B	Miscellaneous Material 4" X 4" White Ceramic Wall Tile System (1977)	MAIN LOBBY RESTROOMS	1200 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
279 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	MAIN LOBBY RESTROOMS	10 Joints			NONE DETECTED		
Comments:						Sample #:			
280 CAD #:	I2C	2' x 2' Acoustical Ceiling Tile Chicken Scratch	MAIN ENTRANCE JANITOR'S CLOSET	50 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
281 CAD #:	A4B	Mudded Pipe Joints on Fiberglass Insulation 1977 Addition	MAIN ENTRANCE JANITOR'S CLOSET	7 Joints			NONE DETECTED		
Comments:						Sample #:			
282 CAD #:	K2C	12" x 12" Vinyl Floor Tile & Mastic Tan with Brown Streaks	MAIN ENTRANCE TELEPHONE ROOM	30 Sq Ft	0 Sq Ft	Y	2 CH (TILE), 3 CH (BLACK MASTIC)	5	
Comments:						Sample #:			
283 CAD #:	Z1A	Miscellaneous Material Gray Flashing	SE UPPER GYM ROOF WALL	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
284 CAD #:	Z1B	Miscellaneous Material Gray Edge Plastic Compound	SE UPPER GYM ROOF CAP	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
285 CAD #:	Z1C	Miscellaneous Material Black Sealant on Cap Edge	SE RUBBER ROOF	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
286 CAD #:	X0Q	Miscellaneous Material Gray Caulk on Windows	SE GYM	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
287 CAD #:	X0R	Miscellaneous Material Gray Expansion Joint Caulking	SE WALL EXPANSION JOINT	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
288 CAD #:	Z1D	Miscellaneous Material Gray Plastic Cement	NE SMALL SLOPED ROOF	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
289 CAD #:	X0S	Miscellaneous Material Gray Exterior Window Caulking	NW WING EXTERIOR WINDOW CAULKING	100 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
290 CAD #:	X0T	Miscellaneous Material Gray Exterior Sill Caulking	NW WING EXTERIOR SILL CAULKING	100 Sq Ft	0 Sq Ft	N	5 CH	5	
Comments:						Sample #:			
291 CAD #:	X0U	Miscellaneous Material White/Gray Chimney Caulk	NW CHIMNEY	25 Sq Ft	0 Sq Ft	N	2 CH	5	
Comments:						Sample #:			
292 CAD #:	X0V	Miscellaneous Material Gray Caulking	WEST GYM WALL	25 Sq Ft			NONE DETECTED		
Comments:						Sample #:			
293 CAD #:	Z1E	Miscellaneous Material Membrane	NW LOWER BUILT UP ROOF	2500 Sq Ft	0 Sq Ft	N	5 CH	5	
Comments:						Sample #:			
						Sample #:			

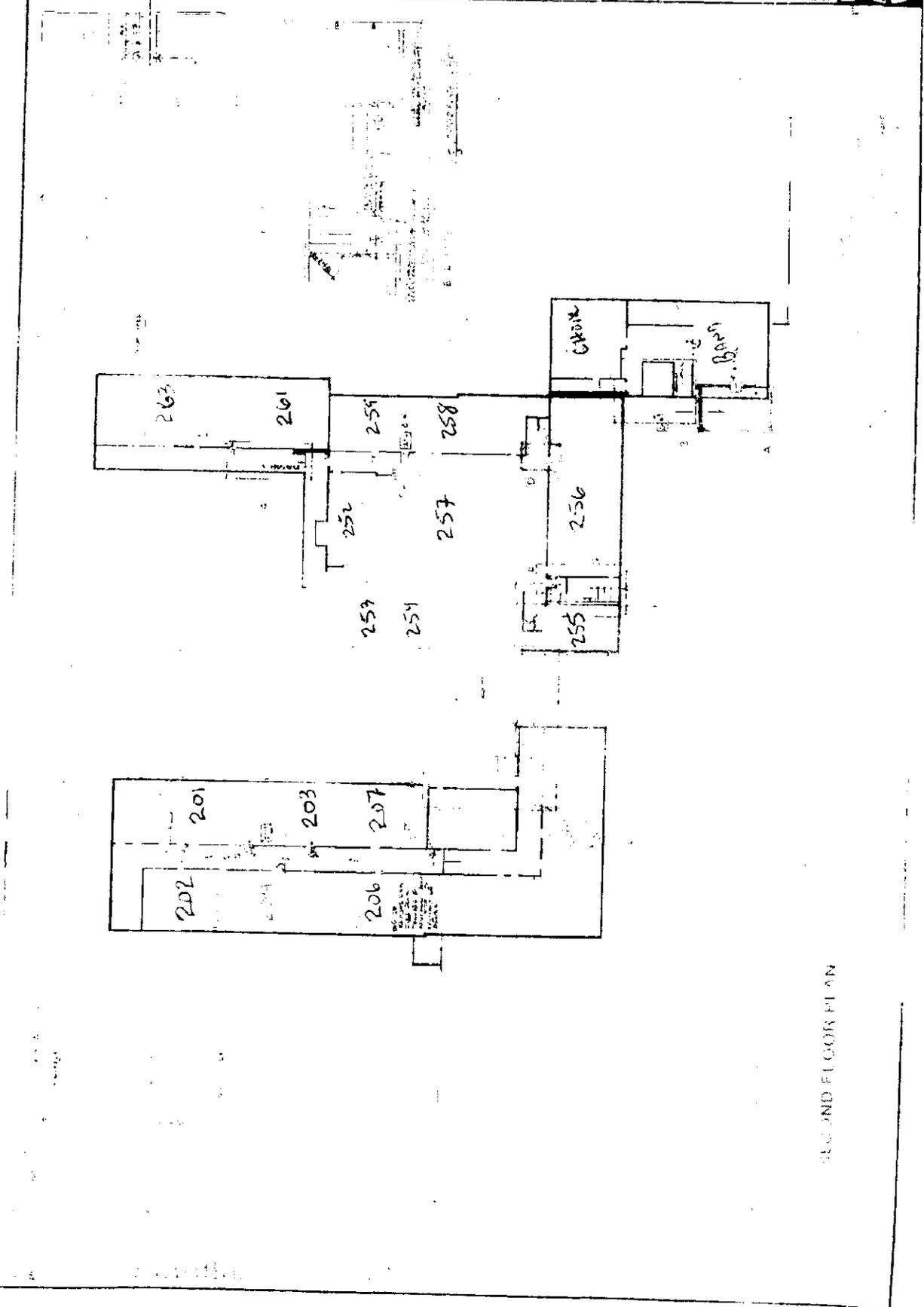
IEA Event No.	Material Type	Material Id/Desc	Location	Estimated Amount Total	Estimated Damage	Friability	% of Asbestos	EPA Assess Category	Response Action
294 CAD #:	Z1F	Miscellaneous Material Black Vapor Barrier	NW LOWER BUILT UP ROOF	2500 Sq Ft			NONE DETECTED		
Comments						Sample #:	050719JL-122		
295 CAD #:	Z1G	Miscellaneous Material Black Silver Control Joint Base Flashing	NW LOWER BUILT UP ROOF	250 Sq Ft			5 CH		
Comments						Sample #:	050719JL-123		

