University of Idaho
State of Idaho Division of Public Works
Coffman Engineers, Inc.

A D D E N D U M N U M B E R TWO

May 30, 2025

To all contract bidders of record for the work titled:

University of Idaho

DPW #23251
UI: Replace Chiller, CNR BLD. 055
University of Idaho
Moscow, Idaho

Engineer's Project Number: 231760

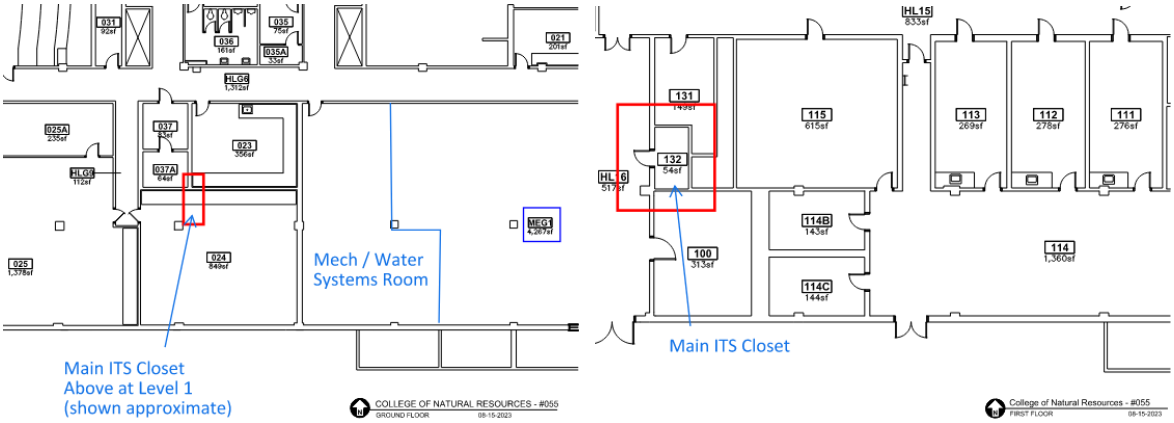
Please notify everyone concerned (subcontractors and suppliers) as to the issuance and contents of this Addendum prior to the date of bid opening. This Addendum is a part of the contract documents and modifies them as follows:

GENERAL

I. Bidder questions:

Q1: On panel BHC schedule it states the main is "OCPD" that mean MLO or Main breaker?
A1: Main Breaker

Q2: Sheet E-101/Key note 5- Where is the location of closest location of server rack?
A2: Main ITS closet is located in CNR1st floor room #135.



Q3: Sheet E-101/Keynote 3 – Contractor believes panel cannot be installed in this location because of clearances due to gutter located along that location. Does contractor bid as per plans and request a change order for relocation or will a new location be determined before bid time?
A3: Panelboard is permitted to be mounted above the gutter so long as the gutter does not extend 6" beyond the panelboard into the working space. If the gutter does exceed this then panelboard location should be field coordinated.

Q4: Who provided the basis of design selection for the Drycooler (DC-1)?
A4: CMS Inland Northwest, Inc., Ryan Grant, Main 509.731.4615, ryan@cmswa.com

II. **Asbestos Abatement:** Upon review of available records we believe the CNR fisheries laboratory spaces and basement mechanical rooms may have asbestos content in the piping insulation and in the laboratory countertop material. The asbestos is considered non-friable asbestos-containing materials and is generally considered safe as long as it remains intact and in good condition, as the asbestos fibers are bound within the material and not easily released. Contractor to provide the following to remove and perform abatement of any asbestos found during performance of work.

A. Contractor to employ an asbestos abatement company to remove and abate any asbestos material found during performance of work. Asbestos abatement company is to be fully licensed, insured, and certified to perform asbestos abatement work in the State of Idaho.
B. Prior to start of work, the contractor and asbestos abatement company are to identify any existing piping, insulation, or other materials to be demolished during the performance of work. Asbestos abatement company to report to contractor and DPW project manager any existing piping, insulation, or other materials they suspect to contain asbestos materials. Any piping, insulation, materials, or building areas outside of scope of work is excluded from asbestos identification effort and not to be inspected for asbestos content.
C. Contractor and asbestos abatement company to create a limited scope Asbestos Abatement Plan incorporating:
    1. Removal of asbestos in a non-friable condition to avoid use of negative pressure enclosures.
    2. Piping suspected of containing asbestos, and to be demolished during performance of work, is to be encapsulated and removed in its entirety. For bidding purposes assume at least 259 linear feet of asbestos containing materials measured by length (e.g., thermal system insulation).
    3. Any piping outside of scope of work is to be left undisturbed.
    4. Other materials suspected of containing asbestos, and to be demolished during performance of work, are to be abated and removed.
    5. All countertops in CNR fisheries laboratory spaces are to be reused in place. Contractor to install protective coverings to enclose and protect CNR fisheries laboratory counters during construction.

    Prior to start of work Contractor to submit Asbestos Abatement Plan to DPW project manager and U of I for approval.
D. Contractor to notify University of Idaho and Idaho DPW project manager of asbestos found during performance of work. Contractor to coordinate removal of asbestos with University of Idaho staff to reduce abatement process impact on CNR operation.

