ALL CONSTRUCTION COMPANY
ADDENDUM

ADDENDUM NO.: **04**

PROJECT NAME: 1819 W. Pershing Renovation (Pershing Road Center Building)

PBC PROJECT NO.: 04026

BID PACKAGE NO.: Bid Package #1

DATE OF ISSUE: **12.16.22**

NOTICE OF CHANGES, MODIFICATIONS, OR CLARIFICATIONS TO CONTRACT DOCUMENTS

The following changes, modifications, or clarifications are hereby incorporated and made an integral part of the Contract Documents. Unless clearly expressed otherwise by this Addendum, all terms and conditions defined in the original Contract Documents shall continue in full force and effect and shall have the same meaning in this Addendum.

ITEM NO. 1: **CHANGE TO KEY DATES**

None.

ITEM NO. 2: **REVISIONS TO BOOK 1, INSTRUCTIONS TO BIDDERS**

Change 1 **REMOVE** Exhibit VI schedule and **REPLACE** with **REVISED** Exhibit VI schedule included in this Addendum No. 4.

Change 2 **REMOVE** all References to Project Manager Keith Johnston and **REPLACE** with Project Manager Shawn Perkins. The SOLE POINT of contact regarding this Procurement is now Shawn Perkins at sperkins@ALLConstructionGroup.com. Phone (312) 965-8338.

ITEM NO. 3: **REVISIONS TO BOOK 2**

None.

ITEM NO. 4: **REVISIONS TO BOOK 3, TECHNICAL SPECIFICATIONS**

Change 1 **Book 3 – Technical Specifications – ADDED** Specification Sections Listed Below

- DIVISION 02 - EXISTING CONDITIONS

02 24 01	ENVIRONMENTAL SCOPE SHEET • LIMITED ACM AND LBP SURVEY REPORT DATED OCTOBER 28,2022 • LIMITED ACM AND LBP SURVEY REPORT DATED NOVEMBER 22,23, & 28, 2022
02 41 19	SELECTIVE DEMOLITION
02 82 00	ASBESTOS ABATEMENT SPECIFICATION
02 83 00	LEAD-BASED PAINT ABATEMENT/MITIGATION
02 86 13	HAZARDOUS AND UNIVERSAL WASTE MANAGEMENT

Change 2 **Book 3 – Technical Specifications – REVISED** Specification Sections Listed Below

01 56 11	GENERAL DUST FURNACE AND ODOR CONTROLS
21 13 00	FIRE SUPPRESSION SPRINKLER SYSTEM

ITEM NO. 5: CHANGES TO DRAWING SHEETS

CHANGE 1	**NEW** ENV-101 ASBESTOS ABATEMENT PLAN – FIRST FLOOR
CHANGE 2	**NEW** ENV-102 ASBESTOS ABATEMENT PLAN – SECOND FLOOR
CHANGE 3	**NEW** ENV-103 ASBESTOS ABATEMENT PLAN – FOURTH FLOOR
CHANGE 4	**NEW** ENV-104 ASBESTOS ABATEMENT PLAN – FIFTH FLOOR

ITEM NO. 6: REQUESTS FOR INFORMATION

1. **(Question) Previous RFI response states that walls shown on plans are existing (remaining?) Are we to space sprinklers with respect to the walls or irrespective of walls for future development?**
   - **Response:** Bidders are advised that walls shown on plans are existing and to remain. Contractor to space sprinklers to existing walls as per NFPA 13.

2. **(Question) Specification Section 21 13 00 Fire Sprinkler Systems, Part 2.03.J. states schedule #10 steel pipes with Grooved End can be used for pipes 5 inches and smaller. In contrary, Part 3.04.a.4 states that only 2 1/2 and larger schedule #10 steel pipes can be grooved. May we groove schedule #10 branch line piping that are 2 inches and smaller?**
   - **Response:** Bidders are advised that groove connection is **NOT** allowed for schedule #10 branch line piping 2 inches and smaller per updated Specification section 21 13 00 Fire Suppression Sprinkler Systems, Part 2.03.J, issued as part of Addendum 4.

3. **(Question) Is there any Environmental Abatement work on the third floor?**
   - **Response:** Bidders are advised that while there is no Asbestos Abatement work on the third floor, there is LBP Abatement work on ALL floors as per the Specification Sections included in this addendum No 4.

4. **(Question) Is the Environmental Abatement work to be included in the Demolition work?**
   - **Response:** Bidders are advised to include Environmental Abatement work in their bid as part of Bid Package 1.1 - Demolition.

List of Technical Specifications:
(Available and attached)

a) Insert the following attached specifications sections:

DIVISION 01 – GENERAL CONDITIONS

01 56 11 GENERAL DUST FURNACE AND ODOR CONTROLS

DIVISION 02 - EXISTING CONDITIONS

02 24 01 ENVIRONMENTAL SCOPE SHEET
- LIMITED ACM AND LBP SURVEY REPORT DATED OCTOBER 28,2022
- LIMITED ACM AND LBP SURVEY REPORT DATED NOVEMBER 22,23, & 28, 2022

02 41 19 SELECTIVE DEMOLITION
02 82 00 ASBESTOS ABATEMENT SPECIFICATION
02 83 00 LEAD-BASED PAINT ABATEMENT/MITIGATION
02 86 13 HAZARDOUS AND UNIVERSAL WASTE MANAGEMENT

DIVISION 21 – FIRE SUPPRESSION

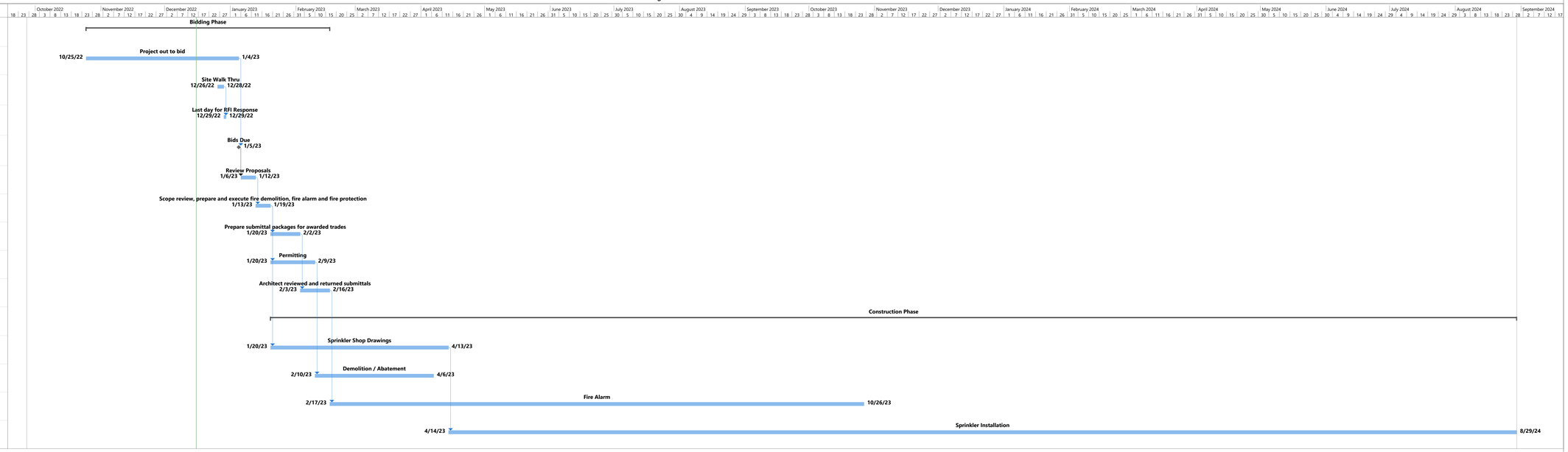
21 13 00 FIRE-SUPPESSION SPRINKLER SYSTEMS

b) This Addendum includes the following attached Sheets with modifications:

ENV-101 ASBESTOS ABATEMENT PLAN – FIRST FLOOR
a) Insert new sheet
ENV-102 ASBESTOS ABATEMENT PLAN – SECOND FLOOR
a) Insert new sheet
ENV-103 ASBESTOS ABATEMENT PLAN – FOURTH FLOOR
a) Insert new sheet
ENV-104 ASBESTOS ABATEMENT PLAN – FIFTH FLOOR
a) Insert new sheet

END OF ADDENDUM NO. 04

ID	Task Name	Duration	Start	Finish
1	**Bidding Phase**	**83 days**	**Tue 10/25/22**	**Thu 2/16/23**
2	Project out to bid	52 days	Tue 10/25/22	Wed 1/4/23
3	Site Walk Thru	3 days	Mon 12/26/22	Wed 12/28/22
4	Last day for RFI Response	1 day	Thu 12/29/22	Thu 12/29/22
5	Bids Due	0 days	Thu 1/5/23	Thu 1/5/23
6	Review Proposals	5 days	Fri 1/6/23	Thu 1/12/23
7	Scope review, prepare and execute fire demolition, fire alarm and fire protection	5 days	Fri 1/13/23	Thu 1/19/23
8	Prepare submittal packages for awarded trades	10 days	Fri 1/20/23	Thu 2/2/23
9	Permitting	3 wks	Fri 1/20/23	Thu 2/9/23
10	Architect reviewed and returned submittals	10 days	Fri 2/3/23	Thu 2/16/23
11	***Construction Phase***	***420 days***	***Fri 1/20/23***	***Thu 8/29/24***
12	Sprinkler Shop Drawings	3 mons	Fri 1/20/23	Thu 4/13/23
13	Demolition / Abatement	2 mons	Fri 2/10/23	Thu 4/6/23
14	Fire Alarm	9 mons	Fri 2/17/23	Thu 10/26/23
15	Sprinkler Installation	18 mons	Fri 4/14/23	Thu 8/29/24



SECTION 01 56 11

GENERAL DUST, FUME, AND ODOR CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Dust Control.

B. Fume and Odor Controls.

C. Requirements for VOC-Content-Restricted products.

1.02 PERFORMANCE STANDARD

A. Dust and fume emission control is required to maintain a healthful learning environment for students, maintain good public relations with neighbors and employees, prevent damage, minimize cleaning and maintenance costs, and to comply with regulations and laws. All contractors (including subcontractors, lower-tier subcontractors, and suppliers) who perform work or provide services at Chicago Public School facilities are required to control dust and fume emissions from their operations and/or activities.

B. Controls include the containment or removal of all nuisance or noxious dust, vapors, fumes, odors or emissions caused by construction, demolition, renovation, restoration, or related activities including, but not limited to sawing, cutting, grinding, sanding, abrading, sweeping, crushing, scraping, gluing, prying, plowing, heating, finishing, painting, welding, torch cutting or burning, or any other related processes that can create noxious dust, fumes or odors.

C. No visible emissions or unreasonable odors shall be permitted outside the work area.

1.03 DEFINITIONS

A. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

B. CDPH: Chicago Department of Public Health

C. HEPA Filter: High Efficiency Particulate Air filter capable of trapping 99.97% percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.

D. IDPH: Illinois Department of Public Health.

E. Interior of Building: Anywhere inside the exterior weather barrier.

F. MEC: Managing Environmental Consultant. Entity engaged by the Board responsible for the design of environmental work, maintenance of related documents, and conducting oversight and review of the environmental work, submittals, and reports.

G. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

H. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:

1. Interior paints and coatings.
2. Interior adhesives and sealants, including flooring adhesives.
3. Wet-applied roofing and waterproofing.
4. Other products when specifically stated in the specifications.

1.04 REFERENCE STANDARDS

A. 29 CFR 1910 - Occupational Safety and Health Standards; current edition.

B. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

C. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

D. 40 CFR 61 - National Emission Standards For Hazardous Air Pollutants; U.S. Environmental Protection Agency; current edition.

E. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings; 2005 (Reapproved 2013).

F. Chicago Building Code; current edition

G. SCAQMD 1113 - Architectural Coatings; 1977 (Amended 2016).

H. SCAQMD 1168 - Adhesive and Sealant Applications; 1989 (Amended 2017).

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

C. SDS: For all products used that could potentially emit dusts, fumes, vapors or odors, etc. shall be submitted to the Project Environmental Coordinator, MEC, and/or Board's Representative for approval prior to the use of the product.

1.06 QUALITY ASSURANCE

A. Contractor is responsible for compliance with all applicable federal, state, county and municipal laws, regulations and ordinances including, but not limited to, those listed below, which are incorporated by reference.
1. 29 CFR 1910
2. 29 CFR 1926
3. 40 CFR Part 61
4. Chicago Building Code: 11-4-2170: Demolition and renovation safeguards.
5. Chicago Building Code: 11-4-2190: Sandblasting, grinding and chemical washing of buildings, facilities or other structures - Dust minimization--Containment, wetting or vacuuming; plan required.

B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
1. Evidence of Compliance: Acceptable types of evidence are:
   a. Report of laboratory testing performed in accordance with requirements.
   b. Published product data showing compliance with requirements.

c. Certification by manufacturer that product complies with requirements.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.

B. VOC-Content-Restricted Products: VOC content not greater than required by the following:
1. Adhesives and Sealants, Including Flooring Adhesives: SCAQMD 1168 Rule.
   a. Wood Glues: 30 g/L.
   b. Metal to Metal Adhesives: 30 g/L.
   c. Adhesives for Porous Materials (Except Wood): 50 g/L.
   d. Subfloor Adhesives: 50 g/L.
   e. Plastic Foam Adhesives: 50 g/L.
   f. Carpet Adhesives: 50 g/L.
   g. Carpet Pad Adhesives: 50 g/L.
   h. VCT and Asphalt Tile Adhesives: 50 g/L.
   i. Cove Base Adhesives: 50 g/L.
   j. Gypsum Board and Panel Adhesives: 50 g/L.
   k. Rubber Floor Adhesives: 60 g/L.
   l. Ceramic Tile Adhesives: 65 g/L.
   m. Multipurpose Construction Adhesives: 70 g/L.
   n. Fiberglass Adhesives: 80 g/L.
   o. Contact Adhesive: 80 g/L.
   p. Structural Glazing Adhesives: 100 g/L.
   q. Wood Flooring Adhesive: 100 g/L.
   r. Structural Wood Member Adhesive: 140 g/L.
   s. Special Purpose Contact Adhesive (contact adhesive that is used to bond melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
   t. Top and Trim Adhesive: 250 g/L.
   u. Plastic Cement Welding Compounds: 350 g/L.
   v. ABS Welding Compounds: 400 g/L.
   w. CPVC Welding Compounds: 490 g/L.
   x. PVC Welding Compounds: 510 g/L.
   y. Adhesive Primer for Plastic: 650 g/L.
   z. Sheet Applied Rubber Lining Adhesive: 850 g/L.
   aa. Aerosol Adhesive, General Purpose Mist Spray: 65 percent by weight.
   bb. Aerosol Adhesive, General Purpose Web Spray: 55 percent by weight.
   cc. Special Purpose Aerosol Adhesive (All Types): 70 percent by weight.
   dd. Other Adhesives: 250 g/L.
   ee. Architectural Sealants: 250 g/L.
   ff. Non-membrane Roof Sealants: 300 g/L.
   gg. Single-Ply Roof Membrane Sealants: 450 g/L.
   hh. Other Sealants: 420 g/L.
   ii. Sealant Primers for Nonporous Substrates: 250 g/L.
   jj. Sealant Primers for Porous Substrates: 775 g/L.
   kk. Modified Bituminous Sealant Primers: 500 g/L.
   ll. Other Sealant Primers: 750 g/L.

2. Paints and Coatings: SCAQMD 1113 Each color; most stringent of the following:
   a. Flat Paints and Coatings: VOC not more than 50 g/L.
   b. Nonflat Paints and Coatings: VOC not more than 150 g/L.
   c. Primers: VOC not more than 50 g/L.
   d. Anti-corrosive and Anti-rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
   e. Clear Wood Finishes, Varnishes: VOC not more than 350 g/L.
   f. Clear Wood Finishes, Lacquers: VOC not more than 550 g/L.
   g. Floor Coatings: VOC not more than 100 g/L.
   h. Shellacs, Clear: VOC not more than 730 g/L.
   i. Shellacs, Pigmented: VOC not more than 550 g/L.
   j. Stains: VOC not more than 250 g/L.
3. Wet-Applied Roofing and Waterproofing: Comply with requirements for paints and coatings.
4. Composite Wood and Agrifiber Products: May not contain urea-formaldehyde resin.

PART 3 - EXECUTION

3.01 BARRIERS OR WORK AREA ISOLATION

A. Contractor shall prevent the spread of dust, fumes and odors from their immediate work areas by:
   1. Erecting dust-tight barriers between indoor work areas and adjacent occupied areas. Construction barriers may be used for this purpose if suitably constructed to prevent dust, fume or odor migration.
   2. Closing and or covering windows, intake vents, louvers, or other building openings in the immediate vicinity of outdoor work, sufficient to prevent dust, fume or odor migration into the building interior. If such openings cannot be adequately sealed by closing, then poly sheeting, tape, or other impermeable covers shall be used.
   3. The Contractor shall provide a filtered, local exhaust system for the isolated work area.

B. Contractor is prohibited from creating other hazardous or uncomfortable conditions for building occupants, such as very hot, humid, cold, or other conditions created by ventilation system alterations or blockages, closed or open windows in hot or cold weather conditions.

C. Contractor is responsible for making itself familiar with building conditions and shall take care to isolate its work area in such a manner that building occupant activities and comfort are not unreasonably disrupted.

3.02 DUST, FUME AND ODOR CONTROL

A. Dust, fume or odor release shall be prevented by a suitable means, including but not limited to:
   1. Tools equipped with shrouds, HEPA filter equipped vacuum pickups.
   2. Alteration, shut down, or isolation of building ventilation systems in the immediate work vicinity.
   3. Shrouding around work activities.
   4. Shrouding stages, scaffolds, or other work platforms.
   5. Local exhaust ventilation systems exhausted to the outside of the building.
   6. Wet work methods.

B. Contractor is responsible for selecting the means and methods it considers most suitable to achieve dust, fume and odor control.

3.03 FIELD QUALITY CONTROL

A. Board reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Board.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

C. In the event that dust or fumes escape from the work area or create dirty conditions or contamination to nearby building spaces or grounds, the Contractor is responsible for all costs associated with the cleaning, testing and/or repair deemed necessary by the Board's Representative.

END OF SECTION 01 56 11

SECTION 02 24 01
ENVIRONMENTAL SCOPE SHEETS

FACILITY/PROJECT: Center Building Renovation
STREET ADDRESS: 1819 W Pershing Road
PBCC PROJECT NO: 04206

DATE OF DOCUMENTS: December 15, 2022
ENVIRONMENTAL CONSULTANT: Carnow Conibear & Assoc., Ltd.
EC PROJECT NO: A12834W001

ROOM ID/NAME: 1st Floor: Hall by Stair B and Outside Stair D
2nd Floor: Hall by Stair B
4th Floor: Hall by Stair A, Hall by Stair D, and Hall by Stair F
5th Floor: Hall by Stair A and Hall by Stair B

Substrate	Component	Walls				Ceiling	Floor	Response Action	Comments
		N	E	S	W	C	F		
Any	Floor Tile and Mastic installed on Concrete						X	**ASBESTOS ABATEMENT:** Removal and Disposal per specification 02 82 00. See ENV101, ENV102, ENV103, and ENV104 drawings for details	Remove floor tile and floor tile mastic as necessary to allow for floor coring. Abatement Contractor shall be responsible for coordinating with General Contractor and/or associated Trades to determine the exact location and extent of abatement necessary to allow for floor coring.

SECTION 02 24 01
ENVIRONMENTAL SCOPE SHEETS

FACILITY/PROJECT: Center Building Renovation
STREET ADDRESS: 1819 W Pershing Road
PBCC PROJECT NO: 04206

DATE OF DOCUMENTS: December 15, 2022
ENVIRONMENTAL CONSULTANT: Carnow Conibear & Assoc., Ltd.
EC PROJECT NO: A12834W001

ROOM ID/NAME: 1st Floor: Hall by Stair A

Substrate	Component	Walls				Ceiling	Floor	Response Action	Comments
		N	E	S	W	C	F		
Any	Floor Tile, Floor Tile, Mastic, and Wood Substrate						X	**ASBESTOS ABATEMENT:** Removal and Disposal per specification 02 82 00. See ENV101, drawing for details	Remove floor tile, floor tile mastic, and wood substrate as necessary to allow for floor coring. Abatement Contractor shall be responsible for coordinating with General Contractor and/or associated Trades to determine the exact location and extent of abatement necessary to allow for floor coring.

SECTION 02 24 01
ENVIRONMENTAL SCOPE SHEETS

FACILITY/PROJECT: Center Building Renovation
STREET ADDRESS: 1819 W Pershing Road
PBCC PROJECT NO: 04206

DATE OF DOCUMENTS: December 15, 2022
ENVIRONMENTAL CONSULTANT: Carnow Conibear & Assoc., Ltd.
EC PROJECT NO: A12834W001

ROOM ID/NAME: 5th Floor: Hall by Stair F

Substrate	Component	Walls				Ceiling	Floor	Response Action	Comments
		N	E	S	W	C	F		
Any	Concrete type Flooring						X	**ASBESTOS ABATEMENT:** Removal and Disposal per specification 02 82 00. See ENV104 drawing for details	Remove flooring as necessary to allow for floor coring. Abatement Contractor shall be responsible for coordinating with General Contractor and/or associated Trades to determine the exact location and extent of abatement necessary to allow for floor coring.

SECTION 02 24 01
ENVIRONMENTAL SCOPE SHEETS

FACILITY/PROJECT: Center Building Renovation
STREET ADDRESS: 1819 W Pershing Road
PBCC PROJECT NO: 04206

DATE OF DOCUMENTS: December 15, 2022
ENVIRONMENTAL CONSULTANT: Carnow Conibear & Assoc., Ltd.
EC PROJECT NO: A12834W001

ROOM ID/NAME: 6th Floor West Offices

Substrate	Component	Walls				Ceiling	Floor	Response Action	Comments
		N	E	S	W	C	F		
Metal	Beige and Green paint on Sprinkler Pipe	X				X		**LEAD ABATEMENT:** Removal and Disposal per specification 02 83 00.	Remove paint as necessary to allow for sprinkler demolition. Abatement Contractor shall be responsible for coordinating with General Contractor and/or associated Trades to determine the exact location and extent paint required to be removed to allow for sprinkler demolition.

SECTION 02 24 01
ENVIRONMENTAL SCOPE SHEETS

FACILITY/PROJECT: Center Building Renovation
STREET ADDRESS: 1819 W Pershing Road
PBCC PROJECT NO: 04206

DATE OF DOCUMENTS: December 15, 2022
ENVIRONMENTAL CONSULTANT: Carnow Conibear & Assoc., Ltd.
EC PROJECT NO: A12834W001

ROOM ID/NAME: Throughout All Work Areas of the Building

Substrate	Component	Walls				Ceiling	Floor	Response Action	Comments
		N	E	S	W	C	F		
Concrete	Ceiling					X		**LEAD ABATEMENT/ MITIGATION:** Removal and Disposal per specification 02 83 00.	Remove paint as necessary to allow for floor coring and ceiling hangar installations. Abatement Contractor shall be responsible for coordinating with General Contractor and/or associated Trades to determine the exact location and extent paint required to be removed to allow for renovation work impacting ceiling paint.

SECTION 02 24 01
ENVIRONMENTAL SCOPE SHEETS

FACILITY/PROJECT: Center Building Renovation
STREET ADDRESS: 1819 W Pershing Road
PBCC PROJECT NO: 04206

DATE OF DOCUMENTS: December 15, 2022
ENVIRONMENTAL CONSULTANT: Carnow Conibear & Assoc., Ltd.
EC PROJECT NO: A12834W001

ROOM ID/NAME: Throughout Work Areas of Building

Category	Items	Response Action	Comments
Dust, Fumes and Odors	All Work	**Dust, Fume and Odor Control:** The Contractor and all sub-contractors shall be required to protect the adjacent school building during all work activities that will create dust, fumes and odors in accordance with Specification 01 56 11.	Throughout abatement, mitigation, and demolition activities.
PCBs	HID and Fluorescent Light Ballasts	**Hazardous and Universal Waste Removal Management:** Contractor shall be responsible for the safe handling and disposal of any PCB containing light ballasts per Specification 02 86 13.	All light ballasts shall be treated and disposed as PCB containing unless label confirms non-PCB containing.
Mercury	HID Bulbs, Fluorescent Light Bulbs, Gauges and Thermostats	**Hazardous and Universal Waste Removal Management:** Contractor shall be responsible for the safe handling and disposal of any mercury containing bulbs, gauges, thermostats, etc. per Specification 02 86 13.	