SECTION II

Asbestos Sample Locations Drawing



FIRST FLOOR PLAN



SECOND FLOOR PLAN

SECTION III

Asbestos Laboratory Report



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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-01 351903246-0001	SE Gym Base Layer on Concrete	Black Fibrous Homogeneous	65% Cellulose	35.0% Non-fibrous (Other)	None Detected
050719-JL-02 351903246-0002	SE Gym Vapor Barrier	Black Fibrous Homogeneous	65% Cellulose	35.0% Non-fibrous (Other)	None Detected
050719-JL-03 351903246-0003	SE Gym NE Mech Rm Green HVAC Flex Duct	Brown/Green Fibrous Homogeneous	65% Cellulose	35.0% Non-fibrous (Other)	None Detected
050719-JL-04-Cera mic Tile 351903246-0004	SE Gym Women's R.R. 4" x 4" White Ceramic/ Tan Adhesive	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-04-Adhe sive 351903246-0004A	SE Gym Women's R.R. 4" x 4" White Ceramic/ Tan Adhesive	Tan Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
050719-JL-05 351903246-0005	SE Gym Women's R.R. 2' x 4' Ceiling Tile. I3A	Gray/White Fibrous Homogeneous	30% Cellulose 40% MinWool	15% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-06 351903246-0006	SE Gym Women's RR Int gray Window Caulking	Gray Fibrous Homogeneous	15% Cellulose	85.0% Non-fibrous (Other)	None Detected
050719-JL-07-Shee trock 351903246-0007	SE Gym Lobby Sheetrock/ JT Compound	Brown/Gray Fibrous Homogeneous	20% Cellulose 5% Glass	30% Gypsum 45.0% Non-fibrous (Other)	None Detected
050719-JL-07-Joint Compound 351903246-0007A	SE Gym Lobby Sheetrock/ JT Compound	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-08-Mop Board 351903246-0008	SE Gym Lobby Gray Mopboard/ Cream Adhesive	Gray Non-Fibrous Homogeneous		40% Ca Carbonate 60.0% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-08-Adhesive 351903246-0008A	SE Gym Lobby Gray Mopboard/ Cream Adhesive	Beige Non-Fibrous Homogeneous	<1% Cellulose	100.0% Non-fibrous (Other)	None Detected
050719-JL-09-Floor Tile 351903246-0009	SE Gym Ticket Booth 12" x 12" Gray Fl. Tile	Gray Non-Fibrous Homogeneous		40% Ca Carbonate 60.0% Non-fibrous (Other)	None Detected
050719-JL-09-Adhesive 351903246-0009A	SE Gym Ticket Booth 12" x 12" Gray Fl. Tile	Yellow Non-Fibrous Homogeneous	<1% Cellulose	100.0% Non-fibrous (Other)	None Detected
050719-JL-10 351903246-0010	SE Gym Lobby Carpet Glue yellow/ Gold	Yellow Fibrous Homogeneous	2% Synthetic	98.0% Non-fibrous (Other)	None Detected
050719-JL-11-Skim Coat 351903246-0011	SE Gym SW Entry, Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-11-Base Coat 351903246-0011A	SE Gym SW Entry, Plaster	Tan Non-Fibrous Homogeneous	<1% Cellulose	15% Quartz 45% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-12-Skim Coat 351903246-0012	SE Gym Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-12-Base Coat 351903246-0012A	SE Gym Plaster	Tan Non-Fibrous Homogeneous	<1% Cellulose	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-13-Skim Coat 351903246-0013	SE Gym Hallway Plaster	White Non-Fibrous Homogeneous		10% Quartz 60% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
050719-JL-13-Base Coat 351903246-0013A	SE Gym Hallway Plaster	Beige/Gold Non-Fibrous Homogeneous	<1% Cellulose	40% Ca Carbonate 2% Micaceous Flakes 58.0% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-14-Insulation 351903246-0014	SE Gym Girls Locker Rm Pipe Insul., B3A	White Fibrous Homogeneous		50.0% Non-fibrous (Other)	20% Amosite 30% Chrysotile
050719-JL-14-Wrap 351903246-0014A	SE Gym Girls Locker Rm Pipe Insul., B3A	Brown/Green Fibrous Homogeneous	85% Cellulose	15.0% Non-fibrous (Other)	<1% Chrysotile
050719-JL-15-Wrap 1 351903246-0015	SE Gym Girls Locker Rm Shower Millboard, B2A	Brown Fibrous Homogeneous	85% Cellulose	15.0% Non-fibrous (Other)	None Detected
050719-JL-15-Wrap 2 351903246-0015A	SE Gym Girls Locker Rm Shower Millboard, B2A	Black Fibrous Homogeneous	15% Cellulose 5% Synthetic	30.0% Non-fibrous (Other)	50% Chrysotile
050719-JL-15-Wrap 3 351903246-0015B	SE Gym Girls Locker Rm Shower Millboard, B2A	Brown/Tan Fibrous Homogeneous	85% Cellulose	15.0% Non-fibrous (Other)	None Detected
050719-JL-15-Wrap 4 351903246-0015C	SE Gym Girls Locker Rm Shower Millboard, B2A	Brown Fibrous Homogeneous	10% Cellulose	30.0% Non-fibrous (Other)	60% Chrysotile
050719-JL-16 351903246-0016	SE Elev. Rm Fire Door Fill	White Fibrous Homogeneous	8% Glass	30% Perlite 62.0% Non-fibrous (Other)	None Detected
050719-JL-17 351903246-0017	SE Gym HVAC Duct Insul. Foil Cover	Brown/Silver Fibrous Homogeneous	10% Cellulose	35.0% Non-fibrous (Other)	55% Chrysotile
050719-JL-18 351903246-0018	SE Gym NW Cust Rm Duct Insul. Foil Cover				Positive Stop (Not Analyzed)
050719-JL-19 351903246-0019	SE Gym Area HVAC Duct Insul. Foil Cover				Positive Stop (Not Analyzed)

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-20 351903246-0020	SE Gym Area Upper HVAC Duct Insul. Cover				Positive Stop (Not Analyzed)
050719-JL-21-Mud 351903246-0021	SE Gym NW Cust. Rm Mud jt on F.G., A4A	Gray/White Fibrous Homogeneous	2% Cellulose 50% MinWool	48.0% Non-fibrous (Other)	None Detected
050719-JL-21-Wrap 351903246-0021A	SE Gym NW Cust. Rm Mud jt on F.G., A4A	Brown Fibrous Homogeneous	85% Cellulose	15.0% Non-fibrous (Other)	None Detected
050719-JL-22 351903246-0022	SE Choir Rm DK Brown Tack bd Adhesive	Brown Fibrous Homogeneous	2% Wollastonite	95.0% Non-fibrous (Other)	3% Chrysotile
050719-JL-23 351903246-0023	SE Choir Rm Top Finish bd on Heater Units	Tan Fibrous Homogeneous	65% Cellulose	35.0% Non-fibrous (Other)	None Detected
This is a composite result of both top finish and backing layer					
050719-JL-24 351903246-0024	SE Choir Rm Black Adhesive on Chalk bd.	Black Fibrous Homogeneous	5% Cellulose 3% Wollastonite	92.0% Non-fibrous (Other)	None Detected
050719-JL-25-Floor Tile 351903246-0025	SE Band Practice Rm 9" x 9" Green Fl. Tile/ black mastic	Green Fibrous Homogeneous		40% Ca Carbonate 57.0% Non-fibrous (Other)	3% Chrysotile
050719-JL-25-Masti c 351903246-0025A	SE Band Practice Rm 9" x 9" Green Fl. Tile/ black mastic	Black Fibrous Homogeneous	2% Cellulose	98.0% Non-fibrous (Other)	None Detected
050719-JL-26 351903246-0026	SE Band 1' x 1' C.T. Brown Adhesive Puck	Brown Fibrous Homogeneous	2% Cellulose 2% Wollastonite	96.0% Non-fibrous (Other)	None Detected
050719-JL-27-Floor Tile 351903246-0027	SE West Hall to Elevator 12" x 12" Cream Fl. Tile	White Non-Fibrous Homogeneous		40% Ca Carbonate 60.0% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-27-Mastic c 351903246-0027A	SE West Hall to Elevator 12" x 12" Cream Fl. Tile	White Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
050719-JL-28 351903246-0028	Rm #257 1' x 1' C.T. Brown Adhesive Puck	Brown Fibrous Homogeneous	2% Cellulose 2% Wollastonite	94.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-29 351903246-0029	Spline 16" x 16" C.T. Mixed Hold Pattern	Brown/White Fibrous Homogeneous	85% Cellulose	15.0% Non-fibrous (Other)	None Detected
050719-JL-30 351903246-0030	2nd Fl. 2' x 4' C.T. Salmon Back, I4B	Gray/White Fibrous Homogeneous	30% Cellulose 40% MinWool	15% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-31 351903246-0031	Staff Lounge Rm Wood Fl. Vapor Barrier	Brown/Black Fibrous Homogeneous	70% Cellulose	30.0% Non-fibrous (Other)	None Detected
050719-JL-32-Mop Board 351903246-0032	Rm #254 Brown Mopboard/ Tan Adhesive	Brown Non-Fibrous Homogeneous		30% Ca Carbonate 70.0% Non-fibrous (Other)	None Detected
050719-JL-32-Adhesive 351903246-0032A	Rm #254 Brown Mopboard/ Tan Adhesive	Brown/Tan Fibrous Homogeneous	2% Cellulose	5% Mica 93.0% Non-fibrous (Other)	None Detected
050719-JL-33-Floor Tile 351903246-0033	Rm #254 9" x 9" Tan Fl. Tile/ Black Mastic	Tan Fibrous Homogeneous		40% Ca Carbonate 55.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-33-Mastic c 351903246-0033A	Rm #254 9" x 9" Tan Fl. Tile/ Black Mastic	Black Fibrous Homogeneous	3% Cellulose	5% Mica 92.0% Non-fibrous (Other)	None Detected
050719-JL-34-Floor Tile 351903246-0034	Elem. Office 9" x 9" Brown Fl Tile/ Black Mastic	Brown Fibrous Homogeneous		40% Ca Carbonate 52.0% Non-fibrous (Other)	8% Chrysotile