E. The demolition of asbestos containing materials shall meet all University of Idaho standards, Idaho Department of Environmental Quality (DEQ) standards, EPA standards, and National Emission Standard for Asbestos (NESHAP). All demolition projects require submittal of the Asbestos NESHAP 10-Day Renovation and Demolition Notification Form by the asbestos remediation contractor.
F. All asbestos containing materials are to be disposed of in accordance with national, state and local codes.
G. Contractor is responsible for all asbestos removal and disposal cost, asbestos contractor cost, and any asbestos permit/form fees.
H. Asbestos abatement contractor and abatement work shall at minimum meet the requirements of Specification Section 028200 – Asbestos Remediation, see attachment.

III. **Substitutions:** This is an acceptance of general quality only. No attempt has been made to check each material as to special features, capacities, or physical dimensions specially required for the project. It shall be the responsibility of the supplier, manufacturer, and contractor to check all requirements before submitting for final acceptance. Final acceptance of exact features, sizes capacities, etc., all of which must match materials indicated and specified, will be determined when submitted during the construction period. Certain acceptances are subject to conditions noted.

Section	Item	Manufacturer
Sheet M-701	Pot Feeder	American Wheatley

SECTION 028200 – ASBESTOS REMEDIATION

PART 1 GENERAL

1.1 REFERENCES

1.1.1 The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA)

AIHA Z88.6 (2006) Respiratory Protection – Respirator Use- Physical Qualifications for Personnel

AIHA Z9.2 (2006) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE Z87.1 (2003) Standard for Occupational and Educational Eye and Face Protection

ASTM INTERNATIONAL (ASTM)

ASTM E1368 (2011) Visual Inspection of Asbestos Abatement Projects

EM 385-1-1(2003) Safety -- Safety and Health Requirements NATIONAL INSTITUTE FOR

OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 94-113(1994; 4th Ed) NIOSH Manual of Analytical Methods

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.134 Respiratory Protection

29 CFR 1910.141 Sanitation

29 CFR 1910.147 Control of Hazardous Energy (Lock Out/Tag Out)

29 CFR 1926.1101 Asbestos

29 CFR 1926.32 Safety and Health Regulations for Construction – Definition

40 CFR 61 National Emission Standards for Hazardous Air Pollutants

40 CFR 763 Asbestos

42 CFR 84 Approval of Respiratory Protective Devices

49 CFR 107 Hazardous Materials Program Procedures

49 CFR 171 General Information, Regulations, and Definitions

49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements

49 CFR 173 Shippers - General Requirements for Shipments and Packagings

UNDERWRITERS LABORATORIES (UL)

UL 586 (2009) Standard for High-Efficiency Particulate, Air Filter Units

1.2 DEFINITIONS

1.2.1 Adequately wet

Sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

1.2.2 Amended Water

Water containing a wetting agent or surfactant with a maximum surface tension of 0.00042 psi.

1.2.3 Asbestos Containing Material (ACM)

Any materials containing more than one percent asbestos.

1.2.4 Area Sampling

Sampling of asbestos fiber concentrations which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.

1.2.5 Asbestos

The term asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos and any of these minerals that has been chemically treated or altered. Materials are considered to contain asbestos if the asbestos content of the material is determined to be at least one percent.

1.2.6 Asbestos Control Area

That area where asbestos removal operations are performed which is isolated by physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.

1.2.7 Asbestos Fibers

Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by National Institute for Occupational Safety and Health (NIOSH) Method 7400.

1.2.8 Asbestos Permissible Exposure Limit

0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.1101 or other Federal legislation having legal jurisdiction for the protection of workers health.

1.2.9 Authorized Person

Any person authorized by the Contractor and required by work duties to be present in the regulated areas.

1.2.10 Background

The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.

1.2.11 Class II Asbestos Work

Activities defined by OSHA involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos - containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastic. Certain "incidental" roofing materials such as mastic, flashing and cements when they are still intact are excluded from Class II asbestos work.
Removal of small amounts of these materials which would fit into a glove-bag may be classified as a Class III job.

1.2.12 Clean Room

An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.

1.2.13 Competent Person

A person meeting the requirements for competent person as specified in 29 CFR 1926.1101 including a person capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, and is specifically trained in a training course which meet the criteria of Environmental Protection Agency (EPA)'s Model Accreditation Plan (40 CFR 763) for project designer or supervisor, or its equivalent. The competent person shall have a current asbestos contractors or supervisors license.

1.2.14 Contractor/Supervisor

Individual who supervises asbestos abatement work and has EPA Model Accreditation Plan "Contractor/Supervisor" training; has EPA/State certification as a "Contractor/Supervisor".

1.2.15 Critical Barrier

One or more layers of plastic sealed over all openings into a regulated area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a regulated area from migrating to an adjacent area.

1.2.16 Decontamination Area

An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean

room, which is used for the decontamination of workers, materials, and equipment that are contaminated with asbestos.