Carnow, Conibear & Assoc., Ltd.
Environmental Consulting Services
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www.ccaltd.com

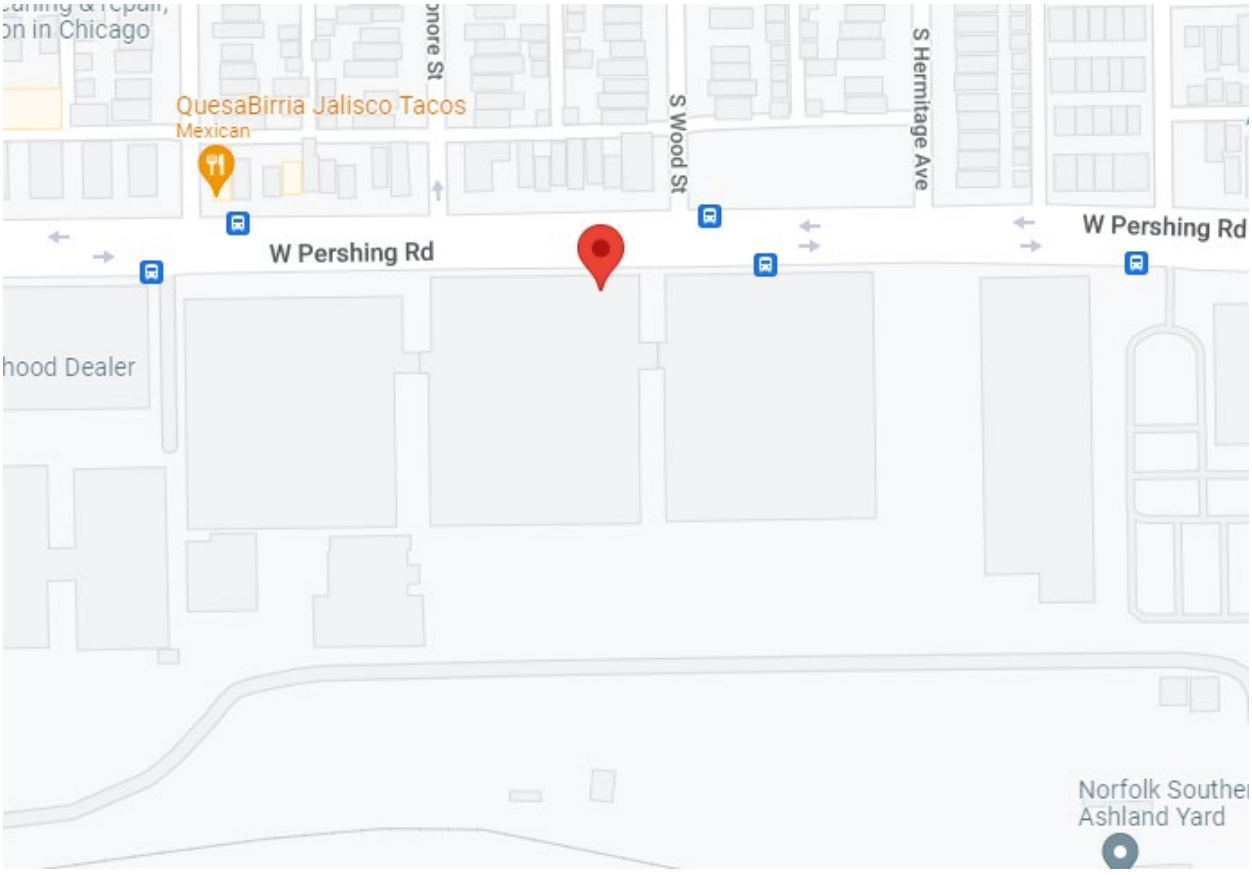
CARNOW CONIBEAR

Limited Asbestos-Containing Material and Lead-Based Paint Survey Report

Site: **Pershing Road West Building**
1819 W. Pershing Road
Chicago, IL 60609

Survey Date: **October 28, 2022**

Project No.: **E12823X011**

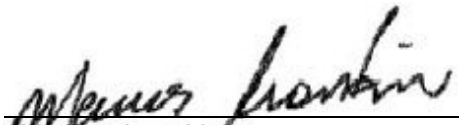


Prepared for: ***Public Building Commission of Chicago***
Richard J. Daley Center, Room 200
50 West Washington Street
Chicago, Illinois 60602

Limited Asbestos-Containing Material and Lead-Based Paint Survey Report

Site: **Pershing Road West Building Tunnels**
1819 W. Pershing Road
Chicago, IL 60609

Inspection by:



Marcos Iwankiw
Asbestos Building Inspector (IDPH License No. 100-03175)
Lead Inspector (IDPH License No. 100-1199)

Report by:

Derek Lantry
Director, Technical Services

Report Issued: November 11, 2022

CARNOW CONIBEAR

TABLE OF CONTENTS

CARNOW CONIBEAR

1.0 EXECUTIVE SUMMARY

Carnow, Conibear & Assoc., Ltd. (Carnow Conibear) was requested by Public Building Commission of Chicago (PBCC) to perform an asbestos-containing material survey and lead-based paint survey at the Pershing Road Building located at 1819 W. Pershing Road, in Chicago, Illinois. The survey and sampling were limited to accessible areas on portions of the 5th and 6th floors of the building as requested by PBCC.

Asbestos Survey
The asbestos survey was conducted in phases. The first phase included a review of available historical asbestos related documentation. The second phase included a visual inspection of interior and exterior building areas to identify accessible, suspect asbestos-containing materials, collect representative samples from each suspect material, analyze samples for the presence of asbestos, and to quantify each confirmed asbestos-containing material.

The asbestos-containing materials identified include:

- Pipe Fitting Insulation associated with Fiberglass Insulated Pipe Runs – observed in an intact condition at the West Side of the 5th Floor.
- 12”x12” Beige Floor Tile and associated Mastic - observed in an intact condition at the West Side of the 5th Floor. Floor tiles observed delaminating in various 5th floor locations.

Lead-Based Paint Survey
The lead-based paint survey consisted of visually inspecting the painted survey areas to determine representative paint histories and collecting measurements utilizing an X-ray fluorescence (XRF) spectrum analyzer. The lead-based paint testing was limited to major building components and locations with damaged or peeling paint in the surveyed 5th and 6th floor areas. The limited lead-based paint sampling assessed for lead-based paint in the survey areas as defined by the Department of Housing and Urban Development (HUD).

The lead painted components identified at the subject site include:

- Green paint on concrete column at the West end of the 6th Floor. Observed in a deteriorated condition.
- Green paint on metal sprinkler line at the West end of the 6th Floor. Observed in a deteriorated condition.
- Beige paint on metal 3” sprinkler line at the West end of the 6th Floor. Observed in a deteriorated condition.
- Beige paint on metal sprinkler line at the West end of the 6th Floor. Observed in a deteriorated condition.
- Gray paint on concrete column at the East end of the 5th Floor. Observed in a deteriorated condition.
- Gray paint on brick walls at the East end of the 5th Floor. Observed in a deteriorated condition.

Carnow Conibear recommends incorporating this information into future renovation documents regarding the presence and location of asbestos-containing materials and lead-based paint. All asbestos and/or lead abatement activities shall be conducted by a licensed contractor in accordance with the Illinois Department of Public Health (IDPH), USEPA National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and Occupational Safety and Health

Administration (OSHA) regulations and requirements. All renovation/demolition work shall be performed in accordance with the requirements of OSHA's Safety and Health Regulations for Construction (29 CFR 1910 Subpart H) and all applicable local, state, and federal rules and regulations.

2.0 INTRODUCTION

Carnow, Conibear & Assoc., Ltd. (Carnow Conibear) was requested by Public Building Commission of Chicago (PBCC) to perform an asbestos-containing material survey and lead-based paint sampling at the Pershing Road Building located at 1819 W. Pershing Road, in Chicago, Illinois. The survey and sampling were limited to accessible areas on portions of the 5th and 6th floors of the building as requested by PBCC. Surveys were conducted October 28, 2022, by Carnow Conibear representative Mr. Marcos Iwankiw. See Appendix A for a copy of inspector licenses and certificates.

2.1 Objective

2.1.1 Asbestos Containing Material Survey

The objective of the asbestos survey was to identify the location of asbestos-containing materials within the requested areas on the interior of the Pershing Road Building, in Chicago, Illinois. To achieve this objective, the following procedures were performed:

- Historical Document Review – to gain an understanding of previous asbestos activities and locate structural, electrical, and mechanical elements of the building.
- Visual Inspection – to determine the location of suspect materials.
- Bulk Sampling – samples are taken in random locations, to provide representative sampling for each suspect material.
- Sample Analysis – to determine the type and percent of asbestos in the material.
- Reporting – to prepare a summary report documenting the inspection findings and providing recommendations as warranted.

Because a destructive survey was not performed, the possibility exists that some asbestos-containing materials were not included in this survey if they were concealed behind walls and/or ceilings, within inaccessible pipe chases, or had restricted access. However, Carnow Conibear made every reasonable effort to locate hidden mechanical systems or other inconspicuous materials despite constraints.

2.2.2 Lead-Based Paint Survey

The objective of the lead-based paint survey was to identify painted building components to determine the existence, condition, and location of lead-based paint as defined by HUD. To achieve this objective, the following procedures were performed:

- Visual Inspection – to determine location of painted surfaces.
- Sampling – paint sampling to determine the presence.
- Reporting – to prepare a summary report documenting the inspection findings.

3.0 SITE INSPECTION

3.1 Asbestos-Containing Material Survey

3.1.1 Historical Document Review

Available building construction documents including the previous sampling reports were reviewed to gain an understanding of previous asbestos activities and locate basic building systems.

3.1.2 Asbestos Survey Methodology

The asbestos survey consisted of several phases. The first phase of the survey consisted of the historic document review. Next, a walkthrough inspection of the subject site to identify homogeneous areas (materials which are uniform in composition throughout) and to assess material condition was conducted. The final phase of the survey consisted of collecting representative bulk samples from the suspected asbestos-containing materials.

3.1.3 Suspect Asbestos Containing Material Sample Collection

All bulk samples were collected based on methods described in USEPA guidelines. The samples were collected and stored in sample bags with a unique sample identification number prior to delivery to STAT Analysis Corporation (STAT), Chicago, IL for analysis. A chain of custody (COC) form was signed and dated by the inspector, the delivering representative, and the laboratory representative who received the samples.

3.1.4 Asbestos Sample Analysis

STAT's laboratory is accredited for bulk asbestos fiber analysis by the National Voluntary Laboratory Accreditation Program (NVLAP) through the National Institute of Standards and Technology (NIST). STAT utilized dispersion staining and polarized light microscopy (PLM) techniques for analyzing the samples consistent with National Institute for Occupational Safety and Health (NIOSH) methods. PLM is the EPA's recognized method for determining bulk asbestos content.

The results of the laboratory analysis revealed the presence of asbestos-containing materials. Table I summarizes the results of the bulk sample analysis, material description, location, and estimated quantity. See Appendix B for approximate locations of all identified asbestos materials and Appendix B for the bulk sample laboratory report and chain of custody documentation.

Table I – Summary of Limited Asbestos Survey

Pershing Road Building
1819 W. Pershing Rd., Chicago, Illinois

SAMPLE ID	MATERIAL DESCRIPTION	MATERIAL LOCATION	LABORATORY RESULT	COMMENT
MI102622-01 MI102622-02 MI102622-03	12"x12" Beige Floor Tile	5th Floor: West Side	1-5% Chrysotile Asbestos	Beneath Carpet

Table I – Summary of Limited Asbestos Survey

Pershing Road Building
1819 W. Pershing Rd., Chicago, Illinois

SAMPLE ID	MATERIAL DESCRIPTION	MATERIAL LOCATION	LABORATORY RESULT	COMMENT
MI102622-04 MI102622-05 MI102622-06	**Mastic associated with 12"x12" Beige Floor Tile**	**5th Floor: West Side**	**1-5% Chrysotile Asbestos**	
MI102622-07 MI102622-08 MI102622-09	Carpet Mastic	5th Floor: West Side	No Asbestos Detected (None Present)	
MI102622-10 MI102622-11 MI102622-12	12"x12" Light Brown Floor Tile	5th Floor: East Side	No Asbestos Detected (None Present)	
MI102622-13 MI102622-14 MI102622-15	Mastic associated with 12"x12" Light Brown Floor Tile	5th Floor: East Side	No Asbestos Detected (None Present)	
MI102622-16 MI102622-17 **MI102622-18**	**Pipe Fitting Insulation associated with Fiberglass Insulated Pipe Run**	**5th Floor: West Side**	**1-5% Chrysotile Asbestos**	
MI102622-19 MI102622-20 MI102622-21	2'x2' Ceiling Tile -	5th Floor: Throughout	No Asbestos Detected (None Present)	

IDPH and EPA define an asbestos-containing material as any material containing greater than 1 percent asbestos.
Bold indicates greater than 1% ACM.
Locations are provided for reference only. Materials may exist in other areas not noted.

3.2 Lead-Based Paint Survey

3.2.1 Lead-Based Paint Survey Methodology

The lead-based paint survey consisted of visually inspecting the painted surfaces within the surveyed areas to determine representative paint histories and to collect random samples utilizing an X-ray fluorescence (XRF) spectrum analyzer. The lead-based paint testing was limited to major building components and locations with damaged or peeling paint only. Sampling of suspect lead-based paint (LBP) components and/or surfaces was conducted following the U.S. Department of Housing and Urban Development (HUD) guidelines of June 1995 for single family housing, Chapter 7, Lead Based Paint Inspection, 1997 Revision, and the EPA and HUD's Performance Characteristics Sheet for the RMD LPA-1 XRF lead paint analysis system. There may be materials that were not identified, because they were located in inaccessible areas and not available at the time of inspection.

Paint sampling was conducted utilizing an X-Ray Fluorescence spectrum analyzer (XRF) that uses a Cobalt 57 (^{57}Co) radioactive source and an advanced, solid-state radiation detector to generate an X-Ray fluorescence spectrum of a painted surface. The spectrum is then analyzed by a microprocessor to eliminate the effects of substrate and other factors such as scattering to allow an accurate determination of the amount of lead on a surface.

Portable XRF lead-based paint analyzers are the most common method for inspections in buildings, because of their accuracy, high speed, and ability to measure lead in paint without destructive sampling.

Table II identifies the lead painted components and/or surfaces as defined by HUD. See Appendix C for a complete testing log of all XRF measurements collected for this survey.

Table II – Summary of Lead-Based Paint Survey

Pershing Road West Building Tunnels
1819 W. Pershing Rd., Chicago, Illinois

LOCATION	COMPONENT	SUBSTRATE	COLOR	CONDITION	RESULT (mg/cm^2)
6th Floor: West End (Open Space)	Column	Concrete	Green	Deteriorated	6.7
6th Floor: West End (Open Space)	Sprinkler Line	Metal	Green	Deteriorated	7.9
6th Floor: West End (Open Space)	3” Sprinkler Line	Metal	Beige	Deteriorated	17.0
6th Floor: West End (Open Space)	Sprinkler Line	Metal	Beige	Deteriorated	4.9
5th Floor: East End	Column	Concrete	Gray	Deteriorated	2.7
5th Floor: East End	Wall	Brick	Gray	Deteriorated	2.4

Painted surfaces which indicate a concentration of 1.0 mg/cm^2 or greater are lead-based paint as defined by HUD.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Carnow, Conibear & Assoc., Ltd. (Carnow Conibear) was retained by the Public Building Commission of Chicago to perform an asbestos-containing material survey and lead-based paint sampling at the Pershing Building located in Chicago, Illinois. The survey and sampling were limited to accessible areas on portions of the 5th and 6th floors of the building as requested by PBCC.

Based on the survey results, Carnow Conibear offers the following conclusions:

- The *asbestos-containing materials* identified in the project area include:
  - Pipe Fitting Insulation associated with Fiberglass Insulated Pipe Runs – observed in an intact condition of the West Side of the 5th Floor.
  - 12”x12” Beige Floor Tile and associated Mastic - observed in an intact condition of the West Side of the 5th Floor. Floor tiles observed delaminating in various 5th floor locations.

- The *lead painted components* identified in the project area include:
  - Green paint on concrete column at the West end of the 6th Floor. Observed in a deteriorated condition.
  - Green paint on metal sprinkler line at the West end of the 6th Floor. Observed in a deteriorated condition.
  - Beige paint on metal 3” sprinkler line at the West end of the 6th Floor. Observed in a deteriorated condition.
  - Beige paint on metal sprinkler line at the West end of the 6th Floor. Observed in a deteriorated condition.
  - Gray paint on concrete column at the East end of the 5th Floor. Observed in a deteriorated condition.
  - Gray paint on brick walls at the East end of the 5th Floor. Observed in a deteriorated condition.

- Incorporate the data from this report into future renovation documents regarding the presence of asbestos-containing materials and lead-based paint.

- All future asbestos-containing material and lead-based paint removal and/or demolition/renovation work shall be conducted by a licensed contractor in accordance with IDPH, NESHAPS, IEPA, and OSHA regulations and requirements.

- Dispose of all asbestos-containing and lead-based paint in accordance with all applicable local, state, and federal regulations.

Carnow Conibear has applied prevailing industry standards and reasonable judgment and effort within the scope of work outlined in Carnow Conibear’s proposal, while conducting the asbestos-containing material and lead-based paint survey and sampling. The standards, judgment, and effort used by Carnow Conibear personnel to investigate, assess, and determine the presence of potential environmental hazards and liabilities associated with the subject building are consistent with requirements outlined in federal and state guidelines. Carnow Conibear makes no warranty, express or implied, that the findings and interpretations in this report are a complete representation hazards and liabilities, associated with the building. Findings presented in this report are only indicative of conditions present during the time of the

investigation and cannot be used to predict potential future or previous health effects on building occupants. The services performed by Carnow Conibear on this project have been conducted in a professional manner consistent with industry standards at the time of testing. There may be materials that were not identified, because they were located in inaccessible areas and not available at the time of inspection. Carnow Conibear made every reasonable effort to locate mechanical systems and other inconspicuous materials.

The information contained in this report was prepared based upon specific test parameters requested by the Public Building Commission of Chicago and regulations in force at the time of the report. The information herein is only for the specific use of the Public Building Commission of Chicago and Carnow Conibear. Carnow Conibear accepts no responsibility for the use, reuse, interpretation, or reliance by other parties on the information contained herein, unless written authorization has been obtained from Carnow Conibear. Carnow Conibear bears no responsibility for the implementation of recommendations included in this report unless specifically requested to do so by the Public Building Commission of Chicago.

APPENDIX A

Inspector Licenses and Certificates

IDPH
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • www.dph.il

MARCOS IWANKIW
600 W. VAN BUREN ST., STE 500
CHICAGO, IL 60607

4/15/2022

ASBESTOS PROFESSIONAL LICENSE ID NUMBER: 03175

Enclosed is your Asbestos Professional License. Please note the expiration date on the card and i
depicted below.

COPY OF THE ASBESTOS PROFESSIONAL LICENSE

Front of License

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
IDPH
PROTECTING HEALTH, IMPROVING LIVES

ASBESTOS PROFESSIONAL LICENSE

ID NUMBER	ISSUED	EXPIRES
100 - 03175	**4/15/2022**	05/15/2023

MARCOS IWANKIW
600 W. VAN BUREN ST., STE 5
CHICAGO, IL 60607
Environmental Health

Back of License

ENDORSEMENTS	TC EXPIRES
INSPECTOR	10/8/2022
PROJECT MANAGER	3/2/2023
AIR SAMPLING PROFESSIONAL	

Alteration of this license shall result in legal action
This license issued under authority of the State of Illinois Department of Public Health
This license is valid only when accompanied by a valid training course certificate.

If you have any questions or need further assistance, contact the Asbestos Program at (217)782-3
(217)785-5897.

Our WEB address is: dph.illinois.gov/topics-services/environmental-health-protection/asbestos
EMAIL Address: dph.asbestos@illinois.gov

IDPH

ASBESTOS PROFESSIONAL LICENSE

ID NUMBER	ISSUED	EXPIRES
100 - 03175	4/15/2022	05/15/2023

MARCOS IWANKIW
600 W. VAN BUREN ST., STE 5
CHICAGO, IL 60607

Environmental Health

ENDORSEMENTS	TC EXPIRES
INSPECTOR	10/8/2022
PROJECT MANAGER	3/2/2023
AIR SAMPLING PROFESSIONAL	

Alteration of this license shall result in legal action

This license issued under authority of the State of Illinois Department of Public Health

This license is valid only when accompanied by a valid training course certificate.

7233 S. Adams Street | Willowbrook, IL 60527
(630) 655-3900 | www.otssafety.com

2022

OCCUPATIONAL TRAINING & SUPPLY, INC.

Asbestos Building Inspector Refresher

Occupational Training & Supply, Inc. certifies that

Marcos Iwankiw

has successfully completed the Asbestos Building Inspector Refresher course and has passed the competency exam with a minimum score of 70%. The course is accredited by the Illinois Department of Public Health and Indiana Department of Environmental Management for purposes of accreditation in accordance with EPA 40 CFR 763, Asbestos Hazard Emergency response Act (AHERA) and TSCA Title II.

Course Date: 10/7/2022

Exam Date: 10/7/2022

Expiration Date: 10/7/2023

Certificate Number: BIR2210073199

Kathy DeSalvo, Director

IDPH
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • www.dph.illinois.gov

1/10/2022

LICENSE NUMBER: 001199
Marcos Iwankiw
600 W. Van Buren Street, Suite 500
Chicago, IL 60607

LICENSE APPROVED

IDPH recently received and reviewed your application for lead licensure. Your qualifications have been reviewed and found that you meet the requirements set forth by the Lead Poisoning Prevention Code, Section 845.125. Therefore, your application for lead licensure is now complete. Enclosed please find your lead license card. Please have this identification card with you at all times while conducting lead abatement activities.

IDPH has updated its 7 – Day Notice of Commencement effective immediately. The revised document can be identified by its 9/16 revision date on the bottom left corner. Please discontinue using the old form and begin using the new form as soon as possible. The revised form is located in the same web address that the old form was located (http://www.dph.illinois.gov/sites/default/files/forms/7-day-notice-leadabatement-mitigation-project-091916.pdf).

IDPH

LEAD RISK ASSESSOR LICENSE

LEAD ID	ISSUED	EXPIRES
001199	1/10/2022	1/31/2023

Marcos Iwankiw
600 W. Van Buren Street, Suite 5
Chicago, IL 60607

ILLINOIS LEAD PROGRAM
Environmental Health

Alteration of this license shall result in legal action

RISK ASSESSOR CERTIFICATE EXPIRES

11/15/2022

This license issued under authority of the State of Illinois -Department of Public Health

This license is valid only when accompanied by a valid training course certificate

If found return to 525 W.Jefferson St Springfield, IL 62761

2019

OCCUPATIONAL TRAINING & SUPPLY, INC.

7233 S. Adams Street ♦ Willowbrook, IL 60527 ♦ (630) 655-3900 ♦ www.otssafety.com

Lead Risk Assessor Refresher

Occupational Training & Supply, Inc. certifies that

Marcos Iwankiw

has successfully completed the Lead Risk Assessor Refresher course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health in accordance with the Illinois Lead Poisoning Prevention Code.

Course Date: 11/15/2019

Exam Date: 11/15/2019

Expiration Date: 11/15/2022

Certificate Number: LRAR1911152310

Kathy DeSalvo, Director

APPENDIX B

Asbestos Laboratory Results and Chain of Custody Documentation

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

NVLAP Lab Code 101202-0

ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY

Method: EPA/600/R-93/116

Carnow, Conibear, & Associates
600 W. Van Buren Street, Suite 500
Chicago, IL 60607
Phone: (312) 782-4486
Fax: (312) 782-5145

Reference:	E12834X011	Date Received:	10/26/2022
Location:	1819 W Pershing	Date Analyzed:	10/27/2022
Batch No.:	361402	Date Reported:	10/27/2022
Customer No.:	141	Turn Around Time:	3 Days

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
361402001	MI102622-1	Chrysotile 1-5%	Binder 95-99%
361402002	MI102622-2	Chrysotile 1-5%	Binder 95-99%
361402003	MI102622-3	Chrysotile 1-5%	Binder 95-99%
361402004	MI102622-4	Chrysotile 1-5%	Binder 95-99%
361402005	MI102622-5	Chrysotile 1-5%	Binder 95-99%
361402006	MI102622-6	Chrysotile 1-5%	Binder 95-99%
361402007	MI102622-7	ND	Binder 99-100%
361402008	MI102622-8	ND	Binder 99-100%
361402009	MI102622-9	ND	Binder 99-100%
361402010	MI102622-10	ND	Binder 99-100%
361402011	MI102622-11	ND	Binder 99-100%
361402012	MI102622-12	ND	Binder 99-100%
361402013	MI102622-13	ND	Binder 99-100%
361402014	MI102622-14	ND	Binder 99-100%
361402015	MI102622-15	ND	Binder 99-100%
361402016	MI102622-16	Chrysotile 1-5%	Binder 95-99%
361402017	MI102622-17	ND	Binder 99-100%
361402018	MI102622-18	Chrysotile 1-5%	Binder 95-99%

ND = Asbestos Not Detected (Not Present) NA = Not Analyzed NS = Not Submitted

Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

Analyzed by Name: Henry Robateau / Microscopist

Date: 10/27/2022

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

NVLAP Lab Code 101202-0

ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY

Method: EPA/600/R-93/116

Carnow, Conibear, & Associates
600 W. Van Buren Street, Suite 500
Chicago, IL 60607
Phone: (312) 782-4486
Fax: (312) 782-5145

Reference:	E12834X011	Date Received:	10/26/2022
Location:	1819 W Pershing	Date Analyzed:	10/27/2022
Batch No.:	361402	Date Reported:	10/27/2022
Customer No.:	141	Turn Around Time:	3 Days

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
361402019	MI102622-19	ND	Cellulose 30-35% Binder 30-35% Glass 30-35%
361402020	MI102622-20	ND	Cellulose 30-35% Binder 30-35% Glass 30-35%
361402021	MI102622-21	ND	Cellulose 30-35% Binder 30-35% Glass 30-35%

ND = Asbestos Not Detected (Not Present) NA = Not Analyzed NS = Not Submitted

Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

Analyzed by Name : Henry Rebateau / Microscopist

Date: 10/27/2022

STAT Analysis Corporation

2242 W. Harrison, Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386
e-mail address: STATinfo@STATAnalysis.com AIHA accredited 101160 NVLAP lab code 101202-0

CHAIN OF CUSTODY RECORD

Client:	Carnow Conibear & Assoc., Ltd.
Street Address:	600 W Van Buren St. Suite 500
City, State, Zip:	Chicago Illinois 60608
Phone:	
Fax:	312.782.5145
e-mail/Alt. Fax:	
Project Number:	612834X011
Project Name:	PBCC
Project Location:	1869 W. Pershing
Project Manager:	DLANTRY
P.O. Number:	

Turn Around: Immediate: ☐ 4 Hrs: ☐ 8 Hrs: ☐ 24 Hrs: ☐ 1 Day: ☐ 2 Days: ☐ 3 Days: ☒ 5 Days: ☐

Date Due: Time Due:

Note: Not all turn around times are available for all analysis.