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			% Fibrous	% Non-Fibrous	% Type
050719-JL-34-Mastic c 351903246-0034A	Elem. Office 9" x 9" Brown Fl Tile/ Black Mastic	Black Fibrous Homogeneous	2% Cellulose	5% Mica 91.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-35 351903246-0035	Elem. Office 9" x 9" Gray Fl. Tile	Gray Fibrous Homogeneous		40% Ca Carbonate 52.0% Non-fibrous (Other)	8% Chrysotile
050719-JL-36 351903246-0036	Rm #155 Int. Wall black dampproofing	Brown/Black/Orange Non-Fibrous Homogeneous		20% Quartz 80.0% Non-fibrous (Other)	None Detected
050719-JL-37-Linoleum 351903246-0037	1st Fl. Staff Lounge Blue/Gray Linoleum	Gray/Blue Non-Fibrous Homogeneous		40% Ca Carbonate 60.0% Non-fibrous (Other)	None Detected
050719-JL-37-Backing 351903246-0037A	1st Fl. Staff Lounge Blue/Gray Linoleum	Gray/Tan Fibrous Homogeneous	30% Cellulose 10% Glass	60.0% Non-fibrous (Other)	None Detected
050719-JL-38-Floor Tile 351903246-0038	Kitchen 12" x 12" Cream F. Tile/ Black Mastic	Beige Non-Fibrous Homogeneous		40% Ca Carbonate 60.0% Non-fibrous (Other)	None Detected
050719-JL-38-Mastic c 351903246-0038A	Kitchen 12" x 12" Cream F. Tile/ Black Mastic	Black Fibrous Homogeneous	2% Cellulose	93.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-39-Floor Tile 351903246-0039	Cafeteria 9" x 9" Cream Fl. Tile	Beige Fibrous Homogeneous		40% Ca Carbonate 55.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-39-Mastic c 351903246-0039A	Cafeteria 9" x 9" Cream Fl. Tile	Black Fibrous Homogeneous	2% Cellulose	93.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-40-Floor Tile 351903246-0040	N. 1950's Add N. Hall 9" x 9" DK Brown Fl. Tile/ Black Mastic	Brown Fibrous Homogeneous		40% Ca Carbonate 55.0% Non-fibrous (Other)	5% Chrysotile

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			% Fibrous	% Non-Fibrous	% Type
050719-JL-40-Mastic c 351903246-0040A	N. 1950's Add N. Hall 9" x 9" DK Brown Fl. Tile/ Black Mastic	Black Fibrous Homogeneous	2% Cellulose	10% Mica 88.0% Non-fibrous (Other)	None Detected
050719-JL-41 351903246-0041	1950's Add. N. Hall 1' x 1' C.T. DK Brown Puck	Brown Fibrous Homogeneous		98.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-42-Mop Board 351903246-0042	Rm 164 DK Brown Black mopbd	Brown/Black Non-Fibrous Homogeneous		30% Ca Carbonate 70.0% Non-fibrous (Other)	None Detected
050719-JL-42-Adhesive 351903246-0042A	Rm 164 DK Brown Black mopbd	Brown/Tan Fibrous Homogeneous	2% Cellulose 2% Synthetic	5% Mica 91.0% Non-fibrous (Other)	None Detected
050719-JL-43 351903246-0043	Rm #164 Accoustical spray	White Fibrous Homogeneous	30% Cellulose	30% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-44 351903246-0044	Rm #164 Accoustical spray	White Fibrous Homogeneous	30% Cellulose	30% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-45 351903246-0045	Rm #165 Accoustical spray	White Fibrous Homogeneous	30% Cellulose	45% Perlite 25.0% Non-fibrous (Other)	None Detected
050719-JL-46 351903246-0046	Rm #165 Tackboard Adhesive Tan	Brown Fibrous Homogeneous	3% Cellulose	97.0% Non-fibrous (Other)	None Detected
050719-JL-47 351903246-0047	Rm #168 Ext Wall Insul. Dk Brown Adhesive	Brown Fibrous Homogeneous	2% Cellulose	95.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-48 351903246-0048	Rm #168 Black window sill	Gray Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-49 351903246-0049	N. Exit Int. Gray Caulking	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
050719-JL-50-Floor Tile 351903246-0050	Rm 263 9" x 9" LT. Green Fl. Tile/ Black Mastic	Green Fibrous Homogeneous		40% Ca Carbonate 58.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-50-Masti c 351903246-0050A	Rm 263 9" x 9" LT. Green Fl. Tile/ Black Mastic	Black Fibrous Homogeneous	3% Cellulose	97.0% Non-fibrous (Other)	None Detected
050719-JL-51 351903246-0051	Rm #162 Millboard pipe Insul.	Gray/Blue Fibrous Homogeneous	40% Cellulose 40% Synthetic	10.0% Non-fibrous (Other)	10% Chrysotile
050719-JL-52 351903246-0052	Rm #162 Millboard Insul.	Gray/Blue Fibrous Homogeneous	40% Cellulose 40% Synthetic	10.0% Non-fibrous (Other)	10% Chrysotile
050719-JL-53 351903246-0053	Rm #261 Lab Table Top	Gray Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-54 351903246-0054	S. Mid Staff Work Rm Linoleum	Tan Fibrous Homogeneous	20% Synthetic 10% Glass	70.0% Non-fibrous (Other)	None Detected
050719-JL-55 351903246-0055	BSMT Maintenance Wood Fl. Vapor Barrier	Black Fibrous Homogeneous	75% Cellulose	25.0% Non-fibrous (Other)	None Detected
050719-JL-56 351903246-0056	E. Boiler Unit Top Insulation	Tan Fibrous Homogeneous	10% Cellulose 5% Glass	85.0% Non-fibrous (Other)	None Detected
050719-JL-57 351903246-0057	E. Boiler Unit Top Insulation	Tan Fibrous Homogeneous	10% Cellulose 5% Glass	85.0% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-58 351903246-0058	E. Boiler Unit Top Insulation	Tan Fibrous Homogeneous	15% Cellulose 5% Glass	80.0% Non-fibrous (Other)	None Detected
050719-JL-59 351903246-0059	Boiler Rm. N. Water Tank Insul.	Brown Fibrous Homogeneous	10% Cellulose	30% Micaceous Flakes 35.0% Non-fibrous (Other)	25% Chrysotile
050719-JL-60 351903246-0060	Boiler Rm. N. Water Tank Insul.				Positive Stop (Not Analyzed)
050719-JL-61 351903246-0061	Boiler Rm. N. Water Tank Insul.				Positive Stop (Not Analyzed)
050719-JL-62 351903246-0062	Rm #110 DK Brown Mopboard Adhesive	Brown Non-Fibrous Homogeneous	<1% Cellulose	100.0% Non-fibrous (Other)	None Detected
050719-JL-63 351903246-0063	Rm #110 2' x 4' Ceiling Tile	Gray/White Fibrous Homogeneous	30% Cellulose 40% MinWool	15% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-64 351903246-0064	Entry Hall by Rm #109 Tan Mastic on Black bd.	Tan Fibrous Homogeneous	3% Cellulose	97.0% Non-fibrous (Other)	None Detected
050719-JL-66 351903246-0065	Elem. Hall to SW Gym 2' x 2' Ceiling Tile	Gray/White Fibrous Homogeneous	30% Cellulose 40% MinWool	15% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-67-Floor Tile 351903246-0066	Rm #156 9' x 9' gray Fl. Tile/ Black Mastic	Brown Fibrous Homogeneous		40% Ca Carbonate 57.0% Non-fibrous (Other)	3% Chrysotile
050719-JL-67-Masti c 1 351903246-0066A	Rm #156 9' x 9' gray Fl. Tile/ Black Mastic	Black Fibrous Homogeneous		98.0% Non-fibrous (Other)	2% Chrysotile

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-67-Masti c 2 351903246-0056B	Rm #156 9' x 9' gray Fl. Tile/ Black Mastic	Tan Fibrous Homogeneous	2% Cellulose	98.0% Non-fibrous (Other)	None Detected
050719-JL-68-Floor Tile 351903246-0067	Rm #156 office 12" x 12" Tan w/ Brown Fl. Tile/ Black Mastic	White Fibrous Homogeneous		40% Ca Carbonate 58.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-68-Masti c 351903246-0067A	Rm #156 office 12" x 12" Tan w/ Brown Fl. Tile/ Black Mastic	Black Fibrous Homogeneous	2% Cellulose	98.0% Non-fibrous (Other)	None Detected
050719-JL-69 351903246-0068	Office, Rm 156 2' x 4' Ceiling Tile	Gray/White Fibrous Homogeneous	30% Cellulose 40% MinWool	15% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-70 351903246-0069	Rm #206 1' x 1' C.T. Brown Adhesive	Brown Fibrous Homogeneous	<1% Cellulose	98.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-71-Floor Tile 351903246-0070	Rm #206 9" x 9" Dk Brown Floor Tile/ Black Mastic	Brown Fibrous Homogeneous		40% Ca Carbonate 55.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-71-Masti c 351903246-0070A	Rm #206 9" x 9" Dk Brown Floor Tile/ Black Mastic	Black Fibrous Homogeneous	2% Cellulose	10% Mica 88.0% Non-fibrous (Other)	None Detected
050719-JL-72-Floor Tile 351903246-0071	Rm #203 9" x 9" Tan Floor Tile	Tan Fibrous Homogeneous		40% Ca Carbonate 55.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-72-Masti c 351903246-0071A	Rm #203 9" x 9" Tan Floor Tile	Black Fibrous Homogeneous	2% Cellulose	10% Mica 88.0% Non-fibrous (Other)	None Detected
050719-JL-73-Floor Tile 351903246-0072	Rm #204 9" x 9" Green Floor Tile	Green Fibrous Homogeneous		40% Ca Carbonate 55.0% Non-fibrous (Other)	5% Chrysotile