1.2.17 Demolition

The wrecking or taking out of any load-supporting structural member and any related razing, removing, or stripping of asbestos products.

1.2.18 Disposal Bag

A doubled bagged consisting of 6 mil thick, leak-tight plastic bag, pre-labeled in accordance with 29 CFR 1926.1101, used for transporting asbestos waste from containment to disposal site.

1.2.19 Disturbance

Activities that disrupt the matrix of ACM, crumble or pulverize ACM, or generate visible debris from ACM. Disturbance includes cutting away small amounts of ACM, no greater than the amount which can be contained in 1 standard sized glove-bag or waste bag, not larger than 60 inches in length and width in order to access a building component.

1.2.20 Equipment Room or Area

An area adjacent to the regulated area used for the decontamination of employees and their equipment.

1.2.21 Friable Asbestos Containing Material

A term defined in 40 CFR 61, Subpart M and EPA 340/1-90/018 meaning any material which contains more than 1 percent asbestos, as determined using the method specified in 40 CFR 763, Polarized Light Microscopy (PLM), that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.

1.2.22 High-Efficiency Particulate Air (HEPA) Filter Equipment

High efficiency particulate air (HEPA) filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

1.2.23 Intact

ACM which has not crumbled, been pulverized, or otherwise deteriorated so that the asbestos is no longer likely to be bound with its matrix. Removal of "intact" asphaltic, resinous, cementitious products does not render the ACM non-intact simply by being separated into smaller pieces.

1.2.24 NESHAP

National Emission Standards for Hazardous Air Pollutants. The USEPA NESHAP regulation for asbestos is at 40 CFR 61, Subpart M.

1.2.25 Negative Pressure Enclosure (NPE)

That engineering control technique described as a negative pressure enclosure in 29 CFR 1926.1101. May be of any configuration. At least 4 air changes per hour shall be maintained in the NPE.

1.2.26 Negative Initial Exposure Assessment

A demonstration by the Contractor to show that employee exposure during an operation is expected to be consistently below the OSHA Permissible Exposure Limits (PELs).

1.2.27 Non-friable ACM (Category II)

A NESHAP term defined in 40 CFR 61, Subpart M and EPA 340/1- 90/018 meaning any material containing more than 1 percent asbestos that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.

Material that contains asbestos in which the fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. It is understood that asbestos fibers may be released under other conditions such as demolition, removal, or mishap.

1.2.28 Permissible Exposure Limits (PELs)

Shall not exceed 0.1 fiber per cubic centimeter of air during an
8 hour Time-Weighted Average.

1.2.29 PEL-Time Weighted Average (TWA)

Concentration of asbestos not in excess of 0.1 fibers per cubic centimeter of air (f/cc) as an 8 hour time weighted average (TWA).

1.2.29.2 PEL-Excursion Limit

An airborne concentration of asbestos not in excess of 1.0 f/cc of air as averaged over a sampling period of 30 minutes.

1.2.30 Personal Sampling

Air sampling which is performed to determine asbestos fiber concentrations within the breathing zone of a specific employee, as performed in accordance with 29 CFR 1926.1101.

1.2.31 Phase Contrast Microscopy (PCM)

Phase Contrast Microscopy (PCM) is a technique using a light microscope equipped to provide enhanced contrast between the fibers collected and the background filter material.

1.2.32 Private Qualified Person (PQP)

The qualified person hired by the Contractor to perform the herein listed tasks.

1.2.33 Qualified Person (QP)

A Registered Architect, Professional Engineer, Certified Industrial Hygienist, consultant or other qualified person who has successfully completed training and is therefore accredited under a legitimate State Model Accreditation Plan as described in 40 CFR 763 as a Building Inspector, Contractor/Supervisor Abatement Worker, and Asbestos Project Designer; and has successfully completed the National Institute of Occupational Safety and Health (NIOSH) 582 course "Sampling and Evaluating Airborne Asbestos Dust" or is an accredited asbestos Air Monitoring Professional. The QP must be qualified to perform visual inspections as indicated in ASTM E1368.

1.2.34 Regulated Area

An OSHA term defined in 29 CFR 1926.1101 meaning an area established by the Contractor to demarcate areas where Class I, II, and III asbestos work is conducted; also any adjoining area where debris and waste from such asbestos work accumulate; and an area within which airborne concentrations of asbestos exceed,

or there is a reasonable possibility they may exceed, the permissible exposure limit.

1.2.35 Removal

All operations where ACM is taken out or stripped from structures or substrates, and includes demolition operations.

1.2.36 Time Weighted Average (TWA)

The TWA is an 8-hour time weighted average airborne concentration of asbestos fibers.

1.2.37 Wetting Agent

A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied. An equivalent wetting agent must have a surface tension of at most 0.00042 psi.

1.2.38 Worker

Individual (not designated as the Competent Person or a supervisor) who performs asbestos work and has completed asbestos worker training required by 29 CFR 1926.1101, to include EPA Model Accreditation Plan (MAP) "Worker" training; accreditation if required by the OSHA Class of work to be performed or by the state where the work is to be performed.