OFFICE USE ONLY BELOW

Batch No.: 361402

Samples Acceptable: Yes: ☒ No: ☐

Checked by (Initial/Date): [signature] 10/27/22

QC by (Initial/Date): [initials] 10/31/22

Reported By (Initial/Date/Time/Method):

Comments:

Relinquished by: [signature]		Date/Time: 10-26-22
Received by: [signature]		Date/Time: 10-26-22 15:10
Relinquished by:		Date/Time:
Received by:		Date/Time:
Relinquished by:		Date/Time:
Received by:		Date/Time:

Client Sample Number/Description: MI102622

Client Sample Number/Description	Date Taken	PCM Asbestos	PLM Asbestos (Bulk)	PLM Point Count	PLM Gravimetric	TEM Air Asbestos	TEM Bulk Asbestos	TEM Gravimetric Asb.	TEM Microvac Asb.	TEM Water	Other
1 12x12 FT Beige 5th Fl under carpet west side	↓		✓								
2 ↓			✓								
3 ↓			✓								
4 Associated Mastic			✓								
5 ↓			✓								
6 ↓			✓								
7 Carpet Mastic 5th Fl west side			✓								
8 ↓			✓								
9 ↓			✓								
10 12x12 FT Light Brown 5th Fl east side	↓		✓								
11 ↓			✓								
12 ↓			✓								
13 Associated Mastic			✓								

Comments: Please E-mail results to Dlantry & MIwankiw @CCALTD.com

STAT Analysis Corporation

2242 W. Harrison, Suite 200, Chicago, Illinois 60612 Phone: (312) 733-0551 Fax: (312) 733-2386
e-mail address: STATinfo@STATAnalysis.com AIHA accredited 101160 NVLAP lab code 101202-0

CHAIN OF CUSTODY RECORD

Page : 2 of 2

Client:	Carnow Conibear & Assoc., Ltd.
Street Address:	600 W Van Buren St. Suite 500
City, State, Zip:	Chicago Illinois 60608
Phone:	
Fax:	312.782.5145
e-mail/Alt. Fax:	
Project Number:	E12834 X011
Project Name:	PBCC
Project Location:	1869 W. Hastings
Project Manager:	D. Lanier
P.O. Number:	

Turn Around: Immediate: ☐ 4 Hrs: ☐ 8 Hrs: ☐ 24 Hrs: ☐ 1 Day: ☐ 2 Days: ☐ 3 Days: ☒ 5 Days: ☐

Date Due: Time Due: Note: Not all turn around times are available for all analysis.

OFFICE USE ONLY BELOW:

Batch No.: 361402

Samples Acceptable: Yes: ☒ No: ☐

Checked by (Initial/Date):

QC by (Initial/Date):

Reported By (Initial/Date/Time/Method):

Comments:

Relinquished by:	Date/Time: 10.26.22
Received by:	Date/Time: 10/26/22 15:10
Relinquished by:	Date/Time:
Received by:	Date/Time:
Relinquished by:	Date/Time:
Received by:	Date/Time:

Client Sample Number/Description:	Date Taken	PCM Asbestos	PLM Asbestos (Bulk)	PLM Point Count	PLM Gravimetric	TEM Air Asbestos	TEM Bulk Asbestos	TEM Gravimetric Asb.	TEM Microvac Asb.	TEM Water	Other:
14 Associated Mastic 5th Floor East Side			9								
15 " "			9								
16 Elbows on Fiberglass Pipe Insulation 5th Fl West Side			9								
17 " "			9								
18 " "			9								
19 2x2 ceiling Tile white 5th Floor center			9								
20 " " West			9								
21 " " East			9								

Comments:

APPENDIX C

Lead-Based Paint Field Data Sheets

Carnow, Conibear & Assoc., Ltd.
Environmental Consulting Services
600 W. Van Buren St., Suite 500, Chicago, IL 60607
t. 312.782.4486 f. 312.782.5145
www.ccltd.com

CARNOW CONIBEAR

XRF CALIBRATION CHECK TEST RESULTS

Client: PBC Date: 10-26-22

Address: 1819 West Peshtigo Road

XRF Serial #: 2295

XRF Instrument: Heuresis Pb200i

Inspector/License #: M. Iwanow

XRF Unit File #: 10260266

Calibration Check Tolerance Used: +/- 0.2 mg/cm² on 1. mg/cm² Heuresis Standard

Time Corrected Mode – Duration of Test is seconds long

CALIBRATION CHECK (Bare Wood)

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference From Average & 0.0 mg/cm²	Acceptable Yes/No
	0.0	0.0	0.0			

CALIBRATION CHECK (Painted)

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference Between Average & 0.0 mg/cm²	Acceptable Yes/No
	1.0	1.0	1.0			

CALIBRATION CHECK (Painted)

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference Between Average & 0.0 mg/cm²	Acceptable Yes/No
	1.0	1.0	1.0			

CALIBRATION CHECK ( )

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference Between Average & 0.0 mg/cm²	Acceptable Yes/No

Lead Based Paint XRF Data Sheet

Client: PBCC
Building Address: 1819 W. Pershing Road
City: Chicago
Inspection Date: 10-26-22
Area Description: 6th + 5th Floor
State: IL
Inspector: M. Ewankiw
License #: L-1199
XRF Serial #: 7795
XRF Instrument: Heuresis Pb 2 00i
XRF Unit /File #: 10260216
Inspector's Signature: [signature]

XRF Test Shot #	Test Location	Component	Substrate	Color	Condition Assessment Deterioration Present?	Estimated Damage	XRF Reading mg/cm²	Classification P=Positive ≥1.0 N=Negative <1.0
	6th Floor							
7	W	Column	Concrete	Green	Y	10%	6.7	P
8		Sprinkler Vertical Line	Metal		Y	10%	0.3	N
9	Open Space	Sprinkler ~~[illegible]~~			Y		7.9	P
10		Sprinkler 3 inch Line		Beige	Y		17.0	P
11		Sprinkler new Line			N		0.2	N
12		old Line			Y	40%	4.4	P
13		Ceiling	Concrete	White	Y	20%	0.0	N
					Y N			P N
	5th Floor				Y N			P N
					Y N			P N
					Y N			P N
14	West	Column	Concrete	Gray	N		0.3	P N
15					N		0.3	P N
16	East Side				Y	20%	2.7	P
17		Wall	Brick		Y		2.4	P
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N

CARNOW

Carnow, Conibear & Assoc., Ltd.
Environmental Consulting Services
600 West Van Buren St., Suite 500, Chicago, IL 60607
t: 312.782.4486 f: 312.782.5145
www.ccaltd.com

CARNOW CONIBEAR

Limited Asbestos-Containing Material and Lead-Based Paint Survey Report

Site: **Center Building**
1819 W. Pershing Road
Chicago, IL 60609

Survey Date: **November 22, 23, & 28, 2022**

Project No.: **A12834W001**

Prepared for:

PUBLIC BUILDING COMMISSION of Chicago

Public Building Commission of Chicago
Richard J. Daley Center, Room 200
50 West Washington Street
Chicago, Illinois 60602

Issued: December 2, 2022

Limited Asbestos-Containing Material and Lead-Based Paint Survey Report

Site: **Center Building**
1819 W. Pershing Road
Chicago, IL 60609

Inspection by:

Anthony Rodriguez
Asbestos Building Inspector (IDPH License No. 100-19297)
Lead Risk Assessor (IDPH License No. 1002461)

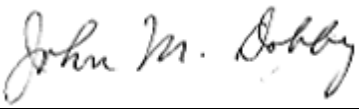
Inspection by:

Mitch Kurka
Lead Risk Assessor (IDPH License No. 1003135)

Report by:

Anthony Rodriguez
Project Manager

Report Reviewed By:



John M. Dobby, CIH, CSP
Occupational Health & Safety Services

CARNOW CONIBEAR

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CARNOW CONIBEAR

1.0 EXECUTIVE SUMMARY

Carnow, Conibear & Assoc., Ltd. (Carnow Conibear) was requested by Public Building Commission of Chicago (PBCC) to perform an asbestos-containing material and lead-based paint survey at the Center Building located at 1819 W. Pershing Road, in Chicago, Illinois. The survey and sampling were limited to accessible areas on portions of the Basement, 1st, 2nd, 3rd, 4th, 5th, and 6th floors of the building as requested by PBCC.

Asbestos Survey
The asbestos survey was conducted in phases. The first phase included a review of available historical asbestos related documentation. The second phase included a visual inspection of interior and exterior building areas to identify accessible, suspect asbestos-containing materials, collect representative samples from each suspect material, analyze samples for the presence of asbestos, and to quantify each confirmed asbestos-containing material.

The asbestos-containing materials identified include:

- 2nd Layer Floor Tile Under Carpet – observed in an intact condition located by the NE Stairwell on the 5th Floor.
- 12x12 Floor Tile – Beige w/Grey Streaks and Associated Mastic - observed in an intact condition located by NW Stairwell and Center NW Stairwell on the 5th floor and SW Stairwell and Center SE Stairwell on the 4th floor.
- Associated Mastic w/12x12 Floor Tile – Mottled Brown w/Flecks – observed in an intact condition located by NE Stairwell on the 2nd Floor.
- 12x12 Floor Tile – Stone Pattern and Associated Mastic – observed as damaged condition located by the NE Stairwell on the 1st Floor.
- Associated Mastic w/2nd Layer 12x12 Floor Tile – Beige Under Carpet – observed in an intact condition located by the NW Stairwell.
- 3rd Layer Floor Tile – Brown – observed in an intact condition located in Hallway by the NE Stairwell Hallway and near Center SE Stairwell in Storage Area on the 1st Floor.
- 3rd Layer Floor Tile – Green – observed in an intact condition located in Hallway by the NE Stairwell Hallway and Center SE Stairwell in Storage Area on the 1st Floor.

Lead-Based Paint Survey
The lead-based paint survey consisted of visually inspecting the painted survey areas to determine representative paint histories and collecting measurements utilizing an X-ray fluorescence (XRF) spectrum analyzer. The lead-based paint testing was limited to major building components and locations with damaged or peeling paint in the surveyed 5th and 6th floor areas. The limited lead-based paint sampling assessed for lead-based paint in the survey areas as defined by the Department of Housing and Urban Development (HUD).

The lead painted components identified at the subject site include:

- Beige paint on concrete ceiling on the 5th floor near the Center West Stairway. Observed in a deteriorated condition.
- Beige paint on concrete ceiling on the 3rd floor near the floor Northeast Stairway. Observed in a deteriorated condition.
- Dark Gray paint on concrete ceiling on the 3rd floor near the Center East Stairway. Observed in an intact condition.
- Off White paint on concrete ceiling on the 3rd floor North Corridor. Observed in an intact condition.

- Off White paint on concrete ceiling on the 3rd floor near the Northwest Stairway. Observed in an intact condition.
- Off White paint on concrete ceiling on the 1st floor Northeast Corridor. Observed in an intact condition.
- Brown paint on concrete ceiling on the 1st floor near Elevator A-11 South Storage Area. Observed in an intact condition.
- Off White paint on concrete ceiling on the 1st floor near the Center East Stairway. Observed in an intact condition.
- Light Beige paint on concrete ceiling on the 1st floor near the Northwest Stairway. Observed in an intact condition.
- Dark Beige paint on concrete ceiling on the 2nd floor near the Southeast Stairway. Observed in a deteriorated condition.
- Off White paint on concrete ceiling on the 1st floor near Center West Stairway. Observed in an intact condition.
- White paint on concrete ceiling in the Basement Northeast Staff Room. Observed in a deteriorated condition.
- Black paint on concrete ceiling in the Basement by the Northeast Stairway. Observed in a deteriorated condition.

Carnow Conibear recommends incorporating this information into future renovation documents regarding the presence and location of asbestos-containing materials and lead-based paint. All asbestos and/or lead abatement activities shall be conducted by a licensed contractor in accordance with the Illinois Department of Public Health (IDPH), USEPA National Emissions Standards for Hazardous Air Pollutants (NESHAPS), and Occupational Safety and Health Administration (OSHA) regulations and requirements. All renovation/demolition work shall be performed in accordance with the requirements of OSHA's Safety and Health Regulations for Construction (29 CFR 1910 Subpart H) and all applicable local, state, and federal rules and regulations.

2.0 INTRODUCTION

Carnow, Conibear & Assoc., Ltd. (Carnow Conibear) was requested by Public Building Commission of Chicago (PBCC) to perform an asbestos-containing material and lead-based paint sampling at the Center Building located at 1819 W. Pershing Road, in Chicago, Illinois. The survey and sampling were limited to accessible areas on portions of the Basement, 1st, 2nd, 3rd, 4th, 5th, and 6th floors of the building as requested by PBCC. Surveys were conducted on November 22, 23, and 28, 2022, by Carnow Conibear representative Mr. Anthony Rodriguez and Mr. Mitch Kurka. See Appendix A for a copy of inspector's licenses and certificates.

2.1 Objective

2.1.1 Asbestos Containing Material Survey

The objective of the asbestos survey was to identify the location of asbestos-containing materials within the requested areas on the interior of the Pershing Road Building, in Chicago, Illinois. To achieve this objective, the following procedures were performed:

- Historical Document Review – to gain an understanding of previous asbestos activities and locate structural, electrical, and mechanical elements of the building.
- Visual Inspection – to determine the location of suspect materials.
- Bulk Sampling – samples are taken in random locations, to provide representative sampling for each suspect material.
- Sample Analysis – to determine the type and percent of asbestos in the material.
- Reporting – to prepare a summary report documenting the inspection findings and providing recommendations as warranted.

Because a destructive survey was not performed, the possibility exists that some asbestos-containing materials were not included in this survey if they were concealed behind walls and/or ceilings, within inaccessible pipe chases, or had restricted access. However, Carnow Conibear made every reasonable effort to locate hidden mechanical systems or other inconspicuous materials despite constraints.

2.2.2 Lead-Based Paint Survey

The objective of the lead-based paint survey was to identify painted building components to determine the existence, condition, and location of lead-based paint as defined by HUD. To achieve this objective, the following procedures were performed:

- Visual Inspection – to determine location of painted surfaces.
- Sampling – paint sampling to determine the presence.
- Reporting – to prepare a summary report documenting the inspection findings.

3.0 SITE INSPECTION

3.1 Asbestos-Containing Material Survey

3.1.1 Historical Document Review

Available building construction documents including the previous sampling reports were reviewed to gain an understanding of previous asbestos activities and locate basic building systems.

3.1.2 Asbestos Survey Methodology

The asbestos survey consisted of several phases. The first phase of the survey consisted of the historic document review. Next, a walkthrough inspection of the subject site to identify homogeneous areas (materials which are uniform in composition throughout) and to assess material condition was conducted. The final phase of the survey consisted of collecting representative bulk samples from the suspected asbestos-containing materials.

3.1.3 Suspect Asbestos Containing Material Sample Collection

All bulk samples were collected based on methods described in USEPA guidelines. The samples were collected and stored in sample bags with a unique sample identification number prior to delivery to STAT Analysis Corporation (STAT), Chicago, IL for analysis. A chain of custody (COC) form was signed and dated by the inspector, the delivering representative, and the laboratory representative who received the samples.

3.1.4 Asbestos Sample Analysis

STAT's laboratory is accredited for bulk asbestos fiber analysis by the National Voluntary Laboratory Accreditation Program (NVLAP) through the National Institute of Standards and Technology (NIST). STAT utilized dispersion staining and polarized light microscopy (PLM) techniques for analyzing the samples consistent with National Institute for Occupational Safety and Health (NIOSH) methods. PLM is the EPA's recognized method for determining bulk asbestos content.

The results of the laboratory analysis revealed the presence of asbestos-containing materials. Table I summarizes the results of the bulk sample analysis, material description, location, and estimated quantity. See Appendix B for approximate locations of all identified asbestos materials and Appendix C for the bulk sample laboratory report and chain of custody documentation.

Table I – Summary of Limited Asbestos Survey
Center Building
1819 W. Pershing Rd., Chicago, Illinois

SAMPLE ID	MATERIAL DESCRIPTION	MATERIAL LOCATION	LABORATORY RESULT	COMMENT
AR112322-01 AR112322-02 AR112322-03	Black Mastic	6th Floor: By Elevator A-11	No Asbestos Detected	
AR112322-04 AR112322-05 AR112322-06	Yellow Carpet Glue	5th Floor: by NE Stairwell, SE Center Stairwell, 4th Floor: by NE Stairwell, 1st Floor: by NE Stairwell	No Asbestos Detected	
AR112322-07 AR112322-08 AR112322-09	2x4 Lay-In Ceiling Tile – Medium Gouge w/Pinholes	5th Floor: by SE Center Stairwell, 4th Floor: by NW Stairwell, 1st Floor: by NE Stairwell	No Asbestos Detected	
AR112322-10 AR112322-11 AR112322-12	**2nd Layer Floor Tile Under Carpet**	**5th Floor: by NE Stairwell**	**5-10% Chrysotile Asbestos**	
AR112322-13 AR112322-14 AR112322-15	Associated Mastic w/2nd Layer Floor Tile Under Carpet	5th Floor: by NE Stairwell	No Asbestos Detected	
AR112322-16 AR112322-17 AR112322-18	**12x12 Floor Tile – Beige w/Grey Streaks**	**5th Floor: by NW Stairwell, Center NW Stairwell 4th Floor: SW Stairwell, Center SE Stairwell**	**5-10% Chrysotile Asbestos**	
AR112322-19 AR112322-20 AR112322-21	**Assoc. Mastic w/12x12 Floor Tile – Beige w/Grey Streaks**	**5th Floor: by NW Stairwell, Center NW Stairwell 4th Floor: SW Stairwell, Center SE Stairwell**	**1-5% Chrysotile Asbestos**	
AR112322-22 AR112322-23 AR112322-24	12x12 Floor Tile – White w/Grey Streaks	4th Floor: by NW Stairwell	No Asbestos Detected	
AR112322-25 AR112322-26 AR112322-27	**Assoc. Mastic w/12x12 Floor Tile – White w/Grey Streaks**	**4th Floor: by NW Stairwell**	**1-5% Chrysotile Asbestos**	
AR112322-28 AR112322-29 AR112322-30	Brown Glue Pucks	4th Floor: N. Mechanical Room by Elevator A-5	No Asbestos Detected	
AR112322-31 AR112322-32 AR112322-33	12x12 Floor Tile – Mottled Brown w/Flecks	2nd Floor: by NE Stairwell	No Asbestos Detected	
AR112322-34 AR112322-35 AR112322-36	**Assoc. Mastic w/12x12 Floor Tile – Mottled Brown w/Flecks**	**2nd Floor: by NE Stairwell**	**1-5% Chrysotile Asbestos**	
AR112322-37 AR112322-38 AR112322-39	**12x12 Floor Tile – Stone Pattern**	**1st Floor: by NW Stairwell**	**5-10% Chrysotile Asbestos**	
AR112322-40 AR112322-41 AR112322-42	**Assoc. Mastic w/12x12 Floor Tile – Stone Pattern**	**1st Floor: by NW Stairwell**	**1-5% Chrysotile Asbestos**	
AR112322-43 AR112322-44 AR112322-45	12x12 Floor Tile – Beige Under Carpet (2nd Layer)	1st Floor: NE Stairwell Hallway	No Asbestos Detected	

Table I – Summary of Limited Asbestos Survey
Center Building
1819 W. Pershing Rd., Chicago, Illinois

SAMPLE ID	MATERIAL DESCRIPTION	MATERIAL LOCATION	LABORATORY RESULT	COMMENT
AR112322-46 AR112322-47 AR112322-48	**Assoc. Mastic w/2nd Layer 12x12 Floor Tile – Beige Under Carpet**	**1st Floor: Hallway by the NE Stairwell**	**1-5% Chrysotile Asbestos**	
AR112322-49 AR112322-50 AR112322-51	**3rd Layer Floor Tile - Brown**	**1st Floor: Hallway by the NE Stairwell, near Center SE Stairwell**	**5-10% Chrysotile Asbestos**	
AR112322-52 AR112322-53 AR112322-54	**Assoc. Mastic w/3rd Layer Floor Tile - Brown**	**1st Floor: Hallway by the NE Stairwell, near Center SE Stairwell**	**1-5% Chrysotile Asbestos**	
AR112322-55 AR112322-56 AR112322-57	**3rd Floor Tile - Green**	**1st Floor: Hallway by the NE Stairwell**	**5-10% Chrysotile Asbestos**	
AR112322-58 AR112322-59 AR112322-60	Assoc. Mastic w/3rd Floor Tile - Green	1st Floor: Hallway by the NE Stairwell	No Asbestos Detected	

IDPH and EPA define an asbestos-containing material as any material containing greater than 1 percent asbestos.
Bold indicates greater than 1% ACM.
Locations are provided for reference only. Materials may exist in other areas not noted.

3.2 Lead-Based Paint Survey

3.2.1 Lead-Based Paint Survey Methodology

The lead-based paint survey consisted of visually inspecting the painted surfaces within the surveyed areas to determine representative paint histories and to collect random samples utilizing an X-ray fluorescence (XRF) spectrum analyzer. The lead-based paint testing was limited to major building components and locations with damaged or peeling paint only. Sampling of suspect lead-based paint (LBP) components and/or surfaces was conducted following the U.S. Department of Housing and Urban Development (HUD) guidelines of June 1995 for single family housing, Chapter 7, Lead Based Paint Inspection, 1997 Revision, and the EPA and HUD's Performance Characteristics Sheet for the RMD LPA-1 XRF lead paint analysis system. There may be materials that were not identified, because they were located in inaccessible areas and not available at the time of inspection.

Paint sampling was conducted utilizing an X-Ray Fluorescence spectrum analyzer (XRF) that uses a Cobalt 57 (^{57}Co) radioactive source and an advanced, solid-state radiation detector to generate an X-Ray fluorescence spectrum of a painted surface. The spectrum is then analyzed by a microprocessor to eliminate the effects of substrate and other factors such as scattering to allow an accurate determination of the amount of lead on a surface.

Painted surfaces which indicated a concentration of greater than or equal to (≥)1.0 milligram per square centimeter (mg/cm^2) of surface area are considered to be LBP as defined by HUD.

Table II identifies the lead painted components and/or surfaces as defined by HUD. See Appendix D for a complete testing log of all XRF measurements collected for this survey.

Table II – Summary of Lead-Based Paint Survey
Center Building
1819 W. Pershing Rd., Chicago, Illinois

Location	Component	Substrate	Color	Condition	Result (mg/cm^2)
5th Floor West Office	Sprinkler Pipe	Metal	Beige	Deteriorated	0.5
5th Floor Center Stairway	**Ceiling**	**Concrete**	**Beige**	**Deteriorated**	**7.7**
5th Floor Northeast Stairway	**Ceiling**	**Concrete**	**Beige**	**Deteriorated**	**5.2**
5th Floor Mechanical Room	Ceiling	Concrete	Beige	Deteriorated	0.7
5th Floor Southeast Center Stairway	Ceiling	Concrete	Beige	Deteriorated	0.2
5th Floor South Cafeteria	Ceiling	Metal	Dark Beige	Intact	0.0
4th Floor Center Stairway	Ceiling	Concrete	Light Beige	Intact	0.3
4th Floor Center West Corridor	Sprinkler Pipe	Metal	Light Beige	Intact	0.3
4th Floor Northwest Corridor	Sprinkler Pipe	Metal	Light Beige	Deteriorated	0.4
4th Floor Northwest Stairway	Ceiling	Concrete	Light Beige	Deteriorated	0.6
4th Floor North Corridor	Sprinkler Pipe	Metal	Light Beige	Deteriorated	0.0
4th Floor Northeast Stairway	Ceiling	Concrete	Black	Deteriorated	0.3
4th Flor North Mechanical Room	Ceiling	Concrete	Dark Beige	Intact	0.2
4th Floor North Mechanical Room	Ceiling	Concrete	White	Intact	0.2
4th Floor Center East Stairway	Ceiling	Concrete	Dark Beige	Deteriorated	0.2
4th Floor South Mechanical Room	Ceiling	Concrete	Light Beige	Intact	0.2
4th Floor South Mechanical Room	Sprinkler Pipe	Metal	Off White	Intact	0.0
3rd Floor Center Stairway	Ceiling	Concrete	Light Beige	Intact	0.1
3rd Floor Elevator A11 Area	Ceiling	Concrete	Light Beige	Deteriorated	0.2

Table II – Summary of Lead-Based Paint Survey
Center Building
1819 W. Pershing Rd., Chicago, Illinois

Location	Component	Substrate	Color	Condition	Result (mg/cm^2)
3rd Floor Elevator A11 Area	Sprinkler Pipe	Metal	Black	Intact	0.1
3rd Floor Center East Stairway	**Ceiling**	**Concrete**	**Dark Gray**	**Intact**	**1.6**
3rd Floor North Corridor	**Ceiling**	**Concrete**	**Off White**	**Intact**	**2.0**
3rd Floor Northwest Stairway	**Ceiling**	**Concrete**	**Off White**	**Intact**	**2.8**
3rd Floor Northwest Stairway	Sprinkler Pipe	Metal	Off White	Intact	0.1
3rd Floor Northeast Stairway	**Ceiling**	**Concrete**	**Off White**	**Intact**	**2.7**
3rd Floor Northeast Stairway	Sprinkler Pipe	Metal	Off White	Intact	0.2
3rd Floor Northeast Stairway	Drainpipe	Metal	Beige	Deteriorated	0.2
2nd Floor Center Storage	Sprinkler Pipe	Metal	Red Brown	Intact	0.1
2nd Floor by Elevator A11	Floor	Concrete	Black	Deteriorated	0.1
2nd Floor South Storage Area	Ceiling	Concrete	Off White	Deteriorated	
1st Floor Northeast Corridor	**Ceiling**	**Concrete**	**Off White**	**Intact**	**9.8**
1st Floor Northeast Corridor	Sprinkler Pipe	Metal	Off White	Intact	0.2
1st Floor South Storage by A11	**Ceiling**	**Concrete**	**Brown**	**Deteriorated**	**9.5**
1st Floor South Storage by A11	Sprinkler Pipe	Metal	Black	Intact	0.2
1st Floor Center East Stairway	**Ceiling**	**Concrete**	**Off White**	**Intact**	**6.4**
1st Floor Center East Stairway	Sprinkler Pipe	Metal	Off White	Intact	0.3
1st Floor Northwest by Stairway	**Ceiling**	**Concrete**	**Light Beige**	**Intact**	**4.7**
1st Floor Northwest by Stairway	Sprinkler Pipe	Metal	Black	Intact	0.2
2nd Floor Northwest by Stairway	Ceiling	Concrete	White	Intact	0.2

Table II – Summary of Lead-Based Paint Survey
Center Building
1819 W. Pershing Rd., Chicago, Illinois

Location	Component	Substrate	Color	Condition	Result (mg/cm^2)
2nd Floor Northwest by Stairway	Sprinkler Pipe	Metal	White	Intact	0.5
2nd Floor Northeast Corridor	Ceiling	Concrete	Off White	Intact	0.3
2nd Floor Northeast Corridor	Sprinkler Pipe	Metal	Off White	Intact	0.4
2nd Floor North Corridor	Ceiling	Concrete	Off White	Intact	0.2
2nd Floor North Corridor	Sprinkler Pipe	Metal	Off White	Intact	0.2
2nd Floor North Corridor	Sprinkler Pipe	Metal	Brown	Intact	0.1
2nd Floor Center West Stairway	Ceiling	Concrete	Off White	Intact	0.2
2nd Floor Center West Stairway	Sprinkler Pipe	Metal	Black	Intact	0.3
2nd Floor Southeast Stairway	**Ceiling**	**Concrete**	**Dark Beige**	**Deteriorated**	**1.2**
2nd Floor Southeast Stairway	Sprinkler Pipe	Metal	Black	Intact	0.3
2nd Floor Southeast Stairway	Ceiling Radiator	Metal	Red Brown	Intact	0.2
2nd Floor Storage by A11	Ceiling	Concrete	Off White	Intact	0.1
2nd Floor Storage by A11	Sprinkler Pipe	Metal	Black	Intact	0.2
1st Floor Center West Stairway	**Ceiling**	**Concrete**	**Off White**	**Intact**	**1.0**
1st Floor Center West Stairway	Sprinkler Pipe	Metal	Off White	Intact	0.2
Basement Center West Stairway	Ceiling	Concrete	Off White	Deteriorated	0.2
Basement Center West Stairway	Sprinkler Pipe	Metal	Black	Intact	0.1
Basement Northwest Stairway	Sprinkler Pipe	Metal	Beige	Deteriorated	0.0
Basement Northwest Stairway	Sprinkler Pipe	Metal	Black	Intact	0.5
Basement Northeast Staff Room	**Ceiling**	**Concrete**	**White**	**Deteriorated**	**5.5**

Table II – Summary of Lead-Based Paint Survey
Center Building
1819 W. Pershing Rd., Chicago, Illinois

Location	Component	Substrate	Color	Condition	Result (mg/cm^2)
Basement Northeast Staff Room	Sprinkler Pipe	Metal	White	Intact	0.0
Basement Northeast Stairway	**Ceiling**	**Concrete**	**Black**	**Deteriorated**	**3.6**
Basement Northeast Stairway	Sprinkler Pipe	Metal	Black	Deteriorated	0.6

Lead-based paint is defined by HUD as paint or other surface coatings that contain lead equal to or greater than (≥)1.0 milligram per square centimeter (mg/cm^2) of surface area **BOLD** text indicates LBP.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Carnow, Conibear & Assoc., Ltd. (Carnow Conibear) was retained by the Public Building Commission of Chicago to perform an asbestos-containing material and lead-based paint survey at the Center Building located in Chicago, Illinois. The survey and sampling were limited to accessible areas on portions of the Basement, 1st, 2nd, 3rd, 4th, 5th, and 6th floors of the building as requested by PBCC.