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-73-Mastic c 351903246-0072A	Rm #204 9" x 9" Green Floor Tile	Black Fibrous Homogeneous	2% Cellulose	10% Mica 88.0% Non-fibrous (Other)	None Detected
050719-JL-74 351903246-0073	Rm #207 Black Chalk board Adhesive	Gray Fibrous Homogeneous	30% MinWool	15.0% Non-fibrous (Other)	55% Chrysotile
050719-JL-75 351903246-0074	Rm #207 Mud pipe jt	Black Fibrous Homogeneous		5% Quartz 5% Mica 82.0% Non-fibrous (Other)	8% Chrysotile
050719-JL-76 351903246-0075	Rm #204 Tack Bd Brown Mastic	Brown Non-Fibrous Homogeneous		5% Quartz 5% Mica 90.0% Non-fibrous (Other)	None Detected
050719-JL-77-Floor Tile 351903246-0076	Elem. 1st Fl. Hall 12"x12" LT Gray w/ Black	Gray/White/Blue Non-Fibrous Homogeneous		40% Ca Carbonate 60.0% Non-fibrous (Other)	None Detected
050719-JL-77-Mastic c 351903246-0076A	Elem. 1st Fl. Hall 12"x12" LT Gray w/ Black	Yellow Non-Fibrous Homogeneous	<1% Cellulose	100.0% Non-fibrous (Other)	None Detected
050719-JL-78 351903246-0077	Rm #102 Entry Sheetrock/Jt Compound	Brown/White Fibrous Homogeneous	15% Cellulose 5% Glass	20% Ca Carbonate 30% Gypsum 30.0% Non-fibrous (Other)	None Detected
Joint compound not present in sample.					
050719-JL-79 351903246-0078	Rm #103 Yellow Carpet Glue	Tan Fibrous Homogeneous	2% Cellulose 2% Synthetic	96.0% Non-fibrous (Other)	None Detected
050719-JL-80 351903246-0079	Rm 103 RR Gray Linoleum	Gray/Blue Fibrous Homogeneous	30% Cellulose 10% Synthetic	60.0% Non-fibrous (Other)	None Detected
050719-JL-81 351903246-0080	Elem. Hall Ceiling Vapor Barrier Above	Brown/Black Fibrous Homogeneous	60% Cellulose	40.0% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-82 351903246-0081	3E Gym Hall 2"x2" Ceiling Tile	Gray/White Fibrous Homogeneous	30% Cellulose 40% MinWool	15% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-83 351903246-0082	1977 Add. N. Mech. Rm Mud Pipe Jt.	Gray Fibrous Homogeneous	40% MinWool	60.0% Non-fibrous (Other)	None Detected
050719-JL-84 351903246-0083	77 Add. Boy's LR Mud Pipe Jt.	Gray Fibrous Homogeneous	40% MinWool	60.0% Non-fibrous (Other)	None Detected
050719-JL-85 351903246-0084	77 Boy's Lr 2'x4' Ceiling Tile	Gray/White Fibrous Homogeneous	30% Cellulose 40% MinWool	15% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-86 351903246-0085	77 Boy's Lr Coaches RR 4"x4" Compound Wall Tile	White Non-Fibrous Homogeneous		70% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
050719-JL-87 351903246-0086	77 Boy's Lr Coaches RR White Caulking	White Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
050719-JL-88 351903246-0087	77 Gym Wall Base Adhesive Brown	Brown Non-Fibrous Homogeneous	<1% Cellulose	100.0% Non-fibrous (Other)	None Detected
050719-JL-89-Floor Tile 351903246-0088	77 Concession Area 12"x12" Tan w/ Brown Streak/Black Mastic	Tan Fibrous Homogeneous		40% Ca Carbonate 58.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-89-Masti c 351903246-0088A	77 Concession Area 12"x12" Tan w/ Brown Streak/Black Mastic	Black Fibrous Homogeneous		97.0% Non-fibrous (Other)	3% Chrysotile
050719-JL-90-Cera mic Tile 351903246-0089	77 Men's Lobby RR 1" Ceramic Floor	Gray Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
050719-JL-90-Grout 351903246-0089A	77 Men's Lobby RR 1" Ceramic Floor	Gray Non-Fibrous Homogeneous		10% Quartz 40% Ca Carbonate 50.0% Non-fibrous (Other)	None Detected
050719-JL-91 351903246-0090	Rm #164 Acoustical Spray-On	White Fibrous Homogeneous	25% Synthetic	40% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-92 351903246-0091	Rm #165 Acoustical Spray-On	White Fibrous Homogeneous	30% Cellulose	40% Perite 30.0% Non-fibrous (Other)	None Detected
050719-JL-93-Skim Coat 351903246-0092	SE Gym Area S. Hall Plaster	White Non-Fibrous Homogeneous		70% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
050719-JL-93-Base Coat 351903246-0092A	SE Gym Area S. Hall Plaster	Gray Non-Fibrous Homogeneous		20% Quartz 40% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-94-Skim Coat 351903246-0093	SE Gym Area W. Hall Plaster	White Non-Fibrous Homogeneous		70% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
050719-JL-94-Base Coat 351903246-0093A	SE Gym Area W. Hall Plaster	Gray Non-Fibrous Homogeneous		20% Quartz 40% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-95-Skim Coat 351903246-0094	SE Gym Area Boy's Locker Rm Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-95-Base Coat 351903246-0094A	SE Gym Area Boy's Locker Rm Plaster	Gray Non-Fibrous Homogeneous	<1% Hair	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-96-Skim Coat 351903246-0095	SE Gym Area Girl's Locker Rm Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected

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			% Fibrous	% Non-Fibrous	% Type
050719-JL-96-Base Coat 351903246-0095A	SE Gym Area Girl's Locker Rm Plaster	Gray Non-Fibrous Homogeneous	<1% Hair	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-97 351903246-0096	Orig. Bldg Rm 167 Plaster	Gray Non-Fibrous Homogeneous		10% Quartz 45% Ca Carbonate 45.0% Non-fibrous (Other)	None Detected
050719-JL-98 351903246-0097	Orig. Bldg Rm 155 Plaster	Gray Non-Fibrous Homogeneous		10% Quartz 45% Ca Carbonate 45.0% Non-fibrous (Other)	None Detected
050719-JL-99-Skim Coat 351903246-0098	Orig. Bldg Elementary Office Plaster	White Non-Fibrous Homogeneous		70% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
050719-JL-99-Base Coat 351903246-0098A	Orig. Bldg Elementary Office Plaster	Gray Non-Fibrous Homogeneous		20% Quartz 40% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-100-Ski m Coat 351903246-0099	Orig. Bldg Rm 254 Plaster	White Non-Fibrous Homogeneous		70% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
050719-JL-100-Bas e Coat 351903246-0099A	Orig. Bldg Rm 254 Plaster	Gray Non-Fibrous Homogeneous		20% Quartz 40% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-101 351903246-0100	Orig. Bldg Rm 257 Plaster	Gray Non-Fibrous Homogeneous	<1% Cellulose	65% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-102-Ski m Coat 351903246-0101	Orig. Bldg Boiler Rm Wall	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-102-Bas e Coat 351903246-0101A	Orig. Bldg Boiler Rm Wall	Gray Non-Fibrous Homogeneous	<1% Cellulose <1% Hair	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected

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Initial report from: 05/16/2019 11:57:32



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EMSL Order: 351903246
Customer ID: IFEA50
Customer PO:
Project ID:

Attention: Jennifer Theis
Inst. For Environmental Assessment
9201 West Broadway
Suite 600
Brooklyn Park, MN 55445
Project: 201910454- Clarkfield School

Phone: (763) 315-7900
Fax: (763) 315-7920
Received Date: 05/13/2019 1:10 PM
Analysis Date: 05/15/2019 - 05/16/2019
Collected Date: 05/07/2019