1.3 MEDICAL REQUIREMENTS

Provide medical requirements including but not limited to medical surveillance and medical record keeping as listed in 29 CFR 1926.1101.

1.3.1 Medical Examinations

Before exposure to airborne asbestos fibers, the Contractor shall provide workers with a comprehensive medical examination as required by 29 CFR 1926.1101 or other pertinent State or local directives. This requirement must have been satisfied within the 12 months prior to the start of work on this contract. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos and within 30 calendar days before or after the termination of employment in such occupation. Specifically identify x-ray films of asbestos workers to the consulting

radiologist and mark medical record jackets with the word "ASBESTOS."

1.3.2 Medical Records

The Contractor shall maintain complete and accurate records of employees' medical examinations, medical records, and exposure data for a period of 50 years after termination of employment and make records of the required medical examinations and exposure data available for inspection and copying to: The Assistant Secretary of Labor for Occupational Safety and Health (OSHA), or authorized representatives of them, and an employee's physician upon the request of the employee or former employee.

1.3.3 Medical Certification

The Contractor shall provide a written certification for each worker and supervisor, signed by a licensed physician indicating that the worker and supervisor has met or exceeded all of the medical prerequisites listed herein and in 29 CFR 1926.1101 and
29 CFR 1926.103 as prescribed by law. The Contractor shall submit certificates prior to the start of work but after the main abatement submittal.

1.4 EMPLOYEE TRAINING

The Contractor shall submit certificates, prior to the start of work but after the main abatement submittal, signed by each employee indicating that the employee has received training in the proper handling of materials and wastes that contain asbestos in accordance with 40 CFR 763; understands the health implications and risks involved, including the illnesses possible from exposure to airborne asbestos fibers; understands the use and limits of the respiratory equipment to be used; and understands the results of monitoring of airborne quantities of asbestos as related to health and respiratory equipment as indicated in 29 CFR 1926.1101 on an initial and annual basis.

The Contractor shall train all personnel involved in the asbestos control work in accordance with EPA Asbestos Hazard Emergency Response Act (AHERA) training criteria or State training criteria whichever is more stringent. The Contractor shall document the training by providing: dates of training, training entity, course outline, names of instructors, and qualifications of instructors upon request by the DPW Project Manager.

The Contractor shall furnish each employee with respirator training and fit testing as required by 29 CFR 1926.1101. Fully cover engineering and other hazard control techniques and procedures. All asbestos workers shall have a current State of Idaho asbestos worker's license.

1.4.1 Permits, Licenses, and Notifications

The Contractor shall obtain necessary permits and licenses in conjunction with asbestos removal, hauling, and disposition, and furnish notification of such actions required by Federal, State, regional, and local authorities prior to the start of work.

The Contractor shall notify the Idaho Department of Environmental Quality (DEQ) NESHAP 10-Day Renovation and Demolition Notification Form to be completed and returned to DEQ not less than 10 working days before the project is intended to start, if asbestos may become friable during removal, or as required by DEQ, and the DPW Project Manager in accordance with 40 CFR 61-SUBPART M.

The Contractor shall notify the DPW Project Manager and other appropriate DPW or U of I agencies in writing 20 working days prior to the start of asbestos work as indicated in applicable laws, ordinances, criteria, rules, and regulations. Submit copies of all Notifications to the DPW Project Manager.

1.5 ENVIRONMENT, SAFETY AND HEALTH COMPLIANCE

In addition to detailed requirements of this specification, the Contractor shall comply with those applicable laws, ordinances, criteria, rules, and regulations of Federal, State, regional, and local authorities regarding handling, storing, transporting, and disposing of asbestos waste materials.

The Contractor shall comply with the applicable requirements of the current issue of 29 CFR 1926.1101, 40 CFR 61-SUBPART A, 40 CFR 61-SUBPART M.

The Contractor shall submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting the work. Where the requirements of this specification, applicable laws, rules, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirement as defined by the DPW or U of I shall apply.

The following laws, ordinances, criteria, rules and regulations regarding removal, handling, storing, transporting and disposing of asbestos materials apply:

a. 29 CFR 1926.1101

b. 40 CFR 61-SUBPART M

c. 40 CFR 763 (As applicable to non-school).

1.6 AIR SAMPLING RESULTS

The square footage amount for CNR basement mechanical area is 2,500 square feet and CNR fisheries laboratory is approximately 3,400 square feet. The recommended bulk sampling for basement mechanical areas shall be two (2) samples and CNR fisheries laboratory shall be two (2) samples.

The Contractor's representative shall complete fiber counting and provide results to the PQP for review within 16 hours of the "time off" of the sample pump. Notify the DPW Project Manager immediately of any airborne levels of asbestos fibers in excess of the acceptable limits.

The Contractor's representative shall notify the Contractor and the DPW Project Manager immediately of any variance in the pressure differential which could cause adjacent unsealed areas to have asbestos fiber concentrations in excess of 0.01 fibers per cubic centimeter or background whichever is higher. In no circumstance shall levels exceed 0.1 fibers per cubic centimeter.