Based on the results of the investigation and sampling conducted on November 22, 23, and 28, 2022, Carnow Conibear offers the following conclusions and recommendations:

Asbestos Survey

- Results of the asbestos survey and laboratory analysis confirm asbestos-containing materials (floor tiles and associated mastics) are present in the survey area. The condition of the asbestos-containing materials was noted as being intact.

- The survey was limited to visible and accessible locations and materials in portions of the Center Building. Access to areas behind walls and/or above ceilings may have not been available or necessary at the time of this investigation, if previously unidentified materials are found, these materials shall be assumed to be asbestos-containing or shall be sampled and added to the inspection report.

Lead-Based Paint Survey

- The result of the lead survey identified lead-based paint (LBP) on concrete ceilings throughout the subject building. In many instances, the LBP was observed in a deteriorated condition.

- Utilize engineering controls and personal protective equipment as necessary during renovation or demolition activities impacting painted components to ensure employee lead exposures are below the OSHA lead in construction standard (29 CFR 1926.62). The OSHA lead standard applies to construction work where employees could be exposed to lead, regardless of the lead content in paint. Until an employee-exposure assessment is conducted and determines the magnitude of exposure occurring during lead-related

activities, assume the employee performing the lead-related task is exposed to lead concentrations.

- The OSHA lead in construction standard (29 CFR 1926.62) limits lead exposures below the Action Level and Permissible Exposure Limit (PEL) from any source during all construction activities. The OSHA lead in construction standard limits employees lead exposure to a PEL of 50 micrograms per cubic meter (µg/m^3), measured as an 8-hour Time Weighted Average (TWA) and 30 µg/m^3 as an 8-hour TWA Action Level.

- The survey was limited to visible and accessible locations and materials in portions of the Center Building. Access to areas behind walls and/or above ceilings may have not been available or necessary at the time of this investigation, if previously unidentified materials are found, these materials shall be assumed to be lead-based paint or shall be sampled and added to the inspection report.

- All future removal and/or demolition/renovation work involving asbestos-containing material and lead-based paint shall be conducted by a licensed contractor in accordance with IDPH, EPA, and OSHA regulations and requirements.

- All asbestos-containing material and lead-based paint waste shall be disposed of in accordance with all applicable local, state, and federal regulations.

- Incorporate the data from this report into future demolition/renovation documents.

- Document all environmental work activities and retain records.

Carnow Conibear has applied prevailing industry standards and reasonable judgment and effort within the scope of work outlined in Carnow Conibear's proposal, while conducting the asbestos-containing material and lead-based paint survey and sampling. The standards, judgment, and effort used by Carnow Conibear personnel to investigate, assess, and determine the presence of potential environmental hazards and liabilities associated with the subject building are consistent with requirements outlined in federal and state guidelines. Carnow Conibear makes no warranty, express or implied, that the findings and interpretations in this report are a complete representation of hazards and liabilities, associated with the building. Findings presented in this report are only indicative of conditions present during the time of the investigation and cannot be used to predict potential future or previous health effects on building occupants. The services performed by Carnow Conibear on this project have been conducted in a professional manner consistent with industry standards at the time of testing. There may be materials that were not identified, because they were located in inaccessible areas and not available at the time of inspection. Carnow Conibear made every reasonable effort to locate mechanical systems and other inconspicuous materials.

The information contained in this report was prepared based upon specific test parameters requested by the Public Building Commission of Chicago and regulations in force at the time of the report. The information herein is only for the specific use of the Public Building Commission of Chicago and Carnow Conibear. Carnow Conibear accepts no responsibility for the use, reuse, interpretation, or reliance by other parties on the information contained herein, unless written authorization has been obtained from Carnow Conibear. Carnow Conibear bears no responsibility for the implementation of recommendations included in this report unless specifically requested to do so by the Public Building Commission of Chicago.

APPENDIX A

Inspector Licenses and Certificates

IDPH
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

525-535 West Jefferson Street • Springfield, Illinois 62761-0001 • www.dph.illinois.gov

ANTHONY M RODRIGUEZ
4376 E MILLBROOK CIR
YORKVILLE, IL 60560

4/15/2022

ASBESTOS PROFESSIONAL LICENSE ID NUMBER: 19297

Enclosed is your Asbestos Professional License. Please note the expiration date on the card and in the image depicted below.

COPY OF THE ASBESTOS PROFESSIONAL LICENSE

Front of License

IDPH
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

ASBESTOS PROFESSIONAL LICENSE

ID NUMBER	ISSUED	EXPIRES
100 - 19297	4/15/2022	05/15/2023

ANTHONY M RODRIGUEZ
4376 E MILLBROOK CIR
YORKVILLE, IL 60560
Environmental Health

Back of License

ENDORSEMENTS	TC EXPIRES
INSPECTOR	9/10/2022
PROJECT MANAGER	11/13/2022
AIR SAMPLING PROFESSIONAL	

Alteration of this license shall result in legal action
This license issued under authority of the State of Illinois Department of Public Health
This license is valid only when accompanied by a valid training course certificate.

IDPH
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

ASBESTOS PROFESSIONAL LICENSE

ID NUMBER	ISSUED	EXPIRES
100 - 19297	4/15/2022	05/15/2023

ANTHONY M RODRIGUEZ
4376 E MILLBROOK CIR
YORKVILLE, IL 60560
Environmental Health

If you have any questions or need further assistance, contact the Asb
(217)785-5897.

Our WEB address is: dph.illinois.gov/topics-services/environmental
EMAIL Address: dph.asbestos@illinois.gov

ENDORSEMENTS	TC EXPIRES
INSPECTOR	9/10/2022
PROJECT MANAGER	11/13/2022
AIR SAMPLING PROFESSIONAL	

Alteration of this license shall result in legal action

This license issued under authority of the State of Illinois Department of Public Health

This license is valid only when accompanied by a valid training course certificate.

7233 S. Adams Street | Willowbrook, IL 60527
(630) 655-3900 | www.otssafety.com

2022

OCCUPATIONAL TRAINING & SUPPLY, INC.

Asbestos Building Inspector Refresher

Occupational Training & Supply, Inc. certifies that

Anthony Rodriguez

has successfully completed the Asbestos Building Inspector Refresher course and has passed the competency exam with a minimum score of 70%. The course is accredited by the Illinois Department of Public Health and Indiana Department of Environmental Management for purposes of accreditation in accordance with EPA 40 CFR 763, Asbestos Hazard Emergency response Act (AHERA) and TSCA Title II.

Course Date: 9/9/2022

Exam Date: 9/9/2022

Expiration Date: 9/9/2023

Certificate Number: BIR2209092157

Kathy DeSalvo

Kathy DeSalvo, Director

IDPH

LEAD RISK ASSESSOR LICENSE

LEAD ID	ISSUED	EXPIRES
1002461	1/5/2022	1/31/2023

Anthony Rodriguez
4376 E Milwaukee Cir
Yorkville, IL 60560

ILLINOIS LEAD PROGRAM
Environmental Health

Alteration of this license shall result in legal action

RISK ASSESSOR CERTIFICATE EXPIRES

11/2/2024

This license issued under authority of the State of Illinois -Department of Public Health

This license is valid only when accompanied by a valid training course certificate

If found return to 525 W.Jefferson St Springfield, IL 62761

7255 S. Adams Street | Willowbrook, IL 60527
(630) 655-3900 | www.otssafety.com

2021

OCCUPATIONAL TRAINING & SUPPLY, INC.

Lead Risk Assessor Refresher

Occupational Training & Supply, Inc. certifies that

Anthony Rodriguez

has successfully completed the Lead Risk Assessor Refresher course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health (TCP ID No. 25) in accordance with the Illinois Lead Poisoning Prevention Code.

Course Date: 11/2/2021

Exam Date: 11/2/2021

Expiration Date: 11/2/2024

Certificate Number: LRAR2111022597

Kristina Miczek

Kristina Miczek, Training Manager

IDPH

LEAD RISK ASSESSOR LICENSE

LEAD ID	ISSUED	EXPIRES
1003135	5/12/2022	1/31/2023

Mitchell D Kurka
300 N State St, Apt 3103
chicago, IL 60654

ILLINOIS LEAD PROGRAM
Environmental Health

Alteration of this license shall result in legal action

RISK ASSESSOR CERTIFICATE EXPIRES

4/8/2022

This license issued under authority of the State of Illinois -Department of Public Health

This license is valid only when accompanied by a valid training course certificate

If found return to 525 W.Jefferson St Springfield, IL 62761

(630) 655-3900 | www.otssafety.com

2022

OCCUPATIONAL TRAINING & SUPPLY, INC.

Lead Inspector Initial

Occupational Training & Supply, Inc. certifies that

Mitch Kurka

has successfully completed the Lead Inspector Initial course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health (TCP ID No. 25) in accordance with the Illinois Lead Poisoning Prevention Code.

Course Date: 3/21/2022 - 3/23/2022

Exam Date: 3/23/2022

Expiration Date: 3/23/2025

Certificate Number: LI2203230857

Kristina Miczek

Kristina Miczek, Training Manager

(630) 655-3900 | www.otssafety.com

2022

OCCUPATIONAL TRAINING & SUPPLY, INC.

Lead Risk Assessor Initial

Occupational Training & Supply, Inc. certifies that

Mitch Kurka

has successfully completed the Lead Risk Assessor Initial course and has passed the competency exam with a minimum score of 70%. This course is accredited by the Illinois Department of Public Health (TCP ID No. 25) in accordance with the Illinois Lead Poisoning Prevention Code.

Course Date: 4/7/2022 - 4/8/2022

Exam Date: 4/8/2022

Expiration Date: 4/8/2025

Certificate Number: LRA2204081018

Kristina Miczek

Kristina Miczek, Training Manager

APPENDIX B

Asbestos Laboratory Results and Chain of Custody Documentation

STAT Analysis Corporation
2242 West Harrison St., Suite 200, Chicago, IL 60612-3766
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com

NVLAP Lab Code 101202-0

ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY

Method: EPA/600/R-93/116

Carnow, Conibear, & Associates
600 W. Van Buren Street, Suite 500
Chicago, IL 60607
Phone: (312) 782-4486
Fax: (312) 782-5145

Reference: A12834W001
Location: 1819 W Pershing Rd., Chicago, IL
Batch No.: 361866
Customer No.: 141

Date Received: 11/23/2022
Date Analyzed: 11/25/2022
Date Reported: 11/25/2022
Turn Around Time: 1 Day

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
361866001	AR112322-01	ND	Binder 99-100%
361866002	AR112322-02	ND	Binder 99-100%
361866003	AR112322-03	ND	Binder 99-100%
361866004	AR112322-04	ND	Binder 99-100%
361866005	AR112322-05	ND	Binder 99-100%
361866006	AR112322-06	ND	Binder 99-100%
361866007	AR112322-07	ND	Cellulose 30-35% Binder 30-35% Glass 30-35%
361866008	AR112322-08	ND	Cellulose 30-35% Binder 30-35% Glass 30-35%
361866009	AR112322-09	ND	Cellulose 30-35% Binder 30-35% Glass 30-35%
361866010	AR112322-10	Chrysotile 5-10%	Binder 90-95%
361866011	AR112322-11	Chrysotile 5-10%	Binder 90-95%
361866012	AR112322-12	Chrysotile 5-10%	Binder 90-95%
361866013	AR112322-13	ND	Binder 99-100%

ND = Asbestos Not Detected (Not Present) NA = Not Analyzed NS = Not Submitted

Components of inhomogeneous samples are analyzed per our Standard Operating Procedure, or per customer request.

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

Analyzed by Name:

Henry Robateau / Microscopist

Date: 11/25/2022

STAT Analysis Corporation
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Location: 1819 W Pershing Rd., Chicago, IL
Batch No.: 361866
Customer No.: 141

Date Received: 11/23/2022
Date Analyzed: 11/25/2022
Date Reported: 11/25/2022
Turn Around Time: 1 Day

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
361866014	AR112322-14	ND	Binder 99-100%
361866015	AR112322-15	ND	Binder 99-100%
361866016	AR112322-16	Chrysotile 5-10%	Binder 90-95%
361866017	AR112322-17	Chrysotile 5-10%	Binder 90-95%
361866018	AR112322-18	Chrysotile 5-10%	Binder 90-95%
361866019	AR112322-19	Chrysotile 1-5%	Binder 95-99%
361866020	AR112322-20	Chrysotile 1-5%	Binder 95-99%
361866021	AR112322-21	Chrysotile 1-5%	Binder 95-99%
361866022	AR112322-22	ND	Binder 99-100%
361866023	AR112322-23	ND	Binder 99-100%
361866024	AR112322-24	ND	Binder 99-100%
361866025	AR112322-25	Chrysotile 1-5%	Binder 95-99%
361866026	AR112322-26	Chrysotile 1-5%	Binder 95-99%
361866027	AR112322-27	Chrysotile 1-5%	Binder 95-99%
361866028	AR112322-28	ND	Binder 99-100%
361866029	AR112322-29	ND	Binder 99-100%
361866030	AR112322-30	ND	Binder 99-100%
361866031	AR112322-31	ND	Binder 99-100%

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Date: 11/25/2022

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Reference: A12834W001
Location: 1819 W Pershing Rd., Chicago, IL
Batch No.: 361866
Customer No.: 141

Date Received: 11/23/2022
Date Analyzed: 11/25/2022
Date Reported: 11/25/2022
Turn Around Time: 1 Day

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
361866032	AR112322-32	ND	Binder 99-100%
361866033	AR112322-33	ND	Binder 99-100%
361866034	AR112322-34	Chrysotile 1-5%	Binder 95-99%
361866035	AR112322-35	Chrysotile 1-5%	Binder 95-99%
361866036	AR112322-36	Chrysotile 1-5%	Binder 95-99%
361866037	AR112322-37	Chrysotile 5-10%	Binder 90-95%
361866038	AR112322-38	Chrysotile 5-10%	Binder 90-95%
361866039	AR112322-39	Chrysotile 5-10%	Binder 90-95%
361866040	AR112322-40	Chrysotile 1-5%	Binder 95-99%
361866041	AR112322-41	Chrysotile 1-5%	Binder 95-99%
361866042	AR112322-42	Chrysotile 1-5%	Binder 95-99%
361866043	AR112322-43	ND	Binder 99-100%
361866044	AR112322-44	ND	Binder 99-100%
361866045	AR112322-45	ND	Binder 99-100%
361866046	AR112322-46	Chrysotile 1-5%	Binder 95-99%
361866047	AR112322-47	Chrysotile 1-5%	Binder 95-99%
361866048	AR112322-48	Chrysotile 1-5%	Binder 95-99%
361866049	AR112322-49	Chrysotile 5-10%	Binder 90-95%

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Reference: A12834W001
Location: 1819 W Pershing Rd., Chicago, IL
Batch No.: 361866
Customer No.: 141

Date Received: 11/23/2022
Date Analyzed: 11/25/2022
Date Reported: 11/25/2022
Turn Around Time: 1 Day

Laboratory Sample	Customer Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
361866050	AR112322-50	Chrysotile 5-10%	Binder 90-95%
361866051	AR112322-51	Chrysotile 5-10%	Binder 90-95%
361866052	AR112322-52	Chrysotile 1-5%	Binder 95-99%
361866053	AR112322-53	Chrysotile 1-5%	Binder 95-99%
361866054	AR112322-54	Chrysotile 1-5%	Binder 95-99%
361866055	AR112322-55	Chrysotile 5-10%	Binder 90-95%
361866056	AR112322-56	Chrysotile 5-10%	Binder 90-95%
361866057	AR112322-57	Chrysotile 5-10%	Binder 90-95%
361866058	AR112322-58	ND	Binder 99-100%
361866059	AR112322-59	ND	Binder 99-100%
361866060	AR112322-60	ND	Binder 99-100%

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Analyzed by Name: Henry Robateau / Microscopist

Date: 11/25/2022

Carnow, Conibear & Assoc., Ltd.
Environmental Consulting Services
600 W. Van Buren St., Suite 500, Chicago, IL 60607
t: 312.782.4486 f: 312.782.5145
www.ccaltd.com

361866

CARNOW CONIBEAR

CHAIN OF CUSTODY RECORD-PLM ASBESTOS

Project No: A12834W001
Client: PBCC
Date: 11/23/22
Turn Around: 1 Day

Project Name: Center Building
Project Location: 1819 W Pershing Rd Chicago, IL
Collected By: **Anthony Rodriguez**

Sample ID/Number:	PLM % Asb.	Sample Description/Location	
AR112322-01		Black Mastic	6th Floor - Elevator A-11 ✓
-02		↓	↓ ✓
-03		↓	↓ ✓
-04		Yellow Carpet Glue	5th Floor - by SE Stairwell ✓
-05		↓	4th Floor - by NE Stairwell ✓
-06		↓	3rd Floor - by NE Stairwell ✓
-07		2x4 Lay-In ceiling Tile	5th Floor - by SE Stairwell ✓
-08		Med. Gauges w/ Pinholes	4th Floor - by NE Stairwell ✓
-09		↓	3rd Floor - by NW Stairwell ✓
-10		2nd Layer Floor Tile Under	5th Floor - by NE Stairwell ✓
-11		Carpet	✓
-12		↓	✓
-13		Assoc. Mastic w/ 2nd	✓
-14		Layer Floor Tile Under	✓
-15		Carpet	↓ ✓
-16		12x12 Floor Tile -	5th Floor - by NW Stairwell ✓
-17		Beige w/ Grey Streaks	5th Floor - by SW Stairwell ✓
-18		↓	4th Floor - by SW Stairwell ✓
-19		Assoc. Mastic w/ 12x12 Floor Tile	5th Floor - by NW Stairwell ✓
-20		Beige w/ Grey Streaks	5th Floor - by SW Stairwell ✓
↓ -21		↓	4th Floor - by SW Stairwell ✓

Comments: Please email results to arodriguez@ccaltd.com & dlantry@ccaltd.com

Relinquished By: [signature] Date/Time 11/23/22
Received By: [signature] Date/Time 11-23-2022 13:00
Relinquished By: Date/Time
Received By: Date/Time

Carnow, Conibear & Assoc., Ltd.
Environmental Consulting Services
600 W. Van Buren St., Suite 500, Chicago, IL 60607
t: 312.782.4486 f: 312.782.5145
www.ccaltd.com

361866

CARNOW CONIBEAR

CHAIN OF CUSTODY RECORD-PLM ASBESTOS

Project No: A12834w001
Client: PBCC
Date: 11/23/22
Turn Around: 1 Day

Project Name: Center Building
Project Location: 1819 W. Pershing Rd Chicago, IL
Collected By: **Anthony Rodriguez**

Sample ID/Number:	PLM % Asb.	Sample Description/Location	
AR112322-22		12x12 Floor Tile - White w/	4th Floor - by NW Stairwell ✓
-23		Grey Streaks	✓
-24		↓	✓
-25		Assoc. Mastic w/ 12x12	✓
-26		Floor Tile - White w/ Grey	✓
-27		Streaks	✓
-28		Brown Give Pucks	4th Floor N. Mech. Rm ✓
-29		↓	by Elevator A-5 ✓
-30		↓	↓ ✓
-31		12x12 Floor Tile - Mottled	2nd Floor by NE Stairwell ✓
-32		Brown w/ Flecks	✓
-33		↓	✓
-34		Assoc. Mastic w/ 12x12	✓
-35		Floor Tile - Mottled Brown	✓
-36		w/ Flecks	✓
-37		12x12 Floor Tile - Stone	1st Floor by NW Stairwell ✓
-38		Pattern	✓
-39		↓	✓
-40		Assoc. Mastic w/ 12x12	✓
-41		Floor Tile - Stone Pattern	✓
↓ -42		↓	✓

Comments: Please email results to arodriguez@ccaltd.com & dlantry@ccaltd.com

Relinquished By: Anthony Rodriguez Date/Time 11/23/22
Received By: [signature] Date/Time 11-23-2022 13:00
Relinquished By: [signature] Date/Time
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CARNOW CONIBEAR

361866

CHAIN OF CUSTODY RECORD-PLM ASBESTOS

Project No: A12834 wood
Client: PBCC
Date: 11/23/22
Turn Around: 1 Day

Project Name: Center Building
Project Location: 1819 W Pershing Rd Chicago, IL
Collected By: **Anthony Rodriguez**

Sample ID/Number:	PLM % Asb.	Sample Description/Location	
AR112322-43		12x12 Floor Tile - Beige	1st Floor by NE Stairwell ✓
-44		Under carpet - 2nd Layer	Hallway ✓
-45		↓	✓
-46		Assoc. Mastic w/ 12x12	✓
-47		Beige Floor Tile -	✓
-48		2nd Layer	↓ ✓
-49		3rd Layer Floor Tile - Brown	1st Floor by NE Stairwell ✓
-50			Hallway ✓
-51			✓
-52		Assoc. Mastic w/ 3rd Layer	✓
-53		Floor Tile - Brown	✓
-54		↓	✓
-55		3rd Layer Floor Tile -	1st Floor by NE Stairwell ✓
-56		Green	Hallway ✓
-57		↓	✓
-58		Assoc. Mastic w/ 3rd Layer	1st Floor by NE Stairwell ✓
-59		Floor Tile - Green	- Hallway ✓
-60		↓	↓ ✓

Comments: Please email results to arodriguez@ccaltd.com & dlantry@ccaltd.com

Relinquished By: Anthony Rodriguez Date/Time 11/23/22
Received By: [signature] Date/Time 11-23-2022 13:00
Relinquished By: Date/Time
Received By: Date/Time

APPENDIX C

Lead-Based Paint Field Data Sheets

Carnow, Conibear & Assoc., Ltd.
Environmental Consulting Services
600 W. Van Buren St., Suite 500, Chicago, IL 60607
t: 312.782.4486 f: 312.782.5145
www.ccltd.com

CARNOW CONIBEAR

XRF CALIBRATION CHECK TEST RESULTS

Client: [redacted] PBC Date: 11/28/22

Address: 189 W Pershing

XRF Serial #: 2239

XRF Instrument: Heuresis Pb200i

Inspector/License #: Mitch Kurka #100 3135

XRF Unit File #:

Calibration Check Tolerance Used: +/- 0.2 mg/cm² on 1. mg/cm² Heuresis Standard

Time Corrected Mode – Duration of Test is *seconds long*

CALIBRATION CHECK (Bare Wood)

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference From Average & 0.0 mg/cm²	Acceptable Yes/No
8:10	0.0	0.0	0.1	0.0	0.0	Yes

CALIBRATION CHECK (Painted)

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference Between Average & 0.0 mg/cm²	Acceptable Yes/No
8:11	0.9	0.8	0.8	0.8	0.1	Yes