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-103-Ski m Coat 351903246-0102	Orig. Bldg Bsmt Stairway Wall	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-103-Bas e Coat 351903246-0102A	Orig. Bldg Bsmt Stairway Wall	Gray Non-Fibrous Homogeneous	<1% Hair	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-104-Ski m Coat 351903246-0103	NW Wing Rm 102 Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-104-Bas e Coat 351903246-0103A	NW Wing Rm 102 Plaster	Gray Non-Fibrous Homogeneous		20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-105 351903246-0104	NW Wing Hall by Rm 105	Gray Non-Fibrous Homogeneous	<1% Hair	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
Skim Coat not present in sample.					
050719-JL-106-Ski m Coat 351903246-0105	NW Wing Rm 102 Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-106-Bas e Coat 351903246-0105A	NW Wing Rm 102 Plaster	Gray Non-Fibrous Homogeneous	<1% Cellulose	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-107-Ski m Coat 351903246-0106	NW Wing Rm 106 Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-107-Bas e Coat 351903246-0106A	NW Wing Rm 106 Plaster	Gray Non-Fibrous Homogeneous	<1% Cellulose	20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-108-Ski m Coat 351903246-0107	NW Wing Rm 202 Plaster	White Non-Fibrous Homogeneous		60% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-108-Bas e Coat 351903246-0107A	NW Wing Rm 202 Plaster	Gray Non-Fibrous Homogeneous		20% Quartz 45% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
050719-JL-109 351903246-0108	NW Wing Rm 205 Plaster	White Non-Fibrous Homogeneous		20% Quartz 40% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-110 351903246-0109	NW Wing Rm 207 Plaster	Gray Non-Fibrous Homogeneous		10% Quartz 50% Ca Carbonate 40.0% Non-fibrous (Other)	None Detected
050719-JL-111 351903246-0110	SE Upper Gym Rf Wall Flashing	Gray/Black Fibrous Homogeneous	3% Cellulose	20% Quartz 77.0% Non-fibrous (Other)	None Detected
050719-JL-112 351903246-0111	SE Upper Gym Rf Cap Edge Plastic Compound	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
050719-JL-113 351903246-0112	SE Rubber Rf Black Sealant on Cap Edge	Black Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
050719-JL-114 351903246-0113	SE Gym Caulk on Windows	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
050719-JL-115 351903246-0114	SE Wall Exp. Joint Caulking	Gray Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
050719-JL-116 351903246-0115	NE Small Sloped Rf Plastic Cement	Gray Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
050719-JL-117 351903246-0116	NW Wing Ext. Window Caulk Gray	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-118 351903246-0117	NW Ext. Sill Caulk Gray	Gray Fibrous Homogeneous		20% Ca Carbonate 75.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-119 351903246-0118	NW Chimney White Caulk	Gray Fibrous Homogeneous		25% Ca Carbonate 73.0% Non-fibrous (Other)	2% Chrysotile
050719-JL-120 351903246-0119	W Gym Wall Caulking Along Rubber/Metal	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
050719-JL-121 351903246-0120	NW Lower Rf Bur Membrane	Brown/Black Fibrous Homogeneous	25% Cellulose	70.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-122-Roo fing 1 351903246-0121	NW Lower Rf Bur Vapor Barrier	Black Fibrous Homogeneous	15% Cellulose	85.0% Non-fibrous (Other)	None Detected
050719-JL-122-Roo fing 2 351903246-0121A	NW Lower Rf Bur Vapor Barrier	Brown Fibrous Homogeneous	75% Cellulose	10% Perlite 15.0% Non-fibrous (Other)	None Detected
050719-JL-123-Roo fing 1 351903246-0122	NW Lower Rf Bur Control Jt. Base Flashing	Black/Silver Fibrous Homogeneous	2% Cellulose	98.0% Non-fibrous (Other)	<1% Chrysotile
050719-JL-123-Roo fing 2 351903246-0122A	NW Lower Rf Bur Control Jt. Base Flashing	Brown/Black Fibrous Homogeneous	10% Cellulose 30% Glass	60.0% Non-fibrous (Other)	None Detected
050719-JL-123-Roo fing 3 351903246-0122B	NW Lower Rf Bur Control Jt. Base Flashing	Black Fibrous Homogeneous		95.0% Non-fibrous (Other)	5% Chrysotile
050719-JL-124 351903246-0123	Kiln Brick	Gray Non-Fibrous Homogeneous		10% Quartz 45% Ca Carbonate 45.0% Non-fibrous (Other)	None Detected

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Analysis Date: 05/15/2019 - 05/16/2019
Collected Date: 05/07/2019

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
050719-JL-125	Kiln Brick	Gray		10% Quartz	None Detected
351903246-0124		Non-Fibrous Homogeneous		45% Ca Carbonate 45.0% Non-fibrous (Other)	

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Fax: (763) 315-7920
Received Date: 05/13/2019 1:10 PM
Analysis Date: 05/15/2019 - 05/16/2019
Collected Date: 05/07/2019

The samples in this report were submitted to EMSL for analysis by Asbestos Analysis of Bulk materials via EPA/600 (0513) Method using Polarized Light Microscopy. The reference number for these samples is the EMSL Order ID above. Please use this reference number when calling about these samples.

Report Comments:

Sample Receipt Date: 05/13/2019 Sample Receipt Time: 1:10 PM
Analysis Completed Date: 05/16/2019 Analysis Completed Time: 11:56 AM

Analyst(s):

Joshua Moorman PLM (69)

Kelly Gallisdorfer PLM (59)

Roxsee Stover PLM (38)

Samples Reviewed and approved by:

Rachel Travis, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Initial report from: 05/16/2019 11:57:32



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3246

CHAIN OF CUSTODY

Page 1 of

Client #:	Project # <u>201910454</u>	Building Name <u>Clarkfield School</u>	Shaded Areas are for Laboratory Use Only!
Client	<u>Yellow Medicine Co</u>	Project Name <u>School Demo</u>	
Address	<u>Strombo Falls mn</u>	Contact Person _____ Contact Person Phone _____	
		Other Information _____	

Verbal results to _____	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr 1d <u>2d</u> 3d 4d Specify	
Verbal results relayed to _____	Verbal results relayed by _____	Date _____	Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	<u>Bulk</u>	Dust	PCM	<u>PLM</u>	TEM	Other	MCE	.8 um	.45 um
050719-JL-01		SE Gym BASE Layer on concrete			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-02		SE Gym VAPOR BARRIER			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-03		SE Gym NE MECH RM GREEN HVAC FLEX DUCT			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-04		SE Gym WOMEN'S RR. 4"X4" white acoustic / foam adhesive			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-05		SE Gym WOMEN'S RR 2'X4' CEILING TILE	I3A		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-06		SE Gym WOMEN'S RR Int gray window caulking			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-07		SE Gym Lobby STREET ROCK / ST compound			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-08		SE Gym Lobby GRAY mapboard / cement adhesive			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-09		SE Gym Ticker Booth 12"X12" GRAY Ft. tile			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-10		SE Gym Lobby Carpet glue yellow/gold			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-11		SE Gym SW ENTRY PLASTER	STOP		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-12		SE Gym PLASTER	@		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-13		SE Gym Hallway PLASTER	POSITIVE		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-14		SE Gym Girls Locker RM PIPE INSUL.	B3A		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-15		SE Gym Girls Locker RM Shower Miltboard	B20		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____					FICC _____			Batch Number: _____			Samples Acceptable? <input type="radio"/> Yes <input type="radio"/> No			
Sampled by <u>IEA Inc</u>	Date <u>05/07</u>	Time <u>AM</u>	Delivered by <u>IEA, Inc</u>	Date <u>05/13</u>	Time <u>1:10 AM</u>	Received by lab <u>Alinda W W</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by	Date	Time	Delivered by	Date	Time
Received by	Date	Time	Delivered by	Date	Time	Analysis by	Date	Time	Delivered by	Date	Time	Delivered by	Date	Time

OrderID: 351903246

Page 1 of 9



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CHAIN OF CUSTODY

Page 2 of

Client # _____	Project # <u>201910454</u>	Building Name <u>Clarkfield School</u>	Shaded Areas are for Laboratory Use Only!
Client <u>YELLOW MEDICINE Co.</u>	Project Name <u>School Demo</u>	Contact Person _____	
Address <u>GRANITE FALLS MN</u>	Contact Person Phone _____	Other Information _____	

Verbal results to <u>Jim L.</u>	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr 1d 2d 3d 4d Specify <u>3d</u>
Verbal results relayed to _____	Verbal results relayed by _____	Date _____ Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	<u>Bulk</u>	Dust	PCM	<u>PLM</u>	TEM	Other	MCE	.8 um	.45 um
050719-JL-16		SE ELEV. Rm. FRAG DOOR FILL			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-17		SE Gym HVAC DUCT INSUL. FOIL	COVER		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-18		SE Gym NW CUST RM DUCT INSUL. FOIL	COVER	STOP	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-19		SE Gym AREA HVAC DUCT INSUL. FOIL	COVER	@	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-20		SE Gym AREA UPPER HVAC DUCT INSUL. COVER	COVER	POSITIVE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-21		SE Gym NW CUST. Rm mud jt on F.L.	AH	A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-22		SE CHOIR Rm DK BROWN TACKED ADHESIVE			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-23		SE CHOIR Rm Top F.inish bd on HEATER units			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-24		SE CHOIR Rm BLACK ADHESIVE ON CHAIR bd.			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-25		SE BAND Practice Rm 9'x9' GREEN FL. TILE / black mastic			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-26		SE BAND 1'x1' C.T. BROWN ADHESIVE PUCK			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-27		SE West Hall to Elevator 12"x12" CREAM FL. TILE			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-28		Rm # 257 1'x1' C.T. BROWN ADHESIVE PUCK			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-29		BPLING 16"x16" C.T. MIXED HOLE	Partial		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-30		2" FL. 2x4 C.T. SALMON PUCK		I4B	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____ FCC: _____ Batch Number: _____ Samples Acceptable? Yes No