The Contractor shall submit sampling results to the DPW Project Manager and the affected Contractor employees, where required by law within 3 working days, signed by the testing laboratory employee performing air sampling, the employee that analyzed the sample, and the PQP.

1.7 ASBESTOS WARNING SIGNS AND LABELS

The Contractor shall provide warning signs printed in English at all approaches to asbestos control areas. Locate signs at such a distance that personnel may read the sign and take the necessary protective steps required before entering the area.

The Contractor shall provide labels and affix to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos.

1.7.1 Warning Sign

The Contractor shall provide vertical format conforming to 29 CFR 1926.200, and 29 CFR 1926.1101 minimum 20 by 14 inches displaying the following legend in the lower panel:

LEGEND	NOTATION
Danger	One inch Sans Serif Gothic or Block
Asbestos	One inch Sans Serif Gothic or Block
Cancer and Lung Disease Hazard	1/4 inch Sans Serif Gothic or Block
Authorized Personnel Only	1/4 inch Sans Serif Gothic or Block
Respirators and Protective Clothing are required in this area	1/4 inch Sans Serif Gothic or Block

Spacing between lines shall be at least equal to the height of the upper of any two lines.

1.7.2 Warning Labels

The Contractor shall provide labels conforming to 29 CFR 1926.1101 of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD
BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM

1.8 TOOLS

Vacuums shall be leak proof to the filter and equipped with HEPA filters. Filters on vacuums shall conform to AIHA Z9.2 and UL

586. Do not use power tools to remove asbestos containing materials unless the tool is equipped with effective, integral HEPA filtered exhaust ventilation systems. Remove all residual asbestos from reusable tools prior to storage or reuse.

1.8.1 Rental Equipment

If rental equipment is to be used, furnish written notification to the rental agency concerning the intended use of the equipment and the possibility of asbestos contamination of the equipment.

1.9 ASBESTOS WORK PROCEDURE

The Contractor shall perform asbestos related work in accordance with 29 CFR 1926.1101, 40 CFR 61-SUBPART M, and as specified herein.

The Contractor shall use wet removal procedures with critical barriers, in addition to, wet methods. Use negative pressure enclosure if the asbestos cannot be maintained as non-friable during removal.

The Contractor's personnel shall wear and utilize protective clothing and equipment as specified herein. **Eating, smoking, drinking, chewing gum, tobacco, or applying cosmetics shall not be permitted in the asbestos work or control areas.**

Personnel of other trades not engaged in the removal of asbestos containing material shall not be exposed at any time to airborne concentrations of asbestos unless all the personnel protection and training provisions of this specification are complied with by the trade personnel.

Disconnect electrical service when wet removal is performed and provide temporary electrical service with verifiable ground fault circuit interrupter (GFCI) protection prior to the use of any water or encapsulant.

If an asbestos fiber release or spill occurs outside of the asbestos control area, stop work immediately, correct the

condition to the satisfaction of the DPW Project Manager including Third Party clearance sampling, prior to resumption of work.

1.9.1 Protection of Existing Work to Remain

The Contractor shall perform work without damage or contamination of adjacent work. Where such work is damaged or contaminated as verified by the DPW Project Manager using visual inspection or sample analysis, it shall be restored to its original condition or decontaminated by the Contractor at no expense to the DPW or U of I as deemed appropriate by the DPW Project Manager. This includes inadvertent spill of dirt, dust, or debris in which it is reasonable to conclude that asbestos may exist.

When these spills occur, stop work immediately. Then clean up the spill. When satisfactory visual inspection and air sampling results are obtained from the PQP work may proceed at the discretion of the DPW Project Manager.

1.9.2 Furnishings

Some furniture and equipment may be left inside the rooms which will undergo Asbestos abatement. The Asbestos Abatement Contractor shall clean all remaining furniture and equipment after the abatement has been completed. A visual inspection shall be completed for all cleaned furniture and equipment. If the visual inspection fails, the Asbestos Abatement Contractor shall be required to clean the furniture and equipment again.

1.9.3 Precleaning

If an enclosure is needed, the Contractor shall wet wipe and HEPA vacuum all surfaces potentially contaminated with asbestos prior to the establishment of an enclosure.

1.9.4 Visual Inspection

Prior to removal of plastic barriers and after pre-clearance clean-up of gross contamination, the PQP shall conduct a visual inspection of all areas affected by the removal in accordance with ASTM E1368. Inspect for any visible fibers.

1.9.5 Site Inspection

While performing asbestos engineering control work, the Contractor shall be subject to on-site inspection by the DPW Project Manager who may be assisted by or represented by safety or industrial hygiene personnel. If the work is found to be in violation of this specification, the DPW Project Manager or his representative shall issue a stop work order to be in effect immediately and until the violation is resolved. All related costs including standby time required to resolve the violation shall be at the Contractor's expense.

2.0 METHODS OF COMPLIANCE

2.0.1 Mandated Practices

The specific abatement techniques and items identified shall be detailed in the Contractor's Asbestos Abatement Plan. The Contractor shall use the following engineering controls and work practices in all operations, regardless of the levels of exposure:

a. Vacuum cleaners equipped with HEPA filters.

b. Wet methods or wetting agents except where it can be demonstrated that the use of wet methods is unfeasible due to the creation of electrical hazards, equipment malfunction, and in roofing.

c. Prompt clean-up and disposal.

d. Inspection and repair of polyethylene.

e. Cleaning of equipment and surfaces of containers prior to removing them from the equipment room or area.