CALIBRATION CHECK (Painted)

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference Between Average & 0.0 mg/cm²	Acceptable Yes/No

CALIBRATION CHECK ( )

Calibration Time	1st Reading	2nd Reading	3rd Reading	Average Reading	Difference Between Average & 0.0 mg/cm²	Acceptable Yes/No

Lead Based Paint XRF Data Sheet

Client: PBC | Building Address: 1819 N. Pershing | City: Chicago | Inspection Date: 11/28/2022

Area Description: 5th Floor, 4th, 3rd Floor | State: IL | Inspector: Mitch Kurka | License #: 1003135

XRF Serial #: 2239 | XRF Instrument: Heuresis Pb200i | XRF Unit /File #: | Inspector's Signature:

XRF Test Shot #	Test Location	Component	Substrate	Color	Condition Assessment Deterioration Present?	Estimated Damage	XRF Reading mg/cm²	Classification P=Positive ≥1.0 N=Negative <1.0
	5th Floor West office	Sprinkler Pipe	Metal	Beige	(Y) N	5 feet	0.5	P (N)
	5th Floor Center Stairways	Ceiling	Concrete	Beige	(Y) N	10 sf	7.7	(P) N
	✓ ✓ North East Stairway	Ceiling	Concrete	Beige	(Y) N	>10 sf	5.2	(P) N
	✓ ✓ North Mech. room	Ceiling	Concrete	Beige	(Y) N	2 sf	0.7	P (N)
	✓ ✓ South East Center Stways	Ceiling	Concrete	Beige	(Y) N	5 sf	0.2	P (N)
	✓ ✓ South Cafeteria	Ceiling	Metal	Dark Beige	Y (N)		0.0	P (N)
	4th Floor Center Stways	Ceiling	Concrete	Light Beige	Y (N)		0.3	P (N)
	✓ ✓ Center W Corridor	Sprinkler pipe	Metal	light Beige	Y (N)		0.3	P (N)
	✓ ✓ North West Corridor	Sprinkler Pipe	Metal	Light Beige	(Y) N	>10 sf	0.4	P (N)
	✓ ✓ North West Stways	Ceiling	Concrete	Light Beige	(Y) N	>10 sf	0.6	P (N)
	✓ ✓ North Corridor	Sprinkler Pipe	Metal	light Beige	(Y) N	>10 sf	0.0	P (N)
	✓ ✓ North East Stways	Ceiling	Concrete	Black	(Y) N	>10 sf	0.3	P (N)
	✓ ✓ North Mech. room	Ceiling	Concrete	Dark Beige	Y (N)		0.2	P (N)
	✓ ✓ North Mech. room	Ceiling	Concrete	White	Y (N)		0.2	P (N)
	✓ ✓ Center East Stways	Ceiling	Concrete	Dark Beige	(Y) N	>10 sf	0.2	P (N)
	✓ ✓ South Mech. room	Ceiling	Concrete	light ✓	Y (N)		0.2	P (N)
	✓ ✓ ✓	Sprinkler	Metal	off White	Y (N)		0.0	P (N)
	3rd Floor Center Stways	Ceiling	Concrete	light Beige	Y (N)		0.1	P (N)
	✓ ✓ Elevator Allarea	Ceiling	Concrete	light Beige	(Y) N	>10 sf	0.2	P (N)
	✓ ✓ Elevators All area	Sprinkler pipe	Metal	Black	Y (N)		0.1	P (N)
	✓ ✓ Center East Stways	Ceiling	Concrete	Dark Gray	Y (N)		1.6	(P) N
	✓ ✓ North Corridor	Ceiling	Concrete	off white	Y (N)		1.0	(P) N
	✓ ✓ North West Stways	Ceiling	Concrete	off white	Y (N)		2.8	(P) N
	✓ ✓ North West Stways	Sprinkler pipe	Metal	off white	Y (N)		0.1	P (N)
	✓ ✓ North East Stways	Ceiling	Concrete	off white	Y (N)		7.7	(P) N

CARNOW CONIBEAR

Lead Based Paint XRF Data Sheet

Client: PBC | Building Address: 1819 W. Pershing | City: Chicago | Inspection Date: 12/28/2022

Area Description: 3rd Floor, 2nd Fl, 1st Fl, 2nd Fl | State: IL | Inspector: Mitch Kurka | License #: 1003135

XRF Serial #: 2239 | XRF Instrument: Heuresis Pb200i | XRF Unit /File #: | Inspector's Signature:

XRF Test Shot #	Test Location	Component	Substrate	Color	Condition Assessment Deterioration Present?	Estimated Damage	XRF Reading mg/cm²	Classification P=Positive ≥1.0 N=Negative <1.0
	3rd Floor NorthEast Stways	Sprinkler Pipe	Metal	off white	Y (N)		0.2	P (N)
	✓ ✓ ✓ Stways	Drain Pipe	Metal	Beige	(Y) N	> 10 Sf	0.1	P (N)
	2nd Floor Center Storage	Sprinkler Pipe	Metal	Red Brown	Y (N)		0.1	P (N)
	2nd Floor by elevator All	Floor	Concrete	Black	(Y) N	2 Sf	0.1	P (N)
	✓ ✓ South Storage area	Ceiling	Concrete	off White	(Y) N	> 5 Sf		P N
	1st Fl. NorthEast Corri	Ceiling	Concrete	off White	Y (N)		9.8	(P) N
	1st Fl. NorthEast Corridor	Sprinkler Pipe	Metal	off White	Y (N)		0.2	P (N)
	1st South Storage by Alleyway	Ceiling	Concrete	Brown	(Y) N	7 10 Sf	9.5	(P) N
	✓ ✓ ✓ ✓ Alleyway	Sprinkler Pipe	Metal	Black	Y (N)		0.2	P (N)
	✓ fl. Center East Stways	Ceiling	Concrete	off white	Y (N)		6.4	(P) N
	1st Fl. ✓ ✓ ✓	Sprinkler Pipe	Metal	off white	Y (N)		0.3	P (N)
	✓ ✓ NorthWest by Stways	Ceiling	Concrete	Light Beige	Y (N)		4.7	(P) N
	✓ ✓ NorthWest by St.ways	~~Ceiling~~ Sprinkler Pipe	~~Metal~~	Black	Y (N)		0.2	P (N)
	2nd Fl NorthWest by St.ways	Ceiling	Concrete	White	Y (N)		0.2	P (N)
	2nd Fl North West ✓ ✓	Sprinkler Pipe	Metal	white	Y (N)		0.5	P (N)
	✓ ✓ North East Corridor	Ceiling	Concrete	off White	Y (N)		0.03	P (N)
	✓ ✓ NorthEast Corridor	Sprinkler Pipe	Metal	off White	Y (N)		0.4	P (N)
	✓ ✓ North Corridor	Ceiling	Concrete	off White	Y (N)		0.2	P (N)
	✓ ✓ ✓ ✓	Sprinkler Pipe (White)	Metal	✓ ✓	Y (N)		0.1	P (N)
	✓ ✓ ✓ ✓	Sprinkler Pipe (Brown)	✓	Brown	Y (N)		0.1	P (N)
	✓ ✓ Center West St.ways	Ceiling	Concrete	off White	Y (N)		0.2	P (N)
	2nd Fl. ✓ ✓ ✓	Sprinkler Pipe	Metal	Black	Y (N)		0.3	P (N)
	✓ ✓ South East St.ways	Ceiling	Concrete	Dark Beige	(Y) N	> 10 Sf	1.2	(P) N
	✓ ✓ South East St.ways	Sprinkler Piper	Metal	Black	Y (N)		0.3	P (N)
	✓ ✓ ✓ ✓ ✓ ✓	Ceiling radiator	Metal	Red Brown	Y (N)		0.2	P (N)

Lead Based Paint XRF Data Sheet

Client: PBC | Building Address: 1819 W. Pershing | City: Chicago | Inspection Date: 11/28/2022

Area Description: 2nd Floor, 1st Floor, Basement | State: IL | Inspector: Mitch Kurka | License #: 1003135

XRF Serial #: 2239 | XRF Instrument: Heuresis Pb200i | XRF Unit /File #: | Inspector's Signature:

XRF Test Shot #	Test Location	Component	Substrate	Color	Condition Assessment Deterioration Present?	Estimated Damage	XRF Reading mg/cm²	Classification P=Positive ≥1.0 N=Negative <1.0
	2nd Fl Storage by Alley	Ceiling	Concrete	off w/hite	Y (N)		0.1	P (N)
	✓ ✓ ✓ by Alley elev.	Sprinkler pipe	Metal	Black	Y (N)		0.2	P (N)
	1st Fl Center/West St.-ways	Ceiling	Concrete	off white	Y N		1.0	(P) N
	✓ ✓ ✓ ✓ ✓	Sprinkler pipe	Metal	off white	Y N		0.2	P (N)
	Basement ✓ ✓ ✓	Ceiling	Concrete	off white	(Y) N	5 SF	0.02	P (N)
	Basement ✓ ✓	Sprinkler pipe	Metal	Black	Y (N)		0.1	P (N)
	✓ North/West St.-ways	Sprinkler pipe (Beige)	Metal	Beige	(Y) N	> 10 SF	0.0	P (N)
	✓ ✓ ✓	✓ ✓ (Black)		Black	Y (N)		0.5	P (N)
	Basement North East (Janitor room)	Ceiling	Concrete	w/hite	(Y) N	> 10 SF	5.5	(P) N
	✓ ✓	Sprinkler pipe	Metal	w/hite	Y (N)		0.0	P (N)
	✓ By North East Stways	Ceiling	Concrete	Black	(Y) N	> 10 SF	3.6	(P) N
	✓ by North East Stways	Sprinkler pipe	Metal	Black	(Y) N	5 SF	0.6	P (N)
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N
					Y N			P N

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements indicated and specified, and as required for installation of new work required for the completion of the project.

1.02 RELATED REQUIREMENTS

A. Section 00 31 00 - Available Project Information: Contractor to review existing building survey(s) conducted by Board; as well as all available information about known hazardous materials.

B. Section 02 64 00 - Aboveground Storage Tank Removal

C. Section 02 65 00 - Underground Storage Tank Removal

D. Section 02 82 13 - Asbestos Abatement - Prior to Demolition

E. Section 02 82 14 - Asbestos Abatement - Interiors

F. Section 02 82 15 - Asbestos Abatement - Exteriors

G. Section 02 83 19.13 - Lead-Based Paint Abatement

H. Section 02 83 20 - Minor Disturbance of Painted Surfaces

I. Section 02 86 13 - Hazardous and Universal Waste Management

J. Section 02 87 13 - Animal Excrement and Carcass Abatement

K. Section 01 74 19 - LEED Construction Waste Management and Disposal.

L. Section 31 22 00 - Grading: Topsoil removal.

M. Section 31 23 23 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.03 REFERENCE STANDARDS

A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

B. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings; 2011.

1.04 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them in accordance with Division 31 Sections, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction, where indicated, and deliver them to Board ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Contractor to confirm abatement of hazardous materials and asbestos-containing materials prior to demolition activities.

B. Preinstallation Meeting: Conduct a preinstallation meeting at least one week prior to the start of the work of this section.
   1. Ensure required submittals have been provided with sufficient time for review prior to scheduling the Preinstallation Meeting.
   2. Review the detailed requirements for the work of this section and to review the drawings and specifications for this work
      a. Require attendance by all affected installers including but not limited to
         1) Contractor's Superintendent
         2) Installer
         3) Manufacturer/Fabricator Representative
         4) Other affected Subcontractors
         5) Architect/Engineer of Record
         6) Board’s Representative
   3. Review the scope of work, inspect and discuss condition of construction areas to be selectively demolished.
   4. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   5. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
   6. Review areas where existing construction is to remain and requires protection.
   7. Record minutes and distribute copies within 5 days after meeting to participants as well as Architect/Engineer of Record, Board and those affected by decisions made.

C. Materials Ownership: Historic items indicated and historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Board that may be encountered during selective demolition remain Board's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Board.
   1. Coordinate with Board who will establish special procedures for removal and salvage.

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. See Section 01 33 29 - LEED Sustainable Design Reporting, when required.

C. Schedule of Selective Demolition Activities: Indicate the following:
   1. For purposes of Board’s information only, sequence of selective demolition and removal work, with starting and ending dates for each activity as well as shift starting and ending times. Ensure Board's on-site operations are uninterrupted.

2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs if acceptable to the Board.
5. Locations of proposed dust- and noise-control temporary partitions and means of egress.
6. Coordination of Board's continuing occupancy of portions of existing building and of Board's partial occupancy of completed Work.
7. Means of protection for items to remain in the building and items in path of waste removal from building.
8. Path of waste removal from building and locations of waste containers.

D. Predemolition Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, that might be misconstrued as damage caused by building demolition operations. Submit before beginning work on this section.

E. Inventory: After demolition is complete, submit a list of items that have been removed and salvaged for Board.

F. Liquid Materials Handling Plan: Prior to commencing work, the Contractor shall provide a liquid materials handling plan. The plan shall stipulate provisions for dewatering, pumping, collection, temporary storage, and discharge or disposal of storm water, perched water and other liquids, contained and /or uncontained, at the site so as to facilitate removal of materials from the site and minimize disposal costs for contained materials.

G. Landfill Records: Provide disposal receipts and acceptance of wastes from the permitted Subtitle D Landfill to Board’s Representative.

H. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.07 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with all governing environmental regulations prior to and during demolition. Comply with requirements of authorities having local, state and federal jurisdiction and the City of Chicago. Comply with all requirements related to lead paint; asbestos containing materials; PCB’s; universal and hazardous materials; environmental dust control; health related hazards; and air, water, and ground quality. Comply with requirements for the management and legal disposal of waste materials.

D. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

1.08 FIELD CONDITIONS

A. Conditions existing at the time of inspection for bidding purposes will be maintained by the Board insofar as practicable.
1. Before selective demolition, Board will remove the following items:
a. LIST ITEMS TO BE REMOVED BY OWNER

PART 2 - PRODUCTS -- NOT USED

PART 3 - EXECUTION

3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Comply with applicable requirements of NFPA 241.
   3. Use of explosives is not permitted.
   4. Verify that area to be demolished is vacated and use discontinued prior to the start of the Work.

B. Take precautions to prevent catastrophic or uncontrolled collapse of existing construction being removed and to remain do not allow worker or public access within range of potential collapse of unstable construction.
   1. Engage a demolition engineer to perform an engineering survey of existing conditions of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.
   2. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction and finishes to remain. Strengthen or add new supports when required during progress of demolition

C. Board will occupy portions of the building immediately adjacent to selective demolition area(s). Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
   2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
   3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
   4. Cover and protect furniture, furnishings, and equipment that have not been removed.

D. Provide, erect, and maintain temporary barriers and security devices necessary for execution of the work and to protect Board's property and operations. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 01 50 03 - Temporary Facilities and Controls - Renovation and Section 01 56 11 - General Dust, Fume, and Odor Controls.

E. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   1. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

F. Start work under this section only after asbestos and/or hazardous materials have been removed in accordance with Related Sections.

G. If hazardous materials are discovered during removal operations, notify Board's Representative. Start of operations will be evidence of acceptance that environmental conditions have been

remedied in accordance with applicable Division 2 and Division 31 Sections, and Environmental Manual.

H. Remove and store refrigerant according to 40 CFR 82 and regulations of authorities having jurisdiction.

I. Perform demolition in a manner that maximizes salvage and recycling of materials.

3.02 EXISTING UTILITIES

A. Maintain existing utilities required to remain in service and protect them against damage during selective demolition operations.

B. Maintain existing fire-protection facilities in service during selective demolition operations.

C. Inspect the facility for the presence of special systems that must be maintained operational during demolition in the presence of the Board. Such systems include security systems, access control systems, fire and smoke detection and alarm systems and communication systems.
1. Develop a strategy with the Board to maintain such systems operational during alterations including temporary re-working, unavoidable downtime, acceptable discontinuation of service intervals and contingencies for notification of involved agencies.
2. Instruct every Subcontractor as to the procedures to be followed and supervise the process to ensure implementation.
3. Restore such systems and extend them into the altered area.
4. Include all services and materials necessary to maintain special systems in the Contract Sum.

D. Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.03 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and coordinate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect/Engineer of Record.

E. Record existing conditions by use of preconstruction photographs and preconstruction videotapes.

1. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.04 SELECTIVE DEMOLITION

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
2. Report discrepancies to Architect/Engineer of Record before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Remove existing work as indicated on drawings and as required to accomplish new work. Remove existing construction only to the extent required by new construction.

C. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.
4. Patch as specified for patching new work.
5. Where possible Items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete

D. Use methods required to complete the selective demolition work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
   a. Maintain adequate ventilation when using cutting torches.
5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site at a permitted Subtitle D landfill facility.
6. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
7. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
8. Dispose of demolished items and materials at a permitted Subtitle D landfill promptly.

3.05 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI (RWP) .
   1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI (RWP).

E. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.06 MANAGEMENT OF DEMOLISHED MATERIALS

A. Separate recyclable demolished materials from other demolished materials to the maximum extent possible. Separate recyclable materials by type.
   1. Provide containers or other storage method for controlling recyclable materials until they are removed from Project site.
   2. Stockpile processed material on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   3. Stockpile materials away from demolition area. Do not store within drip line of existing trees to remain.
   4. Store recyclable and salvaged components off the ground and protect from the weather.

B. For items indicated to be Removed and Salvaged:
   1. Clean salvaged items.
   2. Pack or crate items after cleaning. Identify contents of containers.
   3. Store items in a secure area until delivery to Board.
   4. Transport items to storage area designated by Board.
   5. Protect items from damage during transport and storage.

C. For items indicated to be Removed and Reinstalled:
   1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

3.07 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site immediately. Legally dispose of non-recyclable debris, and other materials resulting from demolition operations in accordance with Division 31 Sections as applicable.

B. Burning of removed materials will not be permitted on the site.

C. Sale of removed materials will not be permitted on the site.

D. Remove from site all materials not to be reused on site; do not burn or bury. Comply with requirements in Division 31.

E. Leave site in clean condition, ready for subsequent work.

F. Clean up spillage and wind-blown debris from public and private lands.

G. Clean adjacent structures and improvements of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began

END OF SECTION 02 41 19

SECTION 02 82 00
ASBESTOS ABATEMENT SPECIFICATION

PART 1 - GENERAL

1.1 INTRODUCTION

Asbestos abatement and related support work is required to follow IEPA, NESHAP, and applicable OSHA rules. This specification is intended to provide for the removal of friable asbestos containing materials along with any targeted Category I or II non-friable asbestos-containing materials that may become friable during renovation or demolition operations. Abatement of specific materials is specified in the scope of work form.

1.2 DEFINITIONS:

In addition to the terms listed below, all definitions in the laws and regulations listed in Section 1.4 are incorporated by reference, whether or not restated herein.

Abatement Contractor (AC) means the entity responsible for performing the work in this section, and has the training and accreditation to competently perform the work. This entity will obtain and maintain licenses required for the work specified in this document.

Asbestos Abatement Supervisor, hereinafter referred to as Asupervisor@ means any person who supervises asbestos abatement workers. This person must be trained, accredited, and must meet OSHA Acompetent person@ criteria for asbestos abatement.

Environmental Consultant (EC) is selected by the Owner to inspect the job site, perform environmental monitoring, and act as Environmental Project Manager on behalf of the Owner or its agents to include but not be limited to project oversight, air sampling activities, air clearance activities, and sample analysis as required, and all duties as outlined and required by the Owner.

HEPA Filter means a High Efficiency Particulate Air filter capable of trapping 99.97% percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.

IDPH means the Illinois Department of Public Health.

IEPA means the Illinois Environmental Protection Agency.

SDS means Safety Data Sheet, required by OSHA for any substances which are toxic, caustic, or otherwise hazardous to workers.

Plasticize means to apply plastic sheeting over surfaces or objects to protect them from contamination or water damage.

PPE (Personal Protection Equipment) means the protective suits, head and foot covers, gloves, respirators and other items used to protect persons from asbestos or other hazards.

Work Area means the area or areas where asbestos abatement is being conducted.

1.3 WORK INCLUDED

A. The work includes all labor, equipment, materials, and supplies necessary to perform the Scope of work in the Documents by the procedures or performance standards described herein. The contractor, by submitting a bid for the work, represents itself as knowledgeable and expert in the performance of the work, and includes all things usually and customarily necessary to provide a complete and finished job, whether specifically mentioned or not.

B. Removal of friable and non-friable asbestos-containing materials listed in the Documents, including isolating the work areas, protection of adjacent areas, cleanup, proper packaging and disposal of wastes, and all other steps necessary to complete the scope of work.

C. Compliance with all applicable laws, regulations, standards, and these specifications. In the case of a conflict, the contractor will comply with the most stringent.

D. All licenses, accreditations, permits, fees, notifications, reports, or other documents required by law, regulation, this specification, or the Documents.

E. Provide project closeout documentation to the Environmental Project Manager (EC) within thirty days (30) days after final clearance. This documentation shall include, but is not limited to, items listed in paragraph 1-7, Submittals.

1.4 LAWS, REGULATIONS AND STANDARDS

A. The following laws, regulations, and standards are incorporated by reference:

1. 77 Ill. Adm. Code 855 Asbestos Abatement for Public and Private Schools and Commercial and Private Buildings in Illinois
2. 29 CFR 1910.134 US OSHA Respiratory Protection
3. 29 CFR 1926 US OSHA Construction Standards
4. 29 CFR 1926.1101 US OSHA Asbestos Construction Standards
5. 40 CFR Part 61 US EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP), 11/90 revision
6. 40 CFR 763 Subpart E US EPA Asbestos Model Accreditation Plan (MAP): Appendix C Interim Final Rule

1.5 ASSESSMENT, MONITORING, TESTING AND ANALYSIS

A. EC will perform inspection and testing services prior to the start of work. The EC will perform all testing, inspection, and monitoring services during the work and upon its completion:
1. Prior to the start of the work
   a. The EC shall collect background air samples before conditions are disturbed. Background samples will be analyzed by PCM.
2. During the work, the EC shall:
   a. Observe the work periodically, with sufficient frequency to ensure contractor compliance.
   b. Assure that all personnel and visitors have the proper current medical screening, respirator fit test, and training for their respective duties prior to entering a regulated area.
   c. Collect PCM air samples in and around the work area, as needed, to verify exposure conditions.
   d. The EC may stop the work if airborne asbestos concentrations at the work area perimeter exceed 0.01 f/cc. Contractor will be responsible for taking corrective action to reduce exposure levels and prevent recurrence; cleaning adjacent areas that become contaminated by the asbestos abatement activities.
3. Upon completion of the work:
   a. The EC will visually inspect for visible debris and confirm completion of the

scope of work. Contractor shall be required to re-clean the area or portions of areas until no visible debris remains.

b. Final aggressive clearance samples (PCM) will be collected by EC.

B. The Contractor shall provide OSHA compliance air monitoring to determine exposures to its employees in accordance with OSHA 29 CFR 1926.1101. Frequency of monitoring will comply with OSHA requirements for the anticipated and actual exposure levels.

1. A written Exposure Assessment prior to the start of the work to determine the requirements for respiratory protection and frequency of OSHA monitoring for each type of activity. The contractor should note that a Negative Exposure Assessment (NEA) may be possible for these tasks.
2. Analysis may be performed on site.

C. Credentials required for testing and analysis of PCM air samples:

1. Accreditation by AIHA or AAR; or
2. Participation in the Proficiency Analytical Testing (PAT) program.
3. Certification of qualification to read samples on site when on site analysis is conducted.

1.6 SUBMITTALS BY THE CONTRACTOR:

A. NESHAP notification to the Illinois EPA Asbestos Notification on revised form, including inspector name and license no. and landfill permit no.

1. Notifications shall be submitted at least 10 working days prior to start of abatement
2. Notification shall also be submitted to the IDPH at least 2 working days prior to the start of abatement for if quantities are equal tor greater than 3 square feet or 3 linear feet or more, but less than 260 linear feet or 160 square feet.
3. Evidence that all contractor employees in the work areas are trained and accredited in accordance with OSHA, NESHAP, and EPA MAP requirements:
   a. Initial training certificate.
   b. Current Annual refresher training certificate.
   c. Current IDPH asbestos license.
   d. Current physician’s written opinion
   e. Current respirator fit test for negative pressure respirators when respirators are used.
   f. Copy of OSHA Exposure Assessment, if available.
   g. OSHA compliance air monitoring records generated during the project.
   h. Waste Shipment Records.
   i. Worker license and certification log, supervisors written daily log(s), and all site documentation of personnel.
   j. Material Safety Data Sheets (MSDS) for chemicals used on site.
   k. Work Plan and Schedule.

PART 2 - PRODUCTS

2.1 TOOLS AND EQUIPMENT. All equipment shall at least conform to minimum industry standards:

A. Equipment:

1. Respirators shall be NIOSH approved for use with lead, asbestos, or other contaminants anticipated in the work.
2. Contractor is fully responsible for complying with OSHA rules for other Safety equipment, such as hard hats, safety harnesses, eye protection, gloves, footwear, and any other safety devices used on the site.

B. Tools:
1. Power tools such as, but not limited to saws, pneumatic chisels, brushes, sanders, and needle guns shall be equipped with shrouds and HEPA-filtered local exhaust systems, or water spray systems, to minimize airborne release of particles.
2. In accordance with OSHA regulations, all receptacle outlets utilized that are not part of the permanent wiring of the building or structure shall have ground-fault circuit-interrupted protection in place.

2.2 MATERIALS

A. Installed materials which become a part of the work such as, but not limited to, encapsulants shall be of good quality, non-lead-bearing, free of asbestos, and conform to the respective reinstallation specification sections.
1. Contractor shall ensure that encapsulants and sealants used as primers, basecoats, or covering existing materials are compatible with the respective existing or reinstallation materials and their manufacturers' warranties.