Sampled by <u>IEA INC</u>	Date <u>05/07</u>	Time <u>AM</u>	Delivered by <u>IEA INC</u>	Date <u>05/13</u>	Time <u>11:10 AM</u>	Received by lab <u>Alindahl WS</u>	Date <u>05-13-19</u>	Time <u>1:10</u>	Entered by _____	Date _____	Time _____
Received by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____	Analysis by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____

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CHAIN OF CUSTODY

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Client # _____	Project # <u>201910454</u>	Building Name <u>CLARKFIELD School</u>	Shaded Areas are for Laboratory Use Only!
Client <u>Yellow Medicine Co.</u>	Project Name <u>School Demo</u>	Contact Person _____	
Address _____		Contact Person Phone _____	
<u>Granville Falls MD</u>		Other Information _____	

Verbal results to <u>Jim L.</u>	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr <input checked="" type="radio"/> 24 hr <input checked="" type="radio"/> 3d <input type="radio"/> 7d <input type="radio"/> Specify _____
Verbal results relayed to _____	Verbal results relayed by _____	Date _____ Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	Bulk	Dust	PCM	PLM	TEM	Other	MCE	.8 um	.45 um
050719-JL-31		STAFF Lounge Rm wood fl. vapor barrier	Area		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-32		Rm # 254 Brown mopboard / Taw adhesive			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-33		Rm # 254 9"x9" Tan Fl. Tile / Black mastic			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-34		ELEM. OFFICE 9'x9" Brown Fl Tile / Black mastic			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-35		ELEM. OFFICE 9'x9" GRAY FL. TILE *Tile ONLY*			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-36		Rm # 155 Int. Wall black damp proofing			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-37		1st Fl. STAFF Lounge Blue/gray Linoleum	TEST BY PWS		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-38		Kitchen 12"x12" Cream FTILE / Black mastic			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-39		Cafeteria 9"x9" Cream Fl. Tile / Tile ONLY			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-40		N. 1950's Add N. Hall 9"x9" DK Brown Fl. Tile / Black mastic			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-41		1950's Add, N. Hall 1'x1' C.T. DK Brown Puck			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-42		Rm # 164 DK Brown mopboard / black mastic			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-43		Rm # 164 Acoustical Spraying			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-44		Rm # 164 Acoustical Spraying			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-45		Rm # 165 Acoustical Spraying			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____ F/CC. Batch Number: _____ Samples Acceptable? Yes No

Sampled by <u>IEA, Inc.</u>	Date <u>05/27</u>	Time <u>PM</u>	Delivered by <u>IEA, Inc.</u>	Date <u>5/13</u>	Time <u>1:10 PM</u>	Received by lab <u>Windahl WI</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by _____	Date _____	Time _____
Received by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____	Analysis by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____

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CHAIN OF CUSTODY

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Client # _____	Project # <u>201910454</u>	Building Name <u>CLARKFIELD School</u>	Shaded Areas are for Laboratory Use Only!
Client <u>Yellow MEDICINE Co.</u>	Project Name <u>School DEMO</u>	Contact Person _____	
Address <u>GRANITE Falls MN</u>	Contact Person Phone _____	Other Information _____	

Verbal results to <u>Jim L.</u>	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr 1d 2d 3d 4d Specify <u>3d</u>
Verbal results relayed to _____	Verbal results relayed by _____	Date _____ Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	<u>Built</u>	Dust	PCM	<u>PLM</u>	TEM	Other	MCE	.8 um	.45 um
050719-JL-46	- 46	Rm #165 Tack board Adhesive Tan			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-47	- 47	Rm #168 EXT WALL INSUL. DK Brown Adhesive			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-48	- 48	Rm #168 Black window sill			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-49	- 49	N. EXIT INT. GRAY Caulking			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-50	- 50	Rm 263 9"x9" LT. GREEN Fl. Tile / Black mesh			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-51	- 51	Rm #162 Millboard paper insul.	TEST Brick Layer		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-52	- 52	Rm #261 Gray Caulking Millboard insul.			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-53	- 53	Rm #261 Lab Table Top			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-54	- 54	S.M.I.D STAFF WORKRM Linoleum	TEST Brick paper		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-55	- 55	BSMS MAINTENANCE wood fl. VAPOR Barrier			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-56	- 56	E. Boiler Unit Top Insulation	STOP @		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-57	- 57	E. Boiler Unit Top Insulation	POSITION		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-58	- 58	E. Boiler Unit Top Insulation			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-59	- 59	Boiler Rm. N. WATER TANK insul	STOP @		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-60	- 60	Boiler Rm N. WATER TANK insul.	POSITION		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____ F/CC. Batch Number: _____ Samples Acceptable? Yes No

Sampled by <u>IEA INC</u>	Date <u>5/7</u>	Time <u>PM</u>	Delivered by <u>IEA INC</u>	Date <u>5/13</u>	Time <u>1:10 PM</u>	Received by lab <u>Alundahl WI</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by _____	Date _____	Time _____
Received by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____	Analysis by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____

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CHAIN OF CUSTODY

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Client # _____	Project # <u>201910454</u>	Building Name <u>Clarkfield School</u>	Shaded Areas are for Laboratory Use Only!
Client <u>Yellow MEDICINE CO.</u>	Project Name <u>School Demo</u>	Contact Person _____	
Address _____	Contact Person Phone _____	Other Information _____	
<u>Granite Falls MN</u>			

Verbal results to <u>Jim L.</u>	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr 1d 2d/3d 4d Specify <u>3d</u>	
Verbal results relayed to _____	Verbal results relayed by _____	Date _____	Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	<u>Bulk</u>	Dust	PCM	<u>PLM</u>	TEM	Other	MCE	.8 um	.45 um
050719-JL-61	61	Boiler Rm N-Water Tank	same as #	59 & 60	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-62	62	Rm #110 DK Brown Mapboard Adh	glue		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-63	63	Rm #110 2' x 4' Ceiling Tile			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-64	64	Entry Hall by Rm 109 Tan marble w/	Black bd		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-65	65				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-66	66	ELGM. Hall to SW Gym 2'x2'	Ceiling Tile		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-67	67	Rm #156 9'x9' gray Fl. Tile/Black	marble		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-68	68	Rm #156 office 12"x12" Tan w/Black	Fl. Tile / Black mar		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-69	69	Office, Rm 156 2'x4' ceiling tile			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-70	70	Rm #206 1'x1' C.T. ^{Brown} ADHESIVE	ONLY		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-71	71	Rm #206 9'x9' DK Brown Floor Tile/	Black marble		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-72	72	Rm #203 9'x9' Tan Floor Tile only			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-73	73	Rm #204 9'x9' Green Floor Tile only			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-74	74	Rm #207 Black Charic board Adhesive			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
050719-JL-75	75	Rm #207 mud pipe jt			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____ F/C.C. Batch Number: _____ Samples Acceptable? Yes No

Sampled by <u>IEA, Inc</u>	Date <u>05/07</u>	Time <u>pm</u>	Delivered by <u>IEA, Inc</u>	Date <u>5/13</u>	Time <u>1:10 pm</u>	Received by lab <u>Alindahl W</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by _____	Date _____	Time _____
Received by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____	Analysis by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____

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CHAIN OF CUSTODY

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Client # _____	Project # <u>201910454</u>	Building Name <u>CLARKFIELD School</u>	Shaded Areas are for Laboratory Use Only!
Client <u>YELLOW MEDICINE CO.</u>	Project Name <u>School Down</u>	Contact Person _____	
Address <u>GRANITE Falls MN</u>	Contact Person Phone _____	Other Information _____	

Verbal results to <u>Jim L</u>	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr 1d 2d 3d 4d Specify <u>3d</u>
Verbal results relayed to _____	Verbal results relayed by _____	Date _____ Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	Bulk	Dust	PCM	PLM	TEM	Other	MCE	.8 um	.45 um
050719-JL-76		Rm # 204 Tackled BROWN MASTIC			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-77		ELM 1st Fl. Hall 12'x12" LG Blue w Blue Strakes			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-78		Rm # 102 Entry SIBERITE/GR compound			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-79		Rm # 103 Yellow carpet glue			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-80		Rm 103 RR GRAY Linoleum #RES 1st BOCE 2nd STOP			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-81		ELM Hall ceiling Vapour Barrier above			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-82		SE gym HALL 2'x2" ceiling Tile			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-83		1977 add N. MECH. RM mud pipe jt		24A	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-84		FF add Boy's L.R. mud pipe jt			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-85		FF Boy's L.R. 2'x4' ceiling Tile			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-86		FF Boy's L.R. coaches Rm 4'x4' ceramic wall		Tile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-87		FF Boy's L.R. coaches Rm. white caulking			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-88		FF Gym wall base adhesive BROWN			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-89		FF Concession Area 12'x12' TAN w Blue Strakes		Blue Mastic	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-90		FF MEN'S Lobby RR 1" ceramic floor			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____					F/CC.	Batch Number: _____			Samples Acceptable? <input type="radio"/> Yes <input type="radio"/> No		
Sampled by <u>IEA INW</u>	Date <u>05/07</u>	Time <u>pm</u>	Delivered by <u>IEA Eric</u>	Date <u>05/14</u>	Time <u>6:50 am</u>	Received by lab <u>Alindahl</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by _____	Date _____	Time _____
Received by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____	Analysis by <u>MI</u>	Date _____	Time _____	Delivered by _____	Date _____	Time _____