2.0.2 Control Methods

The Contractor shall use the following control methods:

a. Local exhaust ventilation equipped with HEPA filter;

b. Enclosure or isolation of processes producing asbestos dust;

c. Where the feasible engineering and work practice controls are not sufficient to reduce employee exposure to or below the PELs, the Contractor shall use them to reduce employee exposure to the lowest levels attainable and shall supplement them by the use of respiratory protection.

2.0.3 HOUSEKEEPING

Essential parts of asbestos dust control are housekeeping and clean-up procedures. The Contractor shall maintain surfaces of the asbestos control area free of accumulations of asbestos fibers. The Contractor shall give meticulous attention to restricting the spread of dust and debris; keep waste from being distributed over the general area. Use HEPA filtered vacuum cleaners.

2.0.4 UNACCEPTABLE PRACTICES

THE USE OF HIGH-SPEED ABRASIVE DISC SAWS THAT ARE NOT EQUIPPED WITH POINT OF CUT VENTILATOR OR ENCLOSURES WITH HEPA FILTERED EXHAUST AIR ARE NOT ALLOWED. THE USE OF COMPRESSED AIR IS NOT ALLOWED. DRY SWEEPING, SHOVELING OR OTHER DRY CLEAN UP ARE NOT ALLOWED. THE USE OF FLOOR TILE REMOVAL/CHIPPING MACHINES ARE NOT ALLOWED. EMPLOYEE ROTATION AS A MEANS OF REDUCING EMPLOYEE EXPOSURE TO ASBESTOS IS NOT ALLOWED.

2.0.5 CLASS II WORK

In addition to the requirements of paragraphs Mandated Practices and Control Methods, the following engineering controls and work practices shall be used:

a. A Competent Person shall supervise the work.

b. For indoor work, critical barriers shall be placed over all openings to the regulated area.

c. Impermeable drop cloths shall be placed on surfaces beneath all removal activity, if appropriate.

2.0.12 SPECIFIC CONTROL METHODS FOR CLASS II WORK

2.0.12.1 VINYL AND ASPHALT FLOORING MATERIALS

When removing vinyl and asphalt flooring materials, which contain ACM and from a building in which ACM has not been verified, the Contractor shall use the following practices.

Resilient sheeting shall be removed by adequately wet methods. Piping shall be removed intact (if possible). Flooring or its backing shall not be sanded. Scraping of residual adhesive and/or backing shall be performed using wet methods. Mechanical

removal/chipping machine is prohibited. Dry sweeping is prohibited. The Contractor shall use vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) to clean floors.

When asbestos removal is complete, all asbestos waste shall be removed from the work-site by the Contractor, and the final clean-up is completed. The final clearance testing shall be run by a Third Party Contractor. After receipt and approval of the results by the DPW Project Manager and DPW Environmental Division Office personnel, the DPW Project Manager shall attest that the area is safe before the signs can be removed. After final clean-up and acceptable airborne concentrations are attained, remove all pre-filters in the critical barrier area, and provide new pre-filters. Dispose of filters as asbestos contaminated materials.

The Contractor shall reestablish HVAC mechanical, and electrical systems in proper working order. The DPW Project Manager shall visually inspect all surfaces within the enclosure for residual material or accumulated dust or debris.

The Contractor shall re-clean all areas showing dust or residual materials. If re-cleaning is required, air sample and establish an acceptable asbestos airborne concentration after re-cleaning. The DPW Project Manager must agree that the area is safe in writing before unrestricted entry will be permitted.

2.0.12.2 REMOVAL OF ACM MASTIC OR ADHESIVE

Removing ACM mastic or adhesive, which remains on the floor once the floor tile has been removed, the Contractor shall use an odorless or low-odor solvent to turn the mastic into a liquid. The Contractor shall not be allowed to dry scrap the ACM mastic or adhesive. The Contractor shall conduct all work practices wet when removing ACM mastic or adhesive.

2.1 DISPOSAL OF ASBESTOS

2.1.1 Procedure for Disposal

The Contractor shall collect asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiber- proof, waterproof, non-returnable containers (e.g. doubled plastic bags 6 mils thick, Department of Transportation (DOT)

cartons, DOT drums or DOT cans). Wastes within the containers must be adequately wet in accordance with 40 CFR 61-SUBPART M.

The Contractor shall place the solvent/ACM mastic combination into DOT containers. The Contractor shall fill each container half full with the solvent/ACM mastic combination. The Contractor shall then place enough dry sweep into each container to turn the liquid in to a solid mass. No free flowing liquid shall be left to remain in each container.

Instead of using a DOT container, the contractor has the option of placing the solvent/ACM mastic combination into special Asbestos clear, see-through plastic bags which are 6 mils in thickness.