B. Abatement materials
1. Poly sheeting for all applications shall be a minimum of 6 mil nominal thickness.
2. Tape shall be 2" or 3" duct tape or other waterproof tape suitable for joining poly seams and attaching poly sheeting to surfaces.
3. Spray adhesives shall be non-flammable and free of methylene chloride solvents.
4. Disposal bags shall be a minimum of 6 mil nominal thickness and be appropriately labeled in accordance with 29 CFR 1926.1101.
5. Disposable suits, hoods, and foot coverings shall be TYVEK or similar.
6. Solvents shall be compatible with any primers, mastics, adhesives, paints, coatings, or other surfacing materials to be installed following their use.

PART 3 - EXECUTION

3.1 EMPLOYEE TRAINING, QUALIFICATION AND MEDICAL SCREENING

A. Supervisors and Workers shall be trained, accredited, and licensed in accordance with IDPH rules:
1. Contractor shall keep copies of licenses, initial training course certificate, and most recent annual refresher training certificate at the jobsite at all times for all contractor personnel.
2. A supervisor (competent person) shall be present at the work site at all times when work under this section is being conducted.

B. Medical Screening. All contractor personnel shall have a current medical examination in accordance with OSHA requirements. Copies of the Physician's Written Opinions shall be kept on site.

3.2 PERMISSIBLE EXPOSURE LIMITS

A. The OSHA permissible exposure limit (PEL) for worker exposure to airborne fibers is 0.1 f/cc as an 8-hour time-weighted average (TWA).
B. The OSHA short term excursion limit (STEL) for worker exposure to airborne fibers is 1.0 f/cc for a 30-minute sample.

3.3 EXPOSURE ASSESSMENT AND MONITORING

A. The Contractor shall make a written assessment of the airborne exposures. Assessment shall conform with OSHA requirements and may be based upon:
   1. Initial monitoring of representative workers who the contractor believes are exposed to the greatest airborne concentrations of asbestos, or
   2. Past monitoring (within the past 12 months) or objective data for conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions to be used for this Documents, or
   3. In the absence of a written exposure assessment the contractor shall perform the work in a full negative pressure containment with Type C pressure-demand respirator with auxiliary SCBA escape bottle.

B. The contractor shall perform personal monitoring in accordance with the following requirements:
   1. Initially, to establish an exposure assessment when past monitoring or objective data are not available for an initial determination.
   2. Daily, if the exposures are, or are expected to be, above the PEL of 0.1 f/cc.
   3. Periodically if the exposures are, or are expected to be, below the PEL.
   4. Whenever there has been a change of equipment, process, control, personnel, or a new task has been initiated that may affect employee exposures, the exposure assessment shall be updated, and monitoring shall be reinstituted if exposures are unknown or are expected to exceed the PEL.
   5. Area Monitoring is required at the perimeter of the work area to verify that exposures to adjacent areas are below the PEL.

3.4 RESPIRATORY PROTECTION

A. Respiratory protection shall be worn by all persons potentially exposed to airborne asbestos fibers above the limits shown on the following chart.

TASK	Exposure Limit	Respirator Type
OSHA Class I (friable)	≤ 1.0 f/cc	PAPR
	> 1.0 f/cc	Type C Pressure Demand with auxiliary SCBA
OSHA Class II (non-friable)	≤ 0.1 f/cc	Recommended, but not required
	≤ 1 f/cc	1/2 mask APR
	≤ 5 f/cc	Full face APR when quantitatively fit-tested
	≤ 10 f/cc	PAPR
	≤100 f/cc	Type C Pressure Demand
	≥100 f/cc	Type C Pressure Demand with auxiliary SCBA bottle

B. Contractor shall have a written respiratory protection program in accordance with OSHA 29 CFR 1910.134, including but not limited to, medical screening, semi-annual (every 6 months) fit testing, training, cleaning and maintenance.

C. Respirators shall not be removed while in the work area.

D. Only NIOSH-approved respirators shall be used.

E. Additional respiratory protection, such as organic vapor cartridges, may be needed when handling some solvents, coatings, or stripping products. Consult the MSDS, manufacturer,

or industrial hygienist, and obtain the proper filters and usage as necessary.

3.5 HYGIENE PRACTICES

A. Eating, drinking, smoking, chewing gum or tobacco, and applying of cosmetics are not allowed in the work area.

B. All authorized persons entering the work area shall wear appropriate PPE when exposures are above the PEL and shall follow the entry and exit procedures posted in the Personnel Decontamination Enclosure System.

C. Personal Protection Equipment (PPE) shall include:
1. Full body disposable suits, headgear, and footwear.
2. Gloves.
3. Hard hats.
4. Non-disposable footwear and clothing, which remain in the work area and shall be decontaminated or disposed of as contaminated waste when the job is completed.
5. Authorized visitors shall be provided with suitable PPE when PPE is required in the work area. The EC and Contractor shall assure that visitors have proper and current medical screening and fit test (for negative pressure respirators), and awareness training or other appropriate training.
6. PPE is required when exposures are or are expected to be above the PEL.

D. Personnel Decontamination Facility is required for this project and shall be attached to the work area when friable materials are removed or when non friable materials may become friable during the removal process.

1. Establish and maintain a negative pressure of at least 0.02 WC between the dirty equipment room and adjacent spaces, including the clean room. Assume NAMs operate at 80% design capacity.
2. Provide at least 4 air changes per hour within the regulated work area.

E. When exposures are below the PEL, protective disposable suits are recommended, but not required. To exit, persons shall HEPA-vacuum down clothing at the work area entry, and leave the work area. When disposable suits are used, they shall be HEPA-vacuumed, stripped off, and deposited in an asbestos disposal bag prior to departing the containment or decontamination chamber as required. Personnel may then leave the work area.

3.6 PROHIBITED ACTIVITIES

A. Dry removal or dry sweeping, except:
1. During freezing weather. In this case, temperature and weather conditions must be recorded at the start, during, and at the end of the shift.
2. On roofs with 3:1 slope or greater. In this case, roofing shall be removed in an intact condition, as much as possible.
3. For roofing areas of less than 25 square feet.
4. When equipment damage or other hazard exists. In this case, written permission from IEPA is required prior to performing dry removal.

B. Use of compressed air for cleaning.

C. Use of high-speed power tools NOT equipped with a HEPA-filtered local exhaust or water spray system.

D. Eating, drinking, smoking, chewing gum, or applying cosmetics in the work area.

E. Removing respirators or other PPE in the work area.

3.7 WORK AREA ISOLATION AND PREPARATION

A. General Preparation (Containment)

1. Post OSHA asbestos warning signs (OSHA 2016) at entrances to the work area.
2. Perform all asbestos abatement within a negative pressure work enclosure with attached worker decontamination enclosure system and separate waste decontamination enclosure system.
3. Minimum 6 mil plastic sheeting shall be placed over the ground, foundation, or other surfaces below or adjacent to the abatement area.
4. Unauthorized entry shall be prevented by using appropriate barriers, such as warning tape, fencing, or other suitable barriers.
5. All electric power in the work area shall be protected with Ground-Fault Circuit Interrupters.

3.8 ABATEMENT PROCEDURES

A. General Removal Requirements:
1. Asbestos materials shall be wetted and kept wet during removal.
2. ACM shall be bagged or containerized as it is removed. Wastes shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it shall be lowered via covered, dust-tight chute, crane, hoist, or other means that prevent the wastes from being dropped or thrown.
3. Appropriate OSHA fall protection shall be provided when appropriate:
   a. scaffolding more than one section high shall be equipped with handrails and midrails designed to provide fall protection, or full-body safety harnesses shall be worn and tied off to a secure anchor point.
   b. Workers in manlifts shall wear full body harnesses and tie to the tie-off point provided on the manlift basket whenever the basket is elevated from ground level.
   c. Personal fall protection consisting of full body harnesses, lanyards, and OSHA-compliant lifelines, anchorage, and deceleration devices shall be provided whenever personnel are within 6 feet of an opening, hole, or edge where there is a risk of falling 6 feet or more.

B. Roofing
1. General: Remove in an intact state to the extent feasible ACM roof mastics, cements, underlayments, and flashings. Asbestos-containing shingles may occasionally break even when removed carefully. The fact that otherwise intact roofing materials become separated or broken does not by itself render them non-intact. However, if they become pulverized, reduced to powder or dust, they have become non-intact.
   a. The contractor shall take care to minimize the amount of roofing material damage, or;
   b. If the materials are rendered non-intact, the AC shall employ methods to contain the dust and debris and utilize hygiene practices appropriate for friable (OSHA Class I) ACM, including PPE, decontamination units, and monitoring. Monitoring may include area samples at the work area perimeter to determine that airborne asbestos fibers are not being released in concentrations above the PEL.

2. Built-up roofing and asphalt shingles:
   a. Power cutting machines shall be equipped with a HEPA-filtered dust collection system and shall be misted during use.
   b. Dust generated by the cutting operation shall be collected with HEPA vacuums or wet cleaning methods.
3. Rigid roofing materials, such as cement asbestos shingles: remove intact and minimize breakage.

C. Transite, Galbestos sheeting (galvanized metal with a baked-on asbestos paint), Asbestos/Cement pipe, or other rigid panels shall be removed using wet methods if cutting of transite is necessary.

D. Other
1. Coatings, electric cable insulation or joint coverings, and other miscellaneous materials that are to be removed with the substrate or that can be removed without becoming friable may be removed as intact (OSHA Class II, EPA NESHAP Category I or II non-friable) in accordance with procedures described in the General and Roofing Sections 3.8 A. and 3.8 C.
2. Coatings, and other miscellaneous materials that must be removed from the substrate or that otherwise will become friable must be removed as non-intact (OSHA Class I, EPA NESHAP friable) in accordance with procedures described in General and Roofing Sections herein.

3.9 CLEANING AND DECONTAMINATION

A. All visible accumulations of ACM, debris, tools, and unnecessary equipment shall be removed from the work area. Tools and equipment must be appropriately decontaminated and bagged prior to departing the containment or work area.

B. Protective poly shall be folded in on itself, rolled up, placed in asbestos disposal bags, and disposed as asbestos waste.

C. Surfaces which have been exposed to friable ACM or its dust shall be wet cleaned and HEPA vacuumed.

D. Dry sweeping of surfaces which have been exposed to friable ACM or its dust is not permitted.

3.10 GLOVEBAG REMOVAL WITHIN MINI-CONTAINMENT (TENT) GENERAL PROCEDURES

A. Glovebag removal involving the removal of more than 25 linear feet or 10 square feet of thermal system insulation shall be conducted within a mini-containment (tent) and by appropriately trained and accredited staff for the type of removal being conducted.

B. Work Area Preparation

1. Clean and isolate the Work Area.

   a. Shut down the Work Area HVAC system and seal all openings.
   b. Erect a Mini-containment (tent) consisting of one layer of 6-mil polyethylene. This mini-containment (tent) shall be constructed of 2' x 4' framing or other suitable material and include a ceiling, walls and a floor.
   c. Provide an airlock with polyethylene sheeting curtained doorway at access doors.
   d. Rope outside area with asbestos warning tape.
2. Prior to commencement, OSHA air monitoring is essential as a means of

documenting the air quality throughout the removal project. Upgrade workers respiratory protection as needed or modify removal procedures to reduce airborne fiber concentrations as required by OSHA.

3. All necessary tools and materials shall be brought into the Mini-containment (Tent) Work Area before the glove bag removal procedure begins.
4. All visible debris on the floor or other surfaces in the Work Areas shall be cleaned up by HEPA vacuuming and wet cleaning methods.
5. Post warning signs.
6. Provide decontamination facilities consisting of at least a clean room, shower room and equipment room within reasonable proximity to all work areas but within the secured Work Area.
7. Personnel shall be provided with two disposable suits to wear during Abatement Work.

C. Glovebag Set Up

1. Mini-containment (tent) removal procedures shall be done by a minimum of two licensed asbestos workers trained in mini-containment (tent) procedures and equipped with full personnel protective equipment. Every glove bag removal shall require a mini-containment (tent) individually or collectively.

2. If any insulation on the pipe is severely damaged, either at or remote from the section of insulation being removed, wrap the entire portion of insulation in polyethylene and secure with duct tape, spiraling the length and provide a shroud around the damaged area.
3. The pipe insulation diameter shall not exceed one half the glove bag above the attached gloves.
4. Open the bag. Place tools inside. Wrap glove bag around pipe/ fitting/duct and seal the top with staples and duct tape. The glove bag is to be attached securely around the insulation, forming a smooth airtight seal.
5. Tape the ends of the glove bag to the pipe. When removing from vertical piping/fitting/duct, special care shall be taken to assure that the lower end of the glove bag is securely sealed against the pipe to ensure the glove bag remains airtight, thus no leakage.
6. Reinforce bottom of bag. Make two folds (approximately one inch each) and secure with duct tape.
7. Tape the wand from the water sprayer to the water sleeve.
8. Tape hose of HEPA vacuum to mini-containment (tent) space.
9. Each mini-containment (tent) shall be visually and smoke tube tested for air-tightness by the Contractor and verified by the EC prior to asbestos removal. Any leakage points shall be taped airtight and a retest shall occur.

3.11 NON-FRIABLE REMOVAL GENERAL PROCEDURES

A. Resilient Floor Covering. Removal of resilient floor covering shall be performed by, as a minimum, those trained in accordance with OSHA Class 2 requirements, using heat guns, infrared heat machines or other methods that remove the floor covering in whole pieces. The contractor shall insure that no damage is caused to the area or equipment below the floor. Abatement procedures are as follows:

1. Post signs so that the work area cannot be entered from any direction without observing a sign.
2. Isolate the work area from areas to remain occupied.
3. Install barriers of six mil plastic sheeting sealed with duct tape at all openings in the work area.
4. Install a curtained doorway at the entry to the work area, lock out electrical power to the room and supply required power with ground fault interruption protected circuits.
5. Wear, as a minimum, half-faced dual cartridge NIOSH-approved respirators and

double disposable suits.

6. Remove floor covering without causing excessive breakage. Work will stop and appropriate design, project management and air sampling will be put in place if excessive breakage occurs (>10% of the removed floor tiles).
7. Dispose of floor covering and debris as asbestos waste in appropriately labeled containers.
8. HEPA vacuum the work area thoroughly following completion of the removal.
9. HEPA vacuum surface of protective clothing and dispose of clothing as asbestos waste.
10. Personal air monitoring will be performed by the contractor in accordance with OSHA.

3.12 FINAL CLEARANCE

A. Cleaning may be discontinued when there is no visible debris and area air monitoring verify that exposures are below the PEL.

B. Final clearance samples for any negative pressure work enclosure will be collected aggressively by the EC accordingly to applicable IDPH requirements. The response action shall be considered complete when clearance air samples analyzed by Phase Contrast Microscopy are <0.01 f/cc.

3.13 WASTE DISPOSAL AND EQUIPMENT LOAD-OUT

A. Category I and II non-friable waste may be adequately wetted, double bagged and loaded into lined, enclosed receptacles, such as dumpsters or trailers and appropriately labeled. Receptacles shall be closeable and lockable to provide security and to prevent air emissions.

B. Packaged all asbestos wastes (RACM):
   1. Asbestos-containing wastes, including removed ACM and debris, poly, critical barrier materials, suits, respirator filters, vacuum HEPA filters, water filters, and other asbestos-containing items shall be properly packaged for disposal.
   2. Use of minimum 6 mil plastic bags with a gooseneck seal, or other impermeable containers.
   3. Wrap large or irregular items in minimum 6 mil poly sheeting and seal with tape.
   4. Sharp, jagged, or other items that may puncture poly shall be packaged in rigid impermeable containers such as drums or boxes or wrapped in burlap or other protective covering before sealing in bags or poly sheeting.
   5. Label containers for friable ACM waste:
      a. OSHA warning label.
      b. DOT performance-oriented hazardous material label.
      c. Name and address of generator and abatement location.

C. Removing items from the work area:

   1. Packaged asbestos wastes shall be HEPA-vacuumed before removing from the work area.

D. Storage of packaged asbestos wastes shall be in a completely enclosed dumpster, or other suitable container that can be secured. The secured area shall be kept locked at all times to prevent unauthorized access.

E. Shipment of items from the project.

   1. Decontaminated tools and equipment may be shipped by normal carrier to warehouse, another job site, or other destination.
   2. For asbestos wastes:

a. Line, enclosed shipping container with minimum 6 mil poly prior to loading packaged asbestos wastes.
b. Post NESHAP placards on all perimeter sides of shipping container.
c. Asbestos containing waste materials shall be transported directly to the landfill. Temporary storage at a location other than the abatement project shall not be permitted.
d. Execute the NESHAP-required Waste Shipment Record (WSR) to be signed by the generator, transporter, and landfill. All WSRs shall be returned to the EC within 30 days of shipment.

F. Only landfills approved and permitted by Illinois for accepting asbestos wastes may be used for disposal.

G. A punchlist walk through shall be conducted by the EC, abatement contractor, and owner's representative for each cleared work area within two working days of clearance testing. All punchlist items shall be completed within five working days of the walk through.

END OF SECTION

SECTION 02 8300
LEAD-BASED PAINT ABATEMENT/MITIGATION

PART 1 - GENERAL

1.1 INTRODUCTION.

The Department of Housing and Urban Development has established recommended guidelines for the mitigation or abatement of all interior and exterior lead-bearing surfaces within the Public or Indian Housing. The practices used for lead-based paint activities are covered by this specification.

1.2 DEFINITIONS:

In addition to the terms listed below, all definitions in the laws and regulations listed in Section 1.4 are incorporated by reference, whether or not restated herein.

Abatement means the work area preparation, complete removal of lead-bearing substances, and cleanup of surrounding work area to prescribed levels of decontamination.

Abatement Contractor (AC) means the entity responsible for performing the work in this section, with the training and accreditation to competently perform the work. This entity will obtain and maintain any licenses required for the work in this section.

Architect of Record (AOR) means the entity who assembles the overall documents and bid package, and approves the work.

Environmental Consultant (EC) is selected by the Owner to inspect the job site, perform environmental monitoring, perform applicable clearance activities and act as Environmental Project Manager on behalf of the Owner or its agents.

HEPA Filter means a High Efficiency Particulate Air filter capable of capturing 99.97% percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.

IDPH means the Illinois Department of Public Health.

Lead Abatement Contractor/Supervisor hereinafter referred to as “supervisor” means any person who supervises lead abatement workers. This person must be trained, accredited, and licensed as required, and must also meet OSHA “competent person” criteria for lead abatement.

Lead-Based Paint means paints or coatings that are lead bearing substances.

Lead Bearing Soil means soil containing an amount of lead in excess of applicable guidelines.

Lead Bearing Substance means any dust on surfaces or furniture or other non-permanent items and any paint or other surface coating material containing more than five-tenths of one percent (0.5%) lead by weight (calculated as lead metal) in the total non-volatile content of liquid paint, or lead bearing substances containing greater than one milligram per square centimeter or any lower standard for lead content in residential paint as may be established by federal law or regulation; or more than 1 milligram per square centimeter in the dried film of paint or previously applied substance.

Mitigation means work area preparation to repair lead-bearing substances to an intact state so that the lead bearing substance does not pose an immediate health hazard.

MSDS means Material Safety Data Sheet, required by OSHA for any substances which are toxic, caustic, or otherwise hazardous to workers.

Plasticize means to apply plastic sheeting over surfaces or objects to protect them from contamination or water damage.

Wet Cleaning means cleaning all surfaces with a phosphate-free lead dissolving detergent.

Work Area means areas where lead abatement or mitigation activities are conducted.

Work Site means the room or rooms undergoing lead abatement or mitigation activities. All closets/book rooms/coat hanger rooms/vestibules/washrooms within a room are considered part of the work site in which mitigation work has been identified on the drawings, whether or not they are numbered separately.

1.3 WORK INCLUDED

A. The work includes all labor, equipment, materials, and supplies necessary to perform the Scope of work in the Documents by the procedures described herein. The contractor, by submitting a bid for the work, represents itself as knowledgeable and expert in the performance of the work, and includes all things usually and customarily necessary to provide a complete and finished job, whether specifically mentioned or not. Related work may be shown in other related documents prepared by others, if applicable.

B. Clean-up of lead-bearing dust, flakes, and residues; mitigation or abatement of paint, architectural components, substrates, or other lead-bearing items listed in the Documents including pre-cleaning, moving of furnishings, establishing regulated areas, isolating the work areas, protection of adjacent surfaces, containment when required, cleanup and decontamination to the specified clearance levels, proper packaging and disposal of wastes, and all other steps necessary to complete the scope of work.

C. Repair or replacement of damaged surfaces, fixtures, or furnishings to restore them to their pre-existing condition to the satisfaction of the Owner.

D. When the Documents include lead and asbestos abatement items in the same spaces, they should be performed in the sequence and combinations that produce the most efficient results and the least amount of total waste. That sequence will generally be:
   1. Cleanup and removal of failed or delaminated friable asbestos-containing debris, if any.
   2. Cleanup of lead dust, flakes, chips, and residues. If these lead wastes are mixed with asbestos debris, they must be disposed together as regulated lead waste.
   3. Removal of friable asbestos materials and cleanup of visible residues.
   4. Removal of architectural components with lead-based paint still adhered, such as wood trim, doors, plaster, drywall, window frames, etc.
   5. Removal of non-friable asbestos materials from the exterior. If both asbestos and lead are on the same components, for example lead paint and asbestos-containing glazing compound, the components may be removed and disposed as construction debris as long as both the lead- and asbestos-bearing materials remain intact.
   6. Removal of lead-based paint, coatings, or surfacing material.
   7. Final cleanup and decontamination of the work space. Final air clearance (asbestos) and wipe samples (lead) may be performed concurrently.
   8. When lead and asbestos final decontamination processes are combined, the more stringent cleanup procedures will apply for both.
   9. Waste disposal.
      a. Classified waste: loose paint flakes, chips, and dust; lead cleaning and decontamination supplies; combined final decontamination supplies; contaminated soil; disposable suits, gloves, headcovers, and footcovers; respirator, vacuum, or negative air machine filters; or other items likely to fail a TCLP or RCRA test.
      b. Special waste: friable asbestos-containing waste materials and lead-contaminated waste that has passed TCLP or other RCRA tests.
      c. Construction and demolition (C&D) debris: non-friable asbestos-containing waste materials

(such as, but not limited to transite, flooring, mastics, packing, caulking); lead-bearing architectural components; cleaned poly sheeting from lead projects; concrete and lumber with or without tile or mastic attached; demolition debris, and other general wastes.

d. All asbestos-containing or lead-bearing wastes shall be disposed in an IEPA-approved landfill within the State of Illinois to accept asbestos-containing or lead-bearing waste materials.

E. Compliance with all applicable laws, regulations, standards, and these specifications. In the case of a conflict, the contractor will comply with the most stringent.

F. All licenses, accreditations, permits, notifications, reports, or other documents required by law, regulation, this specification, or the Documents.

1.4 LAWS, REGULATIONS, AND STANDARDS

A. The following laws, regulations, and standards are incorporated by reference:

1.	410 ILCS 45	Illinois Lead Poisoning Prevention Act
2.	77.I.p.845	Illinois Lead Poisoning Prevention Code
3.	29 CFR 1926	US OSHA Construction Standards
4.	29 CFR 1926.62	US OSHA Lead Exposure In Construction; Interim Final Rule
5.	HUD Guidelines	Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, Revised Chapters 5, 8, 9, 10, and 11 (June, 1996)
6.	40 CFR Part 61	US EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP)

1.5 ASSESSMENT, MONITORING, TESTING, AND ANALYSIS

A. The EC will perform inspection and testing services prior to the start of work. The EC will perform testing, inspection, and monitoring services during the work and upon its completion:
   1. Testing of coatings, soils, dust, and debris to determine the presence of lead or other hazardous substances. Test results will be provided upon the Abatement Contractor request.
   2. Area air monitoring during the work to determine the airborne concentrations of lead inside and outside of the work area. The EC shall stop the work if airborne lead concentrations outside the work area exceed the OSHA Action Level of 30 micrograms per cubic meter of air ($\mu g/m^3$) as an 8 hour time-weighted average. The work may re-start when the source of lead release has been identified and resolved, and corrective measures have been instituted to prevent recurrence.

B. The Abatement Contractor shall perform:
   1. An Exposure Assessment prior to the start of the work to determine the requirements for respiratory protection and frequency of OSHA monitoring for each type of activity.
   2. Perform OSHA compliance air monitoring to determine exposures to its employees in accordance with OSHA 29 CFR 1926.62. Frequency of testing will comply with OSHA requirements for the anticipated and actual exposure levels.

C. Credentials required for analysis of lead:
   1. Accreditation by AIHA or AALA; or
   2. Participation in the Environmental Lead Proficiency Analytical Testing (ELPAT) program; or
   3. Participation in the Proficiency in Analytical Testing (PAT) for metals analysis.

1.6 SUBMITTALS

A. The Abatement Contractor shall submit the following information to the Owner and EC:
   1. Evidence that all contractor employees in the work areas are trained and accredited in accordance with OSHA requirements:
      a. Initial training certificate.

   b. Current Annual refresher training certificate.
   c. Current IDPH asbestos license (optional, in lieu of initial training certificate).
   d. Current physician's written opinion
   e. Current respirator fit test data.
2. Copy of OSHA Exposure Assessment, where applicable.
3. OSHA compliance air monitoring records generated during the project.
4. Waste Shipment Records.
5. Worker license and certification log.
6. Material Safety Data Sheets (MSDS) for chemicals used on site.
7. Work Plan and Schedule.
8. Laboratory or analyst credentials and proficiency certificates for contractor samples.
9. AC shall retain records for 6 years:
   a. name and address of the contractor who performed the project.
   b. location of the project.
   c. summary of abatement techniques used.
   d. location of the disposal site for lead-based substances removed from the work site.
   e. starting and completion dates of the lead abatement project.

PART 2 - PRODUCTS

2.1 TOOLS and EQUIPMENT. All equipment shall at least conform to minimum industry standards.

A. Equipment:
   1. Negative Air Machines shall provide HEPA filtration and conform to ANSI Z9.2 fabrication criteria.
   2. Respirators shall be NIOSH approved for use with lead, asbestos, or other contaminants anticipated in the work.
   3. Contractor is fully responsible for complying with OSHA rules for other Safety equipment, such as hard hats, safety harnesses, eye protection, gloves, footwear, and any other safety devices used on the site.