Order ID: 351903246

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 1-800-233-9513

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CHAIN OF CUSTODY

Client # _____	Project # <u>201910454</u>	Building Name <u>CLARKfield School</u>	Shaded Areas are for Laboratory Use Only!
Client <u>Yellow MEDICINE Co.</u>	Project Name <u>School Demolition</u>	Contact Person _____	
Address <u>GRANITE FALLS</u>	Contact Person Phone _____	Other Information _____	

Verbal results to <u>Jim L.</u>	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr 1d 2d 3d 4d Specify _____
Verbal results relayed to _____	Verbal results relayed by _____	Date _____ Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	Bulk	Dust	PCM	PLM	TEM	Other	MCE	.8 um	.45 um
050719-JL-91	Rm #164	Acoustical Spray-on	STOP @		○	○	○	○	○	○		○	○	○
050719-JL-92	Rm #165	Acoustical Spray-on	POSITIVE		○	○	○	○	○	○		○	○	○
050719-JL-93	SE GYM AREA	S. HALL PLASTER	STOP @		○	○	○	○	○	○		○	○	○
050719-JL-94	SE GYM AREA	W. HALL PLASTER			○	○	○	○	○	○	○		○	○
050719-JL-95	SE GYM AREA	BOYS Locker Rm	Plaster		○	○	○	○	○	○		○	○	○
050719-JL-96	SE GYM AREA	Girls Locker Rm	Plaster	POSITIVE	○	○	○	○	○	○		○	○	○
050719-JL-97	ORIG. Bldg	Rm 167 PLASTER	STOP @		○	○	○	○	○	○		○	○	○
050719-JL-98	ORIG. Bldg	Rm 155 PLASTER			○	○	○	○	○	○	○		○	○
050719-JL-99	ORIG Bldg	Elementary Office	PLASTER		○	○	○	○	○	○		○	○	○
050719-JL-100	ORIG Bldg	Rm 254 PLASTER	STOP @		○	○	○	○	○	○		○	○	○
050719-JL-101	ORIG. Bldg	Rm 257 PLASTER			○	○	○	○	○	○	○		○	○
050719-JL-102	ORIG. Bldg	Boiler Rm wall			○	○	○	○	○	○		○	○	○
050719-JL-103	ORIG. Bldg	BSMT STAIRWAY wall			○	○	○	○	○	○		○	○	○
050719-JL-104	NW WING	Rm 102 PLASTER	POSITIVE		○	○	○	○	○	○		○	○	○
050719-JL-105	NW WING	HALL by Rm 105			○	○	○	○	○	○		○	○	○

The MN Department of Health Alternative Indoor Air Standard for this project is: _____ FICC. Batch Number: _____ Samples Acceptable? Yes No

Sampled by <u>IEA Inc.</u>	Date <u>05/07</u>	Time <u>PM</u>	Delivered by <u>IEA Inc</u>	Date <u>05/14</u>	Time <u>6:50a</u>	Received by lab <u>Alward WI</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by _____	Date _____	Time _____
Received by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____	Analysis by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____

OrderID: 351903246

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CHAIN OF CUSTODY

Client # _____	Project # <u>201910454</u>	Building Name <u>CLARKFIELD School</u>	Shaded Areas are for Laboratory Use Only!
Client <u>Yellow MEDICINE Co.</u>	Project Name <u>School Demolition</u>	Contact Person _____	
Address <u>Granite Falls</u>	Contact Person Phone _____	Other Information _____	

Verbal results to <u>Jim L.</u>	Phone, Fax No. or E-Mail _____	TAT (circle) 6 hr 1d 2d <u>3d</u> 4d Specify
Verbal results relayed to _____	Verbal results relayed by _____	Date _____ Time _____

Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other _____					Matrix type			Analysis requested				Filter type		
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Air	<u>Bulk</u>	Dust	PCM	<u>PLM</u>	TEM	Other	MCE	.8 um	.45 um
050719-JL-106	NW WING	Rm 102 Plaster	} STOP @ POSITIVE		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-107	NW WING	Rm 106 Plaster			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-108	NW WING	Rm 202 Plaster			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-109	NW WING	Rm 205 Plaster			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-110	NW WING	Rm 207 Plaster			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-111	SE UPPER GYM	RF Wall Flashing			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-112	SE UPPER GYM	RF CAP EDGE PLASTER	Concrete		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-113	SE Rubber	RF Black Sealant on Cap	6066		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-114	SE GYM	CAULK ON WINDOWS			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-115	SE WALL	EXP. JOINT CAULKING			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-116	NE	Small sloped RF PLASTER	Concrete		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-117	NW WING	EXT. WINDOW CAULK	GRAY		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-118	NW	EXT SILL CAULK	GRAY		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-119	NW	CHIMNEY white CAULK			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-120	W GYM	WALL CAULKING along Rubber/metal			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____ F/CC. Batch Number: _____ Samples Acceptable? Yes No

Sampled by <u>IEA, Inc</u>	Date <u>05/07</u>	Time <u>pm</u>	Delivered by <u>IEA INC</u>	Date <u>05/14</u>	Time <u>6:50am</u>	Received by lab <u>Alindahl M</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by _____	Date _____	Time _____
Received by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____	Analysis by _____	Date _____	Time _____	Delivered by _____	Date _____	Time _____

OrderID: 351903246



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CHAIN OF CUSTODY

Page 9 of 9

Client # _____ Project # 201910454 Building Name CLARKFIELD School Shaded Areas are for Laboratory Use Only!

Client YELLOW MCDILLING CO. Project Name School Demolition

Address Granite Falls MN Contact Person _____ Contact Person Phone _____

Other Information _____

Verbal results to Jim L. Phone, Fax No. or E-Mail _____ TAT (circle) 6 hr 1d 2d 3d 4d Specify _____

Verbal results relayed to _____ Verbal results relayed by _____ Date _____ Time _____

Analysis location: On Site Lab Regional Office Other _____

Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Matrix type			Analysis requested				Filter type			
					Air	Bulk	Dust	PCM	PLM	TEM	Other	MCE	.8 um	.45 um	
050719-JL-121		NW Lower Rf. BUR MEMBRANE			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>					
050719-JL-122		NW Lower Rf BUR VAPOR BARRIER			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-123		NW Lower Rf BUR CONTROL JT. BASE FLASHING			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-124		KILN BRICK			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
050719-JL-125		KILN BRICK			<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The MN Department of Health Alternative Indoor Air Standard for this project is: _____ F/CC. Batch Number: _____ Samples Acceptable? Yes No

Sampled by <u>IEA INC</u>	Date <u>05/07</u>	Time <u>pm</u>	Delivered by <u>IEA, INC</u>	Date <u>05/14</u>	Time <u>6:50am</u>	Received by lab <u>Am... 5-13-19</u>	Date <u>5-13-19</u>	Time <u>1:10</u>	Entered by	Date	Time
Received by	Date	Time	Delivered by	Date	Time	Analysis by	Date	Time	Delivered by	Date	Time

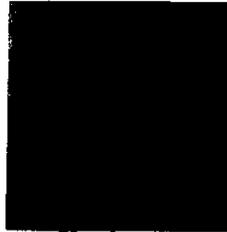
OrderID: 351903246

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SECTION IV

Asbestos Inspectors' Licenses

Asbestos Inspector State Certification/Accreditation



m ASBESTOS
DEPARTMENT OF HEALTH INSPECTOR
Certified by:
State of Minnesota
Department of Health
Expires: 11/20/2019
James R Lindahl
2701 4th Ave N
Anoka, MN 55303

J. P. Hean
Director, Env. Health Div

No. AI2333 Issued 12/03/2018

Inspector

I have completed an EPA-approved training course and all appropriate refresher courses and am licensed as an Asbestos Inspector by the Minnesota Department of Health.

Jim Lindahl

Signature

May 6-8, 2019

Date of Inspection

Jim Lindahl

Print Name

AI2333

State Certification/Accreditation Number

Asbestos Inspector State Certification/Accreditation



Chad M. Whylen
Director, Env. Health Div.

m ASBESTOS
DEPARTMENT OF HEALTH INSPECTOR
Certified by:
State of Minnesota
Department of Health
Expires: 10/05/2019
Chad M. Whylen
401 3rd St S #328
Sartell, MN 56377

No. AI12966 Issued: 10/12/2018

Inspector

I have completed an EPA-approved training course and all appropriate refresher courses and am licensed as an Asbestos Inspector by the Minnesota Department of Health.