The Contractor shall affix a warning and DOT label to each container including the use of 6 mils thick plastic bags with the approved warnings and DOT labeling preprinted on the bag. The name of the waste generator and the location at which the waste was generated shall be clearly indicated on the outside of each container.

The Contractor shall prevent contamination of the transport vehicle (especially if the transport vehicle is a rented truck likely to be used in the future for non-asbestos purposes). These precautions include lining the vehicle cargo area with plastic sheeting (similar to work area enclosure) and thorough cleaning of the cargo area after transport and unloading of asbestos debris is complete.

The Contractor shall dispose of waste asbestos material at an Environmental Protection Agency (EPA) or State-approved asbestos landfill off DPW or U of I property. For temporary storage, store sealed impermeable bags in asbestos waste drums or skids. An area for interim storage of asbestos waste-containing drums or skids will be assigned by the DPW Project Manager or his authorized representative.

Procedure for hauling and disposal shall comply with 40 CFR 61- SUBPART M, State, regional, and local standards. Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried.

Uncontaminated drums may be recycled. Workers unloading the sealed drums shall wear appropriate respirators and personal

protective equipment when handling asbestos materials at the disposal site.

2.2 LANDFILL APPROVAL

Prior to disposal, the Contractor shall submit written evidence that the sanitary landfill will accept the non-friable asbestos special waste. Within 3 working days after delivery, the Contractor shall submit detailed delivery tickets, prepared, signed, and dated by an agent of the landfill, certifying the amount of asbestos materials delivered to the landfill. The Contractor shall submit a copy of the waste shipment paper records within 1 day of the shipment leaving the project site.

2.3 ASBESTOS CONTROL AREA REQUIREMENTS

2.3.1 Negative Pressure Enclosure (NPE)

A Negative Pressure Enclosure is not required for asbestos removal as long as the asbestos remains non-friable. Otherwise, the Contractor shall establish enclosure as described below.

The Contractor shall block and seal openings in areas where the release of airborne asbestos fibers can be expected. The Contractor shall establish an asbestos NPE with the use of curtains, portable partitions, or other enclosures in order to prevent the escape of asbestos fibers from the contaminated asbestos work area.

NPE development shall include protective covering of uncontaminated walls, and ceilings with a continuous membrane of two layers of minimum 6-mil plastic sheet sealed with tape to prevent water or other damage. Provide two layers of 6-mil plastic sheet over floors and extend a minimum of 12 inches up walls. Seal all joints with tape. Provide local exhaust system in the asbestos control area.

The NPE system shall be as shown in the Contractor’s Asbestos Abatement Plan. The system shall provide at least four (4) air changes per hour inside the containment. The local exhaust unit equipment shall be operated 24 hours per day until the containment is removed.

The NPE shall be smoke tested for leaks at the beginning of each shift and be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Pressure differential shall be

monitored continuously, 24 hours per day, with an automatic manometric recording instrument and records shall be provided daily on the same day collected to the Contracting Official. The Contracting Official shall be notified immediately if the pressure differential falls below the prescribed minimum.
The building ventilation system shall not be used as the local exhaust system for the regulated area. The NPE shall terminate outdoors unless an alternate arrangement is allowed by the Contracting Official. All filters used shall be new at the beginning of the project and shall be periodically changed as necessary and disposed of as ACM waste.

2.3.2 ENTRANCE/EGRESS DOOR OPENINGS

Three way plastic door openings shall be used in enclosures of asbestos control areas for personnel and equipment entry and exit, the supply and exhaust of air for the local exhaust system and the removal of properly containerized asbestos containing materials. Replace local exhaust system filters as required to maintain the efficiency of the system.

2.4 REMOVAL PROCEDURES

The Contractor shall wet asbestos material with a fine spray of amended water during removal or other handling so as to reduce the emission of airborne fibers. The Contractor shall remove material and immediately place in 6 mil plastic disposal bags. The Contractor shall remove ACM in a gradual manner, with continuous application of the amended water or wetting agent in such a manner that no asbestos material is disturbed prior to being adequately wetted. Where unusual circumstances prohibit the use of 6 mil plastic bags, the Contractor shall submit an alternate proposal for containment of asbestos fibers to the DPW Project Manager for approval.

ACM shall be containerized while wet. At no time shall ACM be allowed to accumulate or become dry. Lower and otherwise handle asbestos containing material as indicated in 40 CFR 61-SUBPART M.

2.5 AIR SAMPLING

Sampling of airborne concentrations of asbestos fibers shall be performed in accordance with 29 CFR 1926.1101 and as specified herein. Sampling performed in accordance with 29 CFR 1926.1101 shall be performed by the PQP. Sampling performed for environmental and quality control reasons shall be performed by

the PQP. Unless otherwise specified, use NIOSH Method 7400 for sampling and analysis. Monitoring may be duplicated by the DPW or U of I at the discretion of the DPW Project Manager. If the air sampling results obtained by the DPW or U of I differ from those results obtained by the Contractor, the DPW or U of I will determine which results predominate.

2.6 SAMPLING PRIOR TO ASBESTOS WORK

The Contractor's representative shall provide area air sampling and establish the baseline prior to the masking and sealing operations for each removal site. Establish the background by performing area sampling in similar but uncontaminated sites in the building.