B. Tools:
   1. Shovels and scoops shall be suitable for use in a plasticized containment. Plastic or rubber models are preferred, but metal shovels are acceptable when used with care to prevent damage to poly sheeting and permanent surfaces. Appropriate tape may be applied to the leading edges to aid in poly damage prevention.
   2. Scrapers, wire and bristle brushes, utility knives and other hand tools shall be of good quality and suitable for the intended uses. The contractor shall keep an ample supply on hand for the completion of the work.
   3. Power tools such as, but not limited to saws, pneumatic chisels, brushes, sanders, and needle guns shall be equipped with shrouds and HEPA-filtered local exhaust systems to capture released particles. In accordance with OSHA regulations, all receptacle outlets utilized that are not part of the permanent wiring of the building or structure shall have ground-fault circuit-interrupted protection in place.

2.2 MATERIALS

A. Installed materials which become a part of the work such as, but not limited to, primers, paints, surfacing compounds, and other surface coverings or finishes shall be new unless specified otherwise, of good quality, non-lead-bearing, and shall conform with the respective reinstallation specification sections.

B. Abatement materials
   1. Poly sheeting for all applications shall 6 mil nominal thickness for all applications.
   2. Tape shall be 2" or 3" tape suitable for joining poly seams and attaching poly sheeting to surfaces.
   3. Spray adhesives shall be non-flammable and free of methylene chloride solvents.

4. Chemicals used for LBP removal shall be free of methylene chloride solvents.
5. Disposal bags shall be minimum 6 mil where used for single-bagging, and minimum 4 mil where used for double-bagging.
6. Disposable suits, hoods, and foot coverings shall be TYVEK or similar.
7. Solvents shall be compatible with any primers, paints, coatings, or other surfacing materials to be installed following their use.
8. Cleaning solutions shall cause lead to chelate, precipitate, or otherwise effectively release lead from surfaces. Cleaning solutions shall not leave residue on surfaces to be painted.

PART 3 - EXECUTION

3.1 EMPLOYEE TRAINING, QUALIFICATION AND MEDICAL SCREENING

A. Supervisors and Workers shall be trained, accredited, and licensed in accordance with IDPH rules.
   1. Contractor shall keep copies of licenses at the job site at all times.
   2. A licensed supervisor (competent person) shall be present at the work site at all times when work under this section is being conducted.

B. Medical Screening shall be instituted for contractor's employees in accordance with paragraphs (j) and (k) of the OSHA rules, including (but not limited to):
   1. Biological monitoring for lead and zinc protoporphyrin (ZPP) for employees whose exposures to lead exceed the action level of 30 µg/m^3 for more than 30 days in a 12 month period; for employees exposed above the action level who request it; or as soon as possible if the employee develops signs or symptoms associated with lead intoxication or is pregnant. Monitoring shall be conducted at least every 2 months for the first 6 months, and every 6 months thereafter.
   2. Any employee whose blood lead level is at or above 40 µg/dl (micrograms per deciliter) shall be monitored at least every two months until blood lead levels fall below 40 µg/dl.
   3. Any employee whose blood lead level is at or above 50 µg/dl shall be removed from the exposure.
   4. The OSHA rules provide employees specific medical and compensation rights in these instances.

3.2 PERMISSIBLE LIMITS

A. Permissible Limits of lead in lead bearing substances. Substances with lead content below the following levels are not regulated and are not subject to the requirements of this section:
   1. 5,000 parts per million (ppm), or 0.5% lead by weight in any substance. However, note that OSHA regulations apply to any operation that releases lead into the air in concentrations in excess of the action level of 30 µg/m^3 (see B.1. below), and the IDPH will require remedial action when dust contains greater than 200 µg/sf (see A.3 below) of surface area. Actions such as sandblasting, dry sanding, or other dry aggressive abrasive disturbances can generate lead concentrations greater than either of these limits on substances with lower lead contents and, in such instances, will be required to adhere to this specification, regardless of substance lead content.
   2. 400 micrograms per gram (µg/g) of soil in high contact play areas.
   3. 1,000 micrograms per gram (µg/g) of soil in other areas.
   4. 10 micrograms per square foot (µg/sf) of surface area of dust on floors.
   5. 100 micrograms per square foot (µg/sf) of surface area of dust on other surfaces.

B. Permissible Exposure Limits for contractor employees:
   1. No person shall be permitted to be exposed to a lead concentration in excess of 50 µg/m^3 (micrograms per cubic meter of air) as an 8 hour time-weighted average (TWA). When respirators are used, the exposure may be considered to be at the level provided by the protection factor of the respirator.
   2. Where exposures are above the action level of 30 µg/m^3 for more than 30 days in a 12 month period, medical monitoring in accordance with OSHA rules will be instituted for exposed

employees.

3.3 EXPOSURE ASSESSMENT AND MONITORING

A. The Abatement Contractor shall make an assessment of the exposures expected by the tasks to be used for the scope of work listed in the Documents. Assessment may be based upon:
   1. Initial monitoring of representative workers who the contractor believes are exposed to the greatest airborne concentrations of lead, or
   2. Past monitoring (within the past 12 months) or objective data for conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions to be used for this Documents, or
   3. In the absence of an exposure assessment or monitoring, the contractor shall assume the following exposure conditions:
      a. $\leq$500 µg/m^3 for manual demolition of lead-bearing substances (i.e., drywall, other architectural components), manual scraping, manual sanding, heat gun use, and power tool cleaning with dust collection systems, or any other task where there is reason to believe an employee may be exposed to airborne lead.
      b. $\leq$ 2,500 µg/m^3 for lead burning, rivet busting, power tool cleaning without dust collection systems, cleanup of dry spent abrasives, or movement or removal of abrasive blasting enclosures.
      c. > 2,500 µg/m^3 for abrasive blasting, welding, cutting, and torch burning.

B. The contractor shall perform personal monitoring in accordance with the following requirements:
   1. Initially, to establish an exposure assessment when past monitoring or objective data are not available for an initial determination.
   2. Periodically if the exposures are, or are expected to be, above the action level of 30 µg/m^3.
   3. Where a Negative Initial Determination is made, that exposures will be below the action level, no further monitoring is required.
      a. Whenever there has been a change of equipment, process, control, personnel, or a new task has been initiated that may exceed the action level of 30 µg/m^3, contractor shall resume periodic monitoring.
   4. Monitoring and analysis shall have an accuracy (to a confidence level of 95%) of not less than $\pm$25% for airborne concentrations of lead equal to or greater than 30 µg/m^3.

C. The contractor may be required to perform air monitoring outside the work area if there is observance of contamination escape from the work area (such as dust accumulation), or evidence of failure of control methods to contain the release of airborne lead particles.

3.4 RESPIRATORY PROTECTION

A. Respiratory protection shall be worn by all persons in the work site performing abatement tasks who may be exposed to lead dust or fumes during lead abatement activities. At a minimum, the following shall be provided, for:

1.	$\leq$ 500 µg/m^3	½ mask air purifying respirator with HEPA cartridges (APR)
2.	$\leq$ 1,250 µg/m^3	Loose-fitting hood or helmet powered APR (PAPR)
		Hood or helmet supplied air respirator (SAR) in continuous flow mode
3.	< 2,500 µg/m^3	Full facepiece APR
		Tight fitting PAPR
		Full facepiece SAR in demand mode
		½ mask or full facepiece SAR in continuous flow mode
4.	$\leq$50,000 µg/m^3	½ mask or full facepiece SAR in pressure-demand mode
5.	>50,000 µg/m^3	Work shall stop until conditions are brought below this level

B. Contractor shall have a written respiratory protection program in accordance with OSHA 29 CFR

1910.134, including but not limited to, medical screening, semi-annual (every 6 months) fit testing for negative pressure respirators, training, cleaning and maintenance.

C. Respirators shall not be removed while in the work site or work area.

D. Only or NIOSH-approved respirators shall be used.

E. Additional respiratory protection by supplemental filters, such as organic vapor cartridges, may be needed when handling some coating or stripping products. Consult the Material Safety Data Sheet, manufacturer, or industrial hygienist and obtain the proper filters and usages as necessary.

3.5 HYGIENE PRACTICES

A. Eating, drinking, smoking, and applying of cosmetics are not allowed in the work site or area.

B. A changing area and shower shall be provided for changing into and removing personal protective clothing, and for showering or washing before leaving the work area for the day. (845.30(c)(2) and (k)) (845.30 (l)(2)). Any person leaving the work site or work area shall rinse his or her mouth with potable water and wash hands and face thoroughly before eating drinking, or smoking. A portable lavatory facility, potable water supply, or portable decontamination unit shall be provided by the contractor for the washing of face and hands. Building facilities shall not be used.

C. Equipment decontamination procedures shall be employed to prevent the spread of lead contamination. Disposable items shall not be reused and shall be disposed of properly (845.30(p)(2)(C)).

D. Personal Protection Equipment (PPE) shall include:
   1. Full body suits with hoods and shoe covers. Tyvek or similar disposable suits may be worn only once, and must be disposed in accordance with the Waste Disposal section.
   2. Appropriate PPE shall be used as required by OSHA and established industry practice.

3.6 PROHIBITED ACTIVITIES

A. The following methods shall not be permitted:
   1. open flame burning
   2. dry-sanding
   3. uncontained hydro-blasting or sandblasting
   4. methylene chloride for interior use
   5. dry-scraping

3.7 WORK AREA ISOLATION AND PREPARATION

A. General Preparation
   1. Post caution signs at all entrances and exits to the work area in accordance with OSHA rules:
      a. at least 20” x 14”
      b. date and location of the lead abatement project
      c. Wording at least 2” high stating, ““Warning, Lead Work Area, Poison, No Smoking or Eating”.
   2. Secure the work area from entry by children under 16 years of age, pregnant women, or other unauthorized persons.
   3. Close off the work site from other portions of the building by closing doors tightly, taping shut when necessary, or with 6 mil poly z-flap curtains over doorways or entrances to the work site.
   4. At work area exit, provide walk-off pan, wet towel, or other means to prevent tracking lead contamination to other parts of the facility.

B. Interior Preparation
   1. Turn off all forced air ventilation and seal exhaust and intake points in the worksite.

2. Removal of furniture, cabinets, or other items that may be impacted during removal activities.
2. Turn off electrical circuits in the work area to isolate them from contact. Provide temporary power equipped with Ground-Fault Circuit Interrupter (GFCI) devices to prevent electric hazards in the wet working environments. Power cords must be in good condition, not spliced, not more than 100 feet long, and shall be suspended off the floor and out of workers' way to protect the cords from damage. Cords must not be fastened with staples, hung from nails, or suspended with wire.
3. Remove all carpeting from the work site. Lightly mist with water prior to removal to prevent lead dust exposure. Carpeting shall be professionally cleaned or replaced.
4. Cover the floor surface with taped down plastic sheeting in the work area 6-feet from the area of paint disturbance or a sufficient distance to contain the dust, whichever is greater. If a vertical containment system is employed, floor covering may stop at the vertical barrier, providing it is impermeable, extends from floor to ceiling, and is tightly sealed at floors, ceilings, and walls.
5. Establish a negative pressure system to prevent contaminated air from escaping from the work site to uncontaminated areas, and consisting of:
    a. Negative air machines (NAMs) exhausted from the work site, and vented to the outside of the building whenever possible.
    b. The negative air system shall remain in continuous operation until cleanup and clearance is achieved.

C. Exterior Preparation

1. Minimum 6 mil plastic sheeting shall be placed over the ground, foundation, or other surfaces adjacent to or below the abatement area to include windows and doors.
2. Close or otherwise seal windows, grilles, intakes, or other nearby openings (above, below, or beside) that could be exposed to airborne dust from the work.
3. Sheeting shall extend out from the foundation 3 feet per story to be abated, with a minimum of 5 feet and a maximum of 20 feet. This sheeting shall remain in place until completion of final cleaning.
4. Sheeting shall be secured at the foundation and along all edges and seams.
5. When liquid waste is produced by any abatement method used, the edges of the plastic sheeting shall be raised a sufficient distance to contain the liquid waste.

3.8 LEAD MITIGATION

A. Lead mitigation may be used as an interim method for repairs to lead-bearing surfaces to stabilize, secure, or cover them.

B. Work area preparation shall comply with paragraph 3.7 A. of this section.

C. All loose paint, coatings, or coverings that contain lead or are applied to a lead-bearing surface shall be moistened and carefully scraped from surfaces back to where materials are solidly adhered.
1. Where called out in the documents, scraped areas shall be smoothed out by feathering or by filling with a surfacing compound.
2. Areas from which paint has been removed shall be coated with a non-lead bearing? primer, such as "Kilz" or similar, which shall be compatible with the new paint, coating or surfacing material to be re-applied.
3. Areas to be repainted, the new paint, coating, or covering shall be a non-lead bearing paint? compatible with the existing paint and primer, or shall have a surfacing treatment, sizing, bonding agent, or primer recommended by the paint, coating, or covering manufacturer to assure a proper and lasting bond with the substrate surface.

D. Any nearby surfaces which have collected paint dust shall be cleaned by damp mopping with a cleaning solution.

3.9 LEAD ABATEMENT

A. General.
   1. Unless otherwise specified in the Documents, lead-bearing substances listed in the Documents shall be removed by methods that minimize the generation of dust or debris.
   2. Lead-based paint abatement practices shall be compatible with, and shall produce surfaces that are in conformance with the attached painting and preparation sections.
   3. Where existing lead-bearing substances may be disturbed by the installation of new work, the work area should be prepped as outlined in Section 3.7 and they shall be removed sufficiently to prevent such disturbances.
      a. Following any window dismantlement activity in the work area, the abatement contractor shall wet scrape the loose paint off the exposed window lintel and prepare, seal, prime and paint the lintel surface. If the lintel is to be replaced as required by the architect, the abatement contractor shall only remove all the loose paint and not repaint the lintel surface.
   4. Where disturbances of lead-bearing substances produce dust, the dust must be assumed to contain lead until tested and proven otherwise. Dust suppression methods, such as misting with water, HEPA vacuums, and HEPA equipped NAMs shall be used.
   5. Movement of lead-bearing wastes through unsecured areas:
      a. Wastes shall be contained in minimum 6 mil impermeable (i.e. poly) bags.
      b. Architectural components and other debris shall be wrapped in minimum 6 mil plastic sheeting and sealed with tape.
      c. Load-out only during non-occupied hours.
      d. Dust and debris shall not be tracked or spilled outside the work site. It is recommended that the interior floor of the load-out path be lined with a minimum 6 mil plastic sheeting and sealed with tape during load-out activities. The interior floor plastic sheeting should then be properly removed and disposed of following load-out activities. In the event of spillage or tracking, contractor shall HEPA vacuum visible debris and wet wipe all affected areas with a non-TSP lead-dissolving detergent solution.

B. Interior Abatement methods may include:
   1. Removal of the component or surface.
   2. Wet scraping of lead-bearing material.
   3. Heat gun with operating temperatures not to exceed 700 F.
   4. Nonflammable chemical strippers shall not contain methylene chloride. This method is generally used with unique, irreplaceable, architecturally, or historically significant components. Chemical strippers shall be compatible with new paints, coverings, or coatings to be installed.
   5. Sander, needle gun, chipper, scarifier, or other mechanical paint removal system. All such power tools shall be equipped with a HEPA vacuum collection system.
   6. Enclosure with a durable material or coating that does not readily tear or peel, such as but not limited to, gypsum board; fiberglass mats; canvas-backed vinyl wall coverings; high pressure, laminated plastic sheet, such as Formica®, tile, vinyl flooring, paneling, plastic, metal, or wood. Enclosures shall only be used when specified in the Documents.

C. Exterior abatement methods may include:
   1. All methods listed under Interior Abatement
   2. Vacuum-blasting utilizing a HEPA vacuum collection system into appropriate containers
   3. Contained hydro-blasting or sandblasting
   4. When vacuum-blasting or contained hydro-blasting is used, window interiors shall be sealed with 6 mil plastic sheeting and secured with waterproof tape.

3.10 CLEANING AND DECONTAMINATION

A. Interior Cleaning. Include in the cleaning process any furniture, cabinets, or other item that remained in the worksite that have become contaminated with lead-bearing dust.
   1. Properly containerize and remove all lead wastes from the work site.
   2. HEPA vacuum all surfaces including woodwork, walls, windows, window wells, and floors.

3. Wet clean all surfaces with a cleaning solution.
4. Allow all surfaces to dry and HEPA vacuum any remaining visible residue.

B. Exterior Cleaning.
1. Recover all visible debris from exterior areas.
2. HEPA vacuum surfaces that have been abated, paying particular attention to horizontal surfaces, such as window sills, wells, mullions, ledges, etc., both in the abated area and on nearby windows and surfaces.

3.11 FINAL CLEARANCE

A. Following acceptable visual clearance and confirmation of acceptable lead air sampling results (less than 30 µg/m^3) from the EC the lead abatement work area shall be complete. At the discretion of the project designer and the Owner, representative wipe samples per contained work area may be collected from floors, window sills, countertops, tops of cabinets, or other representative surfaces. Lead dust levels on horizontal interior surfaces shall be below 10 micrograms per square foot (µg/sf) on floors or 100 micrograms per square foot (µg/sf) on other surfaces.

3.12 WASTE DISPOSAL

A. All plaster, paint chips, lead dust, cleaning supplies, HEPA filters, vacuum contents and filters, disposable suits, and other concentrated lead-bearing waste shall be disposed of following all applicable regulations.
1. Dispose of concentrated lead wastes separately from architectural components.
2. Subject concentrated wastes to TCLP test to determine waste classification.
3. Prepare a Waste Shipment Record, to be signed by the generator, shipper, and disposal site; to be returned to the generator within 45 days.

B. Architectural components, other items to which lead-based paint remains adhered and cleaned plastic sheeting may be disposed as common construction and demolition debris.
1. Components shall be wrapped in minimum 6 mil plastic sheeting and sealed with tape.

C. All lead-bearing wastes shall be stored in covered, locked containers until transported off site.

D. Remove lead waste from the work site in accordance with RCRA requirements.

E. Where feasible, non-hazardous wastes and architectural components removed intact shall be separated from hazardous waste. Non-hazardous wastes shall be disposed of as general construction debris.

F. Transport all non-hazardous wastes in covered vehicles to an IEPA-approved landfill located within the State of Illinois.

G. Transport all hazardous wastes in covered vehicles to a hazardous waste landfill permitted to accept lead wastes.

H. Wastes from the site shall not be mixed with wastes from other sites.

END OF SECTION

SECTION 02 86 13

HAZARDOUS AND UNIVERSAL WASTE MANAGEMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. These environmental requirements apply to all Board projects. These specifications apply for all demolition, construction and renovation projects that require the removal and disposal of hazardous and/or universal waste in accordance with all applicable regulations.

B. This Section describes the segregation, packaging, labeling, transport, and disposal and/or recycling of hazardous and universal waste materials generated by demolition/renovation activities and the subsequent shipment of properly packaged and labeled waste materials to open, permitted and Owner-approved disposal sites.

C. The Contractor's Work includes work area preparation, sampling and analysis, on-site handling, supervision of all Work, preparation of reports, protection of on-site persons, utilities, and property, and payment of all transport and disposal/recycling fees.

1.02 DEFINITIONS

A. In addition to the terms listed below, all definitions in the laws and regulations specified elsewhere in the specifications are incorporated by reference, whether or not restated herein.

B. Board: the Owner of the property and the authority ordering the Work specified herein.

C. Board Representative: the entity responsible for overall project coordination and completion.

D. Capacitor: device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by dielectric fluid.

E. CFR: the Code of Federal Regulations, is the basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.

F. Chemical Waste Landfill: an open and approved landfill, permitted under 35 IAC Subtitle G Part 814 at which protection against risk of injury to health or the environment from migration of PCBs to land, water or the atmosphere is provided from PCBs and PCB items deposited therein by locating, engineering, and operating the landfill as specified in 40 CFR 1761.75.

G. Component: all removable parts/materials which make up ballasts, bulbs, batteries, and other electrical equipment, a percentage of which can be recycled.

H. Container: any portable device, in which material is sorted, transported, treated, disposed of, or otherwise handled.

I. Contractor: the entity responsible for performing the complete scope of work in the Documents. The Contractor may elect to self-perform or subcontract out any portion of the work.

J. Disposal: to intentionally or accidentally discard, throw away or otherwise complete or terminate the useful life of PCBs and PCB items. Disposal includes spills, leaks, and other uncontrolled

discharges of PCBs as well as actions related to containing, transporting, destroying, degrading, decontaminating, or confining PCBs and PCB items.

K. Disposal Facility: a facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.

L. EPA Identification: the unique number assigned by the EPA to each generator or transporter of hazardous waste, and each treatment, storage or disposal facility.

M. Fluorescent light ballast: a device that electrically controls fluorescent light fixtures and that includes a capacitor containing 0.1 kg or less of dielectric.

N. Leak or Leaking means any instance in which PCB, chemical, hazardous or universal waste Article, Container or Equipment has any PCB, chemical, hazardous or universal waste residue on any portion of its external surface or surrounding area.

O. Facility: all contiguous land, structures, other appurtenances, and improvements on the land, used for treating, storing or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units, e.g. one or more landfills, surface impoundments, or a combination of them.

P. On-site: within the boundaries of a contiguous property unit.

Q. OSHA: the federal Occupational Health and Safety Administration.

R. Landfill: an open and permitted disposal facility or part of a facility where hazardous and special wastes are placed in or on land and which is not a land treatment facility, a surface impoundment, or a combination of them.

S. Managing Environmental Consultant (MEC): the entity with overall responsibility for the environmental aspects of the project, including design, organization, direction, oversight and control as well as investigations, assessments, and supervision of project manager.

T. Manifest: the shipping document, EPA form 7710-53, used for identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of treatment, storage or disposal.

U. Polychlorinated Biphenyls (PCBs): any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance.

V. PCB Article Container: any package, can, bottle, bag, barrel, drum, tank, or other device that contains PCB Articles or PCB Equipment, and whose surface(s) has not been in direct contact with PCBs.

W. PCB Container: any package, can bottle, bag, barrel, drum, tank, or other device that contains PCBs or PCB Articles and whose surface(s) has been in direct contact with PCBs.

X. PCB Item: any PCB Article, PCB Article Container, PCB Container, or PCB Equipment, that deliberately or unintentionally contains or has as a part of it any PCB or PCBs.

Y. Recover Refrigerant: to remove refrigerant in any condition from an appliance without necessarily testing or processing it in any way.

Z. Recycle Refrigerant: to extract refrigerant from an appliance and clean refrigerant for reuse without meeting all of the requirements for reclamation. In general, recycled refrigerant is refrigerant that is cleaned using oil separation and single or multiple passes through devices such as replaceable-core filter-driers, which reduce moisture, acidity, and particulate matter.

AA. Reclaim Refrigerant: to reprocess refrigerant to at least the purity specified in Air-Conditioning and Refrigeration Institute (ARI) Standard 700-1988, “Specification for Fluorocarbon refrigerants”, and to verify this purity using the analytical methodology prescribed in the standard. In general reclamation involves the use of processes or procedures available only at the processing or manufacturing facility.

BB. Storage: the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, destroyed, disposed of or stored elsewhere.

CC. SDS: Safety Data Sheets, required by OSHA for any chemical in the workplace that that could be expected to cause an exposure to workers during normal use or in emergency situations.

DD. Toxic Characteristic Leaching Procedure (TCLP): a laboratory test method to determine the mobility of both organic and inorganic compounds present in liquid, solid, and multiphasic wastes performed in accordance with test methods required under 40 CFR Part 261 and 268.

EE. Transporter: any person engaged in the off-site transportation of special waste and/or hazardous waste within the United States, by air, rail, highway or water, if such transportation requires a manifest under 40 CFR Part 262.

1.03 SCOPE OF WORK

A. The work includes all labor, equipment, materials, and supplies necessary to perform the Scope of Work in the bid documents by the procedures described herein. The Contractor, by submitting a bid for the work, represents itself as knowledgeable and expert in the performance of the work, and includes all things usually and customarily necessary to provide a complete and finished job, whether specifically mentioned or not. Refer to Contract Drawings and Environmental Scope Sheets in Section 02 24 01.

1.04 QUALITY ASSURANCE

A. Work outlined in this Section must be performed by a qualified Contractor, with a minimum of 10 years’ experience, who is thoroughly familiar with working with regulated waste materials of similar size and scope, the Contractor must be familiar with and capable of complying with all federal, state, and local regulatory requirements pertaining to waste handling.

B. Medical Examinations: The Contractor shall provide workers with a comprehensive medical examination as required by 29 CFR 1910.134 and 29 CFR 1926.62. The examination will not be required if adequate records show that employees have been examined as required within the last year. The Contractor shall institute a medical surveillance program for all employees who are or may be exposed above the action level for more than 30 days per year.

1.05 LAWS, REGULATIONS, AND STANDARDS

A. The Contractor shall assume full responsibility and liability for the compliance with all applicable federal, state, and local regulations pertaining to hazardous, special and universal waste management and disposal/recycling.

B. Federal Requirements:

1. Federal requirements which govern the management, hauling and disposal of hazardous, special and universal waste/recycled material include but are not limited to the following:
   a. DOT: U. S. Department of Transportation, including but not limited to the following:
      1) Hazardous Substances, Title 49, Part 171 and 172 of the Code of Federal Regulations.
      2) Hazardous Material Regulations, General Awareness and Training Requirements for Handlers, Loaders and Drivers,
      3) Title 49, Parts 171-180 of the Code of Federal Regulations.
      4) Hazardous Material Regulations, Editorial and Technical Revisions, Title 49, Parts 171-180 of the Code of Federal Regulations.
         a) EPA: U. S. Environmental Protection Agency (EPA), including but not limited to the following:

Management of Hazardous Wastes Resource Conservation and Recovery Act (RCRA), Title 40, Parts 260-299 of the Code of Federal Regulations.

Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution In Commerce, and Use Prohibitions, Title 40, Parts 761, of the Code of Federal Regulations.

Protection of Stratospheric Ozone, Title 40, Part 82 of the Code of Federal Regulations.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Title 42, Section 103.