Chad M. Whylen

Signature

May 6-8, 2019

Date of Inspection

Chad Whylen

Print Name

AI12966

State Certification/Accreditation Number

Appendix C



EMSL Analytical, Inc.

3410 Winnetka Avenue North New Hope, MN 55427
Tel/Fax: (763) 449-4922 / (763) 449-4924
<http://www.EMSL.com> / minneapolislab@emsl.com

EMSL Order: 351906522
Customer ID: IFEA50
Customer PO:
Project ID:

Attention: Jennifer Theis
Inst. For Environmental Assessment
9201 West Broadway
Suite 600
Brooklyn Park, MN 55445
Project: 201910734- Clarkfield School

Phone: (763) 315-7900
Fax: (763) 315-7920
Received Date: 08/02/2019 10:00 PM
Analysis Date: 08/06/2019
Collected Date: 07/24/2019

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
072419-JL-126 351906522-0001	Boiler Rm W. H2O Tank Insulation	Gray Fibrous Homogeneous	25% Cellulose 15% MinWool	60.0% Non-fibrous (Other)	None Detected
072419-JL-127 351906522-0002	Boiler Rm W. H2O Tank Insulation	Gray Fibrous Homogeneous	25% Cellulose 15% MinWool	60.0% Non-fibrous (Other)	None Detected
072419-JL-128 351906522-0003	Boiler Rm W. H2O Tank Insulation	White Fibrous Homogeneous	50% Cellulose	5% Mica 45.0% Non-fibrous (Other)	None Detected
072419-JL-129 351906522-0004	Rm 201 (NW) Brown Board Pucks	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
072419-JL-130 351906522-0005	NW Elem 1st Fl. Hall Brown Ceiling Puck	Brown Non-Fibrous Homogeneous		97.0% Non-fibrous (Other)	3% Chrysotile
072419-JL-131 351906522-0006	Boiler Rm W. Boiler Unit Insulation	Brown/Gray/Red Non-Fibrous Homogeneous	15% MinWool	85.0% Non-fibrous (Other)	None Detected
072419-JL-132 351906522-0007	E gym NE Upper Fan Rm Duct Insulation	White Fibrous Homogeneous	95% Cellulose	5.0% Non-fibrous (Other)	None Detected
072419-JL-133-Insu lation 351906522-0008	E gym NW Upper Fan Rm Duct Insulation	Yellow Fibrous Homogeneous	98% MinWool	2.0% Non-fibrous (Other)	None Detected
072419-JL-133-Wra p 351906522-0008A	E gym NW Upper Fan Rm Duct Insulation	Tan Fibrous Homogeneous	95% Cellulose	5.0% Non-fibrous (Other)	None Detected
072419-JL-134-Insu lation 351906522-0009	Weight Room Duct Insulation	Yellow Fibrous Homogeneous	98% MinWool	2.0% Non-fibrous (Other)	None Detected

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Initial report from: 08/06/2019 10:57:54



EMSL Analytical, Inc.

3410 Winnetka Avenue North New Hope, MN 55427
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http://www.EMSL.com / minneapolislab@emsl.com

EMSL Order: 351906522
Customer ID: IFEA50
Customer PO:
Project ID:

Attention: Jennifer Theis
Inst. For Environmental Assessment
9201 West Broadway
Suite 600
Brooklyn Park, MN 55445
Project: 201910734- Clarkfield School

Phone: (763) 315-7900
Fax: (763) 315-7920
Received Date: 08/02/2019 10:00 PM
Analysis Date: 08/06/2019
Collected Date: 07/24/2019

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
072419-JL-134-Wrap 351906522-0009A	Weight Room Duct Insulation	Tan Fibrous Homogeneous	95% Cellulose	5.0% Non-fibrous (Other)	None Detected
072419-JL-135-Insulation 351906522-0010	Lower Equipment Rm Duct Insulation	Yellow Fibrous Homogeneous	98% MinWool	2.0% Non-fibrous (Other)	None Detected
072419-JL-135-Wrap 351906522-0010A	Lower Equipment Rm Duct Insulation	White/Silver Fibrous Homogeneous	75% Cellulose 15% Glass	10.0% Non-fibrous (Other)	None Detected
072419-JL-136 351906522-0011	SE Gym EXT Wall jt Gray Caulking	Tan Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
072419-JL-137 351906522-0012	NE H.S. Wing Window Caulking gray	Gray Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
072419-JL-138 351906522-0013	NE H.S. Brick jt gray wall caulking	Gray Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
072419-JL-139 351906522-0014	NW Elem Gray window caulking	Gray Non-Fibrous Homogeneous	10% Synthetic	85.0% Non-fibrous (Other)	5% Chrysotile

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Initial report from: 08/06/2019 10:57:54



EMSL Analytical, Inc.

3410 Winnetka Avenue North New Hope, MN 55427
Tel/Fax: (763) 449-4922 / (763) 449-4924
http://www.EMSL.com / minneapolislab@emsl.com

EMSL Order: 351906522
Customer ID: IFEA50
Customer PO:
Project ID:

Attention: Jennifer Theis
Inst. For Environmental Assessment
9201 West Broadway
Suite 600
Brooklyn Park, MN 55445
Project: 201910734- Clarkfield School

Phone: (763) 315-7900
Fax: (763) 315-7920
Received Date: 08/02/2019 10:00 PM
Analysis Date: 08/06/2019
Collected Date: 07/24/2019

The samples in this report were submitted to EMSL for analysis by Asbestos Analysis of Bulk materials via EPA/600 (0513) Method using Polarized Light Microscopy. The reference number for these samples is the EMSL Order ID above. Please use this reference number when calling about these samples.

Report Comments:

Sample Receipt Date: 08/02/2019 Sample Receipt Time: 10:00 PM
Analysis Completed Date: 08/06/2019 Analysis Completed Time: 10:55 AM

Analyst(s):

Daniel Nordland PLM (17)

Samples Reviewed and approved by:

Rachel Travis, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Initial report from: 08/06/2019 10:57:54



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CHAIN OF CUSTODY

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Client #	Project # 201910734		Building Name	Clarkfield School			
Client	Yellow Medicine County		Project Name	2019 Abatement/Demolition			
Address	Granite Falls MN		Contact Person	MS JANEL TIMM			
Verbal results to	Jim Lindahl		Phone, Fax No. or E-Mail	TAT (circle) 6 hr 10/23/3d 4d Specify			
Verbal results relayed to			Date	Time			
Analysis location: <input type="radio"/> On Site <input type="radio"/> Lab <input type="radio"/> Regional Office <input type="radio"/> Other							
Sample #	Work Area or Phase #	Comments / Location	Sample type or Material code	Volume	Matrix type	Analysis requested	Filter type
072419-JL-126		Boiler Rm W. H2O TANK INSULATION	STOP	@	<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> MCE
072419-JL-127		Boiler Rm W. H2O TANK INSULATION	POSITIVE		<input checked="" type="radio"/> Bulk	<input checked="" type="radio"/> TEM	<input type="radio"/> .8 um
072419-JL-128		Boiler Rm W. H2O TANK INSULATION	(adhesives only)		<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> .45 um
072419-JL-129		Rm 201 (NW) BROWN BONDED PUCKS	(adhesives only)		<input checked="" type="radio"/> Bulk	<input checked="" type="radio"/> TEM	<input type="radio"/> MCE
072419-JL-130		NW Elem 1st Fl. Hall Brown Coating	PUCK (adhesives only)		<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> .8 um
072419-JL-131		Boiler Rm W. Boiler Unit Insulation			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> MCE
072419-JL-132		E 94m NE upper Fan Rm Duct insulation			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> .8 um
072419-JL-133		E 94m NW upper Fan Rm Duct INSULATION			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> MCE
072419-JL-134		Weight Room Duct Insulation			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> .8 um
072419-JL-135		LOWER EQUIPMENT Rm Duct insulation			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> MCE
072419-JL-136		SE Gym EXT wall jt Gray caulking			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> .8 um
072419-JL-137		NE H.S. Wing window caulking gray			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> MCE
072419-JL-138		NE H.S. BRICK jt gray wall caulking			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> .8 um
072419-JL-139		NW Elem Gray window caulking			<input checked="" type="radio"/> Air	<input checked="" type="radio"/> PCM	<input type="radio"/> MCE
The MN Department of Health Alternative Indoor Air Standard for this project is: _____ P/CC: _____ Batch Number: _____							
Sampled by	Date	Delivered by	Date	Time	Received by	Date	Time
FEA MW	7/24	ICB MW	8/2	18:00	Rundak MW	8/2/19	12:00
Received by	Date	Delivered by	Date	Time	Analysis by	Date	Time