2.7 SAMPLING DURING ASBESTOS WORK

The PQP shall provide personal and area sampling as indicated in 29 CFR 1926.1101 and governing environmental regulations. In addition, provided the same type of work is being performed, provide area sampling at least once every work shift close to the work inside the enclosure, outside the clean room entrance to the enclosure, and at the exhaust opening of the local exhaust system.

If sampling outside the enclosure shows airborne levels have exceeded background or 0.01 fibers per cubic centimeter, whichever is greater, stop all work, correct the condition(s) causing the increase, and notify the DPW Project Manager immediately.

2.8 SAMPLING AFTER FINAL CLEAN-UP (THIRD PARTY CLEARANCE SAMPLING)

After the work area has been rendered free of visible residues and inspected, clearance sampling may begin by a Third Party Contractor.

The Phase Contrast Microscopy (PCM) samples shall be tested in accordance to the NIOSH 7400 method. Final air clearance shall not be achieved until all samples taken are equal to or less than 0.01 fibers/cubic centimeter (f/cc).

A copy of the clearance sampling analysis shall be submitted to the Contract Inspector to give to the DPW Environmental Division Office for review and approval prior to any further testing or tear down of the abatement area.

If the clearance sampling results are greater than 0.01 f/cc then the barrier (room) shall be re-cleaned using wet methods and HEPA vacuum(s). Another round of clearance samplings and
re-cleanings shall continue until all samples taken are equal to or less than 0.0.1 f/cc.

2.9 TITLE TO MATERIALS

All waste materials, except as specified otherwise, shall become the property of the Contractor and shall be disposed of as specified in applicable local, State, and Federal regulations and herein.

3.0 DISPOSAL OF ASBESTOS

3.0.1 Procedure for Disposal

The Contractor shall collect asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place in sealed fiber- proof, waterproof, non-returnable containers (e.g. double plastic bags 6 mils thick, DOT cartons, DOT drums or DOT cans). Wastes within the containers must be adequately wet in accordance with 40 CFR 61-SUBPART M.

The Contractor shall properly dispose of all Non-Friable ACM floor tile in an approved Sanitary Landfill which knowingly accepts ACM. All disposal costs shall be the responsibility of Contractor.

Sealed plastic bags may be dumped from drums into the burial site unless the bags have been broken or damaged. Damaged bags shall remain in the drum and the entire contaminated drum shall be buried. Uncontaminated drums may be recycled. Workers unloading the sealed drums shall wear appropriate respirators

and personal protective equipment when handling asbestos materials at the disposal site.

3.1 ASBESTOS WASTE SHIPMENT REPORT

The Contractor shall notify the Sanitary Landfill and inform the Sanitary Landfill that the Contractor shall be placing ACM in the designated Asbestos special waste area of the landfill. The Contractor shall attain a Waste Shipment Record from the Sanitary Landfill for each load of ACM placed in the landfill and turn in a copy of the signed by the landfill Waste Shipment Record to the Contracting Official.

3.2 SUBMITTALS

The Contractor shall submit to the Contracting Official an Asbestos Abatement Plan prior to the start of this contract for review, comment and final approval.

3.3 PRODUCT DATA

Manufacturer's catalog data for all materials and equipment to be used, including brand name, model, capacity, performance characteristics, test results, certificates and any other pertinent information. Safety Data Sheets for all chemicals to be used onsite in the same format as implemented in the Contractor's HAZARD COMMUNICATION PROGRAM. Data shall include, but shall not be limited to, the following items:

a. High Efficiency Filtered Air (HEPA) local exhaust equipment

b. Vacuum cleaning equipment

c. Pressure differential monitor for HEPA local exhaust equipment

d. Air monitoring equipment

e. Respirators

f. Personal protective clothing and equipment

g. Duct Tape

h. Disposal Containers

i. Plastic Sheeting

j. Wetting Agent

k. Strippable Coating

l. Prefabricated Decontamination Unit

m. Safety Data Sheets (for all chemicals proposed).

3.4 QUALIFICATIONS

The Contractor shall provide a written report citing evidence of qualifications for personnel, facilities and equipment assigned to the work.

3.5 TRAINING PROGRAM

The Contractor shall provide a copy of the written project site- specific training material as indicated in 29 CFR 1926.1101 that will be used to train onsite employees.

3.6 LICENSES, PERMITS, AND NOTIFICATION.

Licenses, permits, and notifications.

3.7 TEST REPORTS

3.7.1 Exposure Assessment and Air Monitoring.

The Contractor shall provide all initial exposure assessments, negative exposure assessments, air-monitoring clearance test results and documentation.

3.8 CERTIFICATES

3.8.1 Local Exhaust System

Manufacturer's certifications showing compliance with ANSI Z9.2 for:

a. Vacuums.

b. Water filtration equipment.

c. Ventilation equipment.

d. Other equipment required to contain airborne asbestos fibers.

3.8.2 Medical Surveillance Requirements

The Contractor shall provide the required medical certification and the Physician's written opinion for his employees.