Universal Waste Rule, Title 40, Part 273 of the Code of Federal Regulations.

         b) LABOR: Occupational Safety and Health Administration, including but not limited to:

Occupational Safety and Health Guidelines, Respiratory Protection, Title 29, Part 1910.134.

Occupational Safety and Health Guidelines, Occupational Safety and Health Standards, Lead, Title 29, Part 1910.1025.

Occupational Safety and Health Guidelines, Occupational Safety and Health Standards, Hazard Communication, Title 29, Part 1910.1200.

Safety and Health Guidelines for Construction, Title 29, Part 1926 of the Code of Federal Regulations.

C. State Requirements: Abide by all state requirements which govern the management, hauling and disposal of hazardous, special and universal waste/recycled material. In Illinois, this includes, but is not limited to the following:
   1. Title 35 of the Illinois Administration Code (IAC), including but not limited to the following:
      a. Wastestream Authorization, IAC Chapter I, Subpart b, Part 709.
      b. Hazardous Waste Management Systems: General, IAC Chapter I, Subchapter c, Part 720.
      c. Identification & Listing of Hazardous Waste, IAC Chapter I, Subchapter c, Part 721.
      d. Standards Applicable to Generators of Hazardous Waste, IAC Chapter I, Subchapter c, Part 722.
      e. Standards Applicable to Transporters of Hazardous Waste, IAC Chapter I, Subchapter c, Part 723.
      f. Standards Applicable to Treaters, Storers, and Disposers of Hazardous Waste, IAC Chapter I, Subchapter c, Part 724.
      g. Interim Status Standards of Hazardous Waste Treaters, Storers, and Disposers, IAC Chapter I, Subchapter c, Part 725.
      h. Standards for the Management of Specific Hazardous Waste and Specific Types of Hazardous Waste Management Facilities, IAC Chapter I, Subpart c, Part 726.

i. Land Disposal Restrictions, IAC Chapter I, Subchapter c, Part 728.
j. Universal Waste Management, IAC Chapter I, Subchapter d, Part 733.
k. Solid Waste, IAC Chapter I, Subchapter i, Part 807.
l. Special Waste Classifications, IAC Chapter I, Subchapter i, Part 808.
m. Special Waste Hauling, IAC Chapter I, Subchapter i, Part 809.
n. Standards for New Solid Waste Landfills, IAC Chapter I, Subchapter i, Part 811.
o. Procedural Requirements for Permitted Landfills, IAC Chapter I, Subchapter i, Part 813.
p. Standards for Existing Landfills and Units, IAC Chapter I, Subchapter g, Part 814.
q. Standards for Management of Used Oil, IAC Chapter I, Subchapter e, Part 739.

D. Local Requirements: Abide by all local requirements as outlines within the Municipal Code of the City of Chicago which governs the management, hauling, and disposal of hazardous, special and universal waste/recycled material.

1.06 SUBMITTALS

A. Before start of any hazardous waste removal Work, the Contractor must submit a Hazardous Waste Management Plan to the MEC fifteen (15) days prior to the start of Work.

B. During the Work, the Contractor must submit the following to the MEC, with ten (10) days of activity, off-site removal, or completion of work if duration is less:
1. TCLP test results, as required to characterize waste paint chip debris for segregation and packaging purposes prior to transport from the site.
2. Submit copies of all executed manifests and disposal site receipts and waste quantities within ten (10) days to the MEC.
3. Receipts for all recycled materials accepted at authorized recycling facilities. The receipts will include the number of components recycled as well as the amount of materials recycled and/or disposed.
4. Documents for the removal, handling, recycling or disposal of CFC Refrigerant/Reclamation.
5. Daily Reports - list names of active workers for each day, work starting and stopping times, visitors to the site, and description of Work accomplished.

C. Submittal Review:
1. Review of submittals or any comments made do not relieve the Contractor from compliance with the requirements of the contract specifications and drawings. The purpose of this check is to review for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents.
2. The Contractor must not begin any Work applicable to this section until all required submittals have been reviewed and accepted by the MEC.

1.07 HAZARDOUS WASTE PLAN REQUIREMENTS

A. General Applicability of Codes and Regulations:
1. 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:
1. Notice shall be provided to the Board Representative a minimum of 2 working days prior to the removal of any hazardous, special or universal waste and/or recycled hazardous, special or universal waste from the site.
2. Notice will be provided to the Board Representative within 4 hours of any environmental problems, complaints, fines, citations or issues by any government body or regulatory

agency pertaining to hazardous, special or universal waste management and disposal. Written confirmation will be provided to the Board Representative within 48 hours of the incident that indicates that all problems and issues have been satisfactory addressed.

C. The Contractor must prepare a Hazardous Waste Plan designating appropriate procedures and equipment for performing the Work. The Hazardous Waste Plan must address the proper management/handling and disposal/recycling of wastes generated during Work activities. The Contractor's Hazardous Waste Plan for this project must include as a minimum the items listed below:

1. List of Hazardous Waste Equipment:
   a. A description of the proposed equipment to be used during the removal, handling, temporary storage and transport of hazardous materials related to the Work.
   b. Hazardous Material Handling:
      1) Procedures including a description of the method of transportation and
      2) Contractor shall provide a description of procedures for on-site
      3) 3The plan will include the following documentation for each transporter:
         a) A copy of state and local special waste and/or hazardous waste hauler licenses for each transporter must be provided in the Plan.
         b) U.S. EPA Identification Number of waste hauler.
         c) Current list of all transporting vehicles to be used including:

         Vehicles make, model and year.
         Serial number for each vehicle.
         Vehicle license number.
         Number of axels.
         Weight capacity of vehicle.

         d) A list of all licensed qualified truck drivers. Drivers should be able to provide their driver's license upon request.
         e) Instances where rail haulers are being used, copies of all applicable permits and licenses for the load on/off site location(s) and/or transfer location(s) will be provided.
      4) Contractor shall provide the following documentation for each disposal/recycling facility:
         a) Name and address of waste disposal facility where hazardous waste materials are to be disposed including:

         Contact person and telephone number.
         Copy of state license and permit.
         Disposal facility permits.

         b) A signed statement from an authorized representative of the recycling or disposal facility stating the percentage of recycled materials for each of the components including the estimated percentage pertaining to each component which has no recycling value.
      5) Safety Precautions -Personnel:
         a) List safety equipment and clothing to be used per OSHA regulations.
         b) A description of emergency procedures to be followed in case of physical contact, ingestion, inhalation, etc.
      6) Emergency Spills:
         a) A description of methods to be used for containment.
         b) A description of methods to be used for collection and disposal.
         c) A description of methods and materials to be used to restore areas harmed by emergency spills.
      7) Lead-containing Paint Management:
         a) A description of the work procedures that will be utilized to minimize the generation of airborne lead into the environment.
      8) In addition, the Plan will provide:
         a) Specimen copy of Uniform Hazardous Waste Manifest form.
         b) Copy of EPA "Notice of Hazardous Waste Activity" form.

c) Copy of forms and permits required by federal, state, and local agencies.
d) Sample of disposal label(s) to be used.

PART 2 - PRODUCTS

2.01 TOOLS AND EQUIPMENT

A. Disposal Bags: Provide 6 mil (0.15 mm) thick leak-tight polyethylene bags.

B. DOT Hazardous Waste Disposal Drums: Provide DOT 17-H Open -Top Drums (55-gallon) in accordance with DOT title 49 CFR Parts 173, 177, 178, and 179.

C. Fiberboard Drums, cylindrical containers manufactured from sturdy fiberboard will be utilized for storage transportation of electrical equipment.

D. PCB containing ballasts shall be place in 55-gallon drums with vermiculite packing. The drums will be sealed, and labeled as containing hazardous PCB waste. The label shall also include the name and address of the parcel. However, if ballasts are damaged they shall be stored prior to disposal in accordance with 40 CFR 761.65.

E. DOT Hazardous Waste Labels: in accordance with DOT regulations Title 49 CFR parts 173, 177, 178, and 179.

F. Corrugated “Gaylord” Boxes with the use of a liner will be used to store and transport bulk materials which will be kept on pallets during storage and transportation.

G. Materials to be used to restore areas harmed by emergency spills.

H. Safety equipment and associated clothing to be used.

I. Hazardous material manifests and other related forms required by state and local agencies.

J. Utilize equipment to recover refrigerant that is appropriate for the following:
1. Type of system encountered
2. Refrigerant type
3. Achieving IEPA-mandated vacuum levels

PART 3 - EXECUTION

3.01 GENERAL REQUIREMENTS

A. The Contractor shall train each employee performing Work prior to the time of initial job assignment in accordance with applicable regulations.

B. Respiratory Protection Program:
1. The Contractor shall furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least every 6 months thereafter if required by 29 CFR 1910.1025.
2. The Contractor shall establish and implement a respiratory protection program as required by 29 CFR 1910.134 and 29 CFR 1926.62.

C. Hazard Communication Program: Establish and implement a Hazard Communication Program as required by 29 CFR 1910.1200.

D. Post warning signs at entry points to hazardous Work area, as necessary.

E. Segregate, package, label, transport and dispose of Hazardous Waste in accordance with DOT, EPA, state, and local regulations.

F. Scheduling/Sequencing of the demolition and/or abatement is to be coordinated by the Contractor.

G. Contractor shall decontaminate all residues from all surfaces where pre-existing leaks occur. Contractor shall decontaminate all surfaces where leaks occur during the removal and disposal process.

H. Extreme care shall be used to prevent leakage of chemicals, liquid wastes, refrigerant, etc. during removal processes.

I. Do not mix potentially hazardous waste streams or different refrigerants in the same recovery vessel. Where feasible, separate each type of hazardous waste from other types of hazardous wastes and construction waste.

J. All electrical circuits shall be de-energized and locked out prior to removal of ballasts. Contractor shall provide temporary lighting as needed.

K. The Contractor shall identify the location and Commissionership of all on-site transformers. The contents from each transformer shall be characterized for PCB content by the Contractor for proper disposal.

L. The Contractor shall determine location and type of each radiological waste. The Contractor shall make all arrangements from the proper decommissioning of equipment and disposal of related materials.

3.02 HAZARDOUS WASTE DESIGNATION

A. Where not otherwise designated by the Owner as hazardous waste, characterize applicable suspect waste products by conducting representative TCLP testing and referencing 40 CFR Part 261.

B. Work shall include characterization and proper disposal of any soot contained within boilers, incinerators, or stacks; maintenance fluids within heating/cooling equipment; hazardous chemicals; storage tanks; or lead content of paint present.

C. Fluids from transformers, electrical equipment, hydraulic equipment, etc. shall be characterized for PCB content per 40 CFR Part 761.

D. Representative sampling of waste products will be in accordance with EPA Document SW 846.

E. TCLP test analysis will be performed in accordance with EPA Method 1311.

F. Radiological Wastes shall be classified in accordance with the NRC operating agreement.

3.03 HAZARDOUS WASTE

A. The following waste products are designated by the Owner as non-salvageable and as Hazardous Waste Types:
   1. Waste Type A: PCB waste.
      a. PCB-containing ballasts from fluorescent light fixtures.

b. PCB-containing electrical transformers and switch gears.
c. PCB-containing hydraulic fluid, which can be found within but not limited to the following equipment:
    1) Hydraulic-lift elevators
    2) Hydraulic trash compactors
    3) Hydraulic loading dock lifts
    4) Waste Type B: Mercury-containing waste.
        a) Thermostats with mercury switches. Individually bagged mercury-containing thermostats.
        b) Fluorescent and mercury-vapor lamps/bulbs.
        c) Thermometers.
        d) Gauges and regulators (including those found in waste medical equipment).
        e) Elemental mercury.
    5) Waste Type C: Medical Waste.
        a) Used and unused sharps.
        b) Contents of bio-hazard waste containers, including drums and bins.
        c) Surplus medical supplies.
        d) Contents of medical devices, such as dialysis machines, ventilators.
        e) Human and animal pathological wastes including tissue samples stored on slides and preserved and unpreserved specimens.
    6) Waste Type D: Chemical Wastes.
        a) Cleaning chemicals such as bleach, ammonia, carpet cleaner, etc.
        b) Laboratory chemicals such as xylenes, benzene, acetic acid, dyes, formaldehyde, etc.
        c) Boiler and water treatment chemicals.
        d) Developing chemicals associated with the processing of x-rays and other photographic images, both used and virgin product.
        e) Unused medicine.
        f) Building maintenance chemicals such as paint, adhesives, glazing compound, caulk compound, roofing materials, concrete binder, resurfacing compounds, etc.
        g) Equipment maintenance chemicals such as lubricants, solvents, and oils.
        h) Fuels, such as gasoline, No. 2 Fuel Oil, and diesel fuel.
        i) Equipment and vessels containing chemicals, such as fire extinguishers, gas cylinders, batteries, and film developing equipment.
    7) Waste Type E: Refrigerants and CFCs
        a) Refrigerators and freezers.
        b) Air Conditioning units.
        c) Cryogenic Supplies.
        d) Bulk storage of refrigerants.
    8) Waste Type F: Equipment
        a) Mechanical equipment, such as compressors, generators, compressors, water conditioning vessels, motors, etc.
        b) Electrical equipment such as televisions, computers, monitors, current controllers, etc.
        c) Medical equipment such as vital signs monitors, incubators, crash carts, MRIs, ultrasounds, ventilators, dialysis machines, etc.
    9) Waste Type G: Radiological Waste
        a) Drummed Radioactive waste.
        b) Equipment that uses a radioactive source including x-rays, mammograms, CAT scans, electron microscopes, scintillation spectrometers, etc.
        c) Smoke detectors.

10) 1Waste Type H: Lead-containing waste.
    a) Lead paint (liquid or containerized paint wastes).
    b) Lead-contaminated wastes (paint chips, loose debris, etc.).
11) 1Waste Type I: Other
    a) Drums of hazardous waste generated prior to the start of the contract.
    b) Wastes accumulated in Crock Pots.
    c) Lab trap drain wastes.
    d) Soot encountered in stacks, incinerators, or associated equipment.

3.04 HAZARDOUS WASTE PACKAGING AND LABELING

A. Package each segregated Hazardous Waste Type in containers for offsite removal and disposal/recycle. IMPORTANT: Do Not Mix Waste Streams.
   1. Waste Types A, B, C and I, as applicable:
      a. Package in DOT 17-H Open-Top Drums polyethylene disposal bag liners in accordance with 49 CFR Parts 171-180.
      b. Fill to capacity only with waste.
      c. Install gasket on lid, apply lock ring, and seal.
      d. Apply Hazardous Waste Label to drum side.
      e. Enter required DOT shipping data per applicable regulations.
      f. Adjacent to each label, enter the date indicating when waste was first placed in each drum.
         1) Waste Type D - Chemical Wastes:
            a) Package other wastes as applicable in accordance with Hazardous Wastes Resource Conservation and Recovery Act (RCRA), Title 40, Parts 260-299 of the Code of Federal Regulations. Overpack drums shall be required as necessary to complete Work.
         2) Waste Type E - Refrigerants and CFCs:
            a) Reference Section 3.8 for details.
         3) Waste Type F - Equipment:
            a) Package all equipment in closable and lockable containers for off-site removal. Ensure that all liquids, gases or other regulated materials are removed from equipment, as applicable, prior to placement in containers. Comply with all DOT regulations for each type of equipment.
         4) Waste Type G - Radiological Wastes:
            a) All radiological equipment shall be packaged and shipped in accordance with 32 IAC 341 regulations.
         5) Waste Type H - Lead-containing Wastes:
            a) Handle, store, transport, and dispose lead or lead-contaminated waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265.
            b) Comply with land disposal restriction notification requirements as required by 40 CFR 268.
            c) Non-hazardous waste may be disposed of as demolition debris (general refuse).
            d) Submit results of TCLP testing to the EC prior to disposal.

B. Sealed and Labeled Containers: maintain all containers in a continuously sealed condition after they have been sealed.
   1. Do not reopen sealed containers
   2. Do not place additional waste in sealed containers.

3.05 TEMPORARY STORAGE

A. Partially filled containers of hazardous waste may be stored at the Work site for intermittent packaging provided that the following conditions are met:
   1. Each container is properly labeled when it is first placed in service, including the date;
   2. Each container remains closed at all times except when compatible waste types are added;
   3. Each Work site must be secured and/or attended at all times; and
   4. When moved from site to site, each container remains within the geographic boundaries of the facility without moving nor crossing public access highways; and
   5. UNDER NO CIRCUMSTANCES WILL THE ACCUMULATED WASTE REMAIN ON SITE BEYOND NINETY (90) DAYS FROM THE DAY THAT ACCUMULATION IN THE CONTAINER WAS INITIATED.

3.06 REMOVAL OF HAZARDOUS WASTES

A. Immediately seal containers of hazardous waste as each the container is filled. Remove containers of hazardous waste from the Work site within forty-eight (48) hours of being filled.

B. Transporting filled containers from the Work site to an approved disposal site or recycling center utilizing licensed hauler.

C. All fluorescent light ballasts shall be removed. Those labeled “NO PCBs” shall be packaged separately from those which indicate PCB or do not indicate PCB condition.

D. Subject to the Board Representative’s approval, the Contractor shall arrange with the electric utility provider for the removal of transformers which are owned by the utility provider from the site.

E. Subject to the Commission Representative’s approval, the contractor shall remove and dispose of all transformers which are not owned by the electric utility provider.

F. Continuously maintain custody of all hazardous material generated at the Work site including security, short-term storage, transportation and disposition until custody is transferred to an approved disposal site or recycling center.

G. Do not remove, or cause to be removed, hazardous waste from the Property without a legally executed Uniform Hazardous Waste manifest.

H. At completion of hauling and disposal of each load, submit copy of waste manifest, chain of custody form, and landfill receipt to the Board Representative.

3.07 RECYCLING AND RECOVERY

A. Turn over waste which contains materials for which recovery and/or recycling is possible to an approved recycling center. Materials subject to recycling include, but are not limited to:
   1. Fluorescent light tubes.
   2. Lead acid batteries.
   3. Combustible lead-based painted building components and lead-based paint chips.
   4. Televisions and computers.
   5. Ethylene Glycol or other related fluids found within cooling systems.
   6. Mechanical and medical equipment.
   7. Non-PCB-containing oils.
   8. Fuel.
   9. Maintenance chemicals.

10. Gas cylinders and fire extinguishers.
11. Lead Shielding Materials.

3.08 STORAGE & TRANSPORTATION OF REFRIGERANTS / CFCS

A. Use proper storage vessel when recovering refrigerants.
   1. IDOT containers meeting the ARI standard.
   2. Container working pressure rating must comply with IDOT requirements (49 CFR).
      a. For Refrigerant HCFC-22: Minimum working pressure rating of 260 psig.
      b. For Refrigerant CFC-11 (Low-Pressure Refrigerants): Drums of steel construction and designated as 17C or 17E.
         1) Open top and plastic drums shall not be used.
         2) Previously filled, disposable cylinders shall not be used to store or transport recovered refrigerants.

B. All recovery vessels shall be visually inspected by the Contractor prior to filling. The Contractor shall inspect and provide the following upon request:
   1. Verification of proper IDOT specification.
   2. Pressure rating verification.
   3. Current hydrostatic test date.
   4. Cylinder shall be free of surface dents and imperfections.

C. Provide required labeling for recovery vessel.

D. Return all refrigerant to reclamation facilities to be reprocessed to ARI 700 1988 Standards or dispose in an approved facility.

E. The Contractor shall provide the Commission representative with required documents for CFC Refrigerant/Reclamation within ten (10) days.

3.09 REMOVAL OF NON-HAZARDOUS WASTE MATERIAL

A. Transport and legally dispose of non-hazardous waste products, materials, residues and refuse at a location not on City’s property.

B. Non-hazardous waste products, materials, residues and refuse include, but are not necessarily limited to:
   1. Materials which are determined to be non-hazardous wastes through objective sampling in accordance with EPA Document SW-846 and laboratory analysis in accordance with EPA Method 1311.
   2. Emptied hazardous material containers: containers holding a material with constituents listed on the SDS as hazardous.
      a. When a container is emptied of its hazardous contents by pouring or scraping so that less than one inch of material remains in the bottom of the container, the container is considered “empty” and is not in itself a hazardous waste.
      b. Emptied hazardous material containers may be disposed of as construction debris waste (i.e. non-hazardous).
         1) Personal protective clothing and safety equipment with de minimis or trace contamination.

C. Keep premises in a clean and orderly condition during performance of all Work.

D. Place non-hazardous construction debris wastes in secure containers for local landfill disposal on a daily basis.

END OF SECTION

SECTION 21 13 00

FIRE-SUPPRESSION SPRINKLER SYSTEMS

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Wet-pipe sprinkler system.

B. Dry-pipe sprinkler system.

1.02 REFERENCE STANDARDS

A. ASME B1.20.1 - Pipe Threads, General Purpose (Inch); 2013.

B. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2015.

C. ASME B16.11 - Forged Fittings, Socket-welding and Threaded; 2016 (Errata 2017).

D. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2012.

E. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.

F. ASME B16.24 - Cast Copper Alloy Pipe Flanges and Flanged Fittings Classes 150, 300, 600, 900, 1500, and 2500; 2016.

G. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2016.

H. ASME B16.4 - Gray Iron Threaded Fittings: Classes 125 and 250; 2016.

I. ASME B16.5 - Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard; 2017.

J. ASME B16.9 - Factory-Made Wrought Buttwelding Fittings; 2012.

K. ASME B36.10M - Welded and Seamless Wrought Steel Pipe; 2015.

L. ASME BPVC - Boiler and Pressure Vessel Code; 2017.

M. ASTM A106/A106M - Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service; 2015.

N. ASTM A135/A135M - Standard Specification for Electric-Resistance-Welded Steel Pipe; 2009 (Reapproved 2014).

O. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2017.

P. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

Q. ASTM A536 - Standard Specification for Ductile Iron Castings; 1984 (Reapproved 2014).

R. ASTM A674 - Standard Practice for Polyethylene Encasement for Ductile Iron Pipe for Water or Other Liquids; 2010 (Reapproved 2014).

S. ASTM A733 - Standard Specification for Welded and Seamless Carbon Steel and Austenitic Stainless Steel Pipe Nipples; 2016.

T. ASTM A795/A795M - Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use; 2013.

U. ASTM A865/A865M - Standard Specification for Threaded Couplings, Steel, Black or Zinc-Coated (Galvanized) Welded or Seamless, for Use in Steel Pipe Joints; 2006 (Reapproved 2017).

V. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2016.

W. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2016.

X. AWS A5.8/A5.8M - Specification for Filler Metals for Brazing and Braze Welding; 2011 and errata.

Y. AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; 2010.

Z. AWWA C110/A21.10 - Ductile-Iron and Gray-Iron Fittings; 2012.

AA. AAWWA C111/A21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings; 2017.

BB. AAWWA C151/A21.51 - Ductile-Iron Pipe, Centrifugally Cast; 2017.

CC. AAWWA C606 - Grooved and Shouldered Joints; 2015.

DD. ACity of Chicago Building Code - Municipal Code of Chicago for the Building Industry; 2017.

EE. AMSS SP-123 - Non-Ferrous Threaded and Solder-Joint Unions for Use with Copper Water Tube; 2013.

FF. ANFPA 13 - Standard for the Installation of Sprinkler Systems; 2015, with Errata (2017).

GG. ANFPA 14 - Standard for the Installation of Standpipe and Hose Systems; 2016.

HH. ANFPA 1963 - Standard for Fire Hose Connections; 2014.

II. ANFPA 20 - Standard for the Installation of Stationary Pumps for Fire Protection; 2016.

JJ. ANFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances; 2016.

KK. ANFPA 291 - Recommended Practice for Fire Flow Testing and Marking of Hydrants; 2016.

LL. AUL 1091 - Standard for Butterfly Valves for Fire-Protection Service; Current Edition, Including All Revisions.

MM. AUL 1474 - UL Standard for Safety Adjustable Drop Nipples for Sprinkler Systems; 2004.

NN. AUL 1486 - UL Standard for Safety Quick Opening Devices for Dry Pipe Valves for Fire Protection Service; 2013.

OO. AUL 193 - UL Standard for Safety Alarm Valves for Fire-Protection Service; 2016.

PP. AUL 199 - UL Standard for Safety Automatic Sprinklers for Fire-Protection Service; 2017.

QQ. AUL 213 - Standard for Safety Rubber Gasketed Fittings for Fire- Protection Service; 2009.

RR. AUL 260 - UL Standard for Safety Dry Pipe and Deluge Valves for Fire-Protection Service; 2008.

SS. AUL 262 - Gate Valves for Fire-Protection Service; Current Edition, Including All Revisions.

TT. AUL 312 - Check Valves for Fire-Protection Service; Current Edition, Including All Revisions.

UU. AUL 346 - UL Standard for Safety Waterflow Indicators for Fire Protective Signaling Systems; 2014.

VV. AUL 393 - Indicating Pressure Gauges for Fire-Protection Service; Current Edition, Including All Revisions.

WW. AUL 405 - Fire Department Connection Devices; Current Edition; Including All Revisions.

XX. AUL 464 - UL Standard for Safety Audible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories; 2017.

YY. AUL 486A-486B - Wire Connectors; Current Edition, Including All Revisions.

ZZ. AUL 753 - UL Standard for Safety Alarm Accessories for Automatic Water-Supply Control Valves for Fire Protection Service; 2013.

AAA. BUL 789 - Indicator Posts for Fire-Protection Service; Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.
   1. Ensure required submittals have been provided with sufficient time for review prior to scheduling the Preinstallation Meeting.
   2. Review the detailed requirements for the work of this section and to review the drawings and specifications for this work
      a. Require attendance by all affected installers including but not limited to
         1) Contractor's Superintendent
         2) Installer
         3) Manufacturer/Fabricator Representative
         4) Other affected Subcontractors
         5) Architect/Engineer of Record
         6) Board’s Representative
   3. Record minutes and distribute copies within 5 days after meeting to participants as well as Architect/Engineer of Record, Board and those affected by decisions made.

1.04 SUMMARY

A. Section includes the following fire-suppression piping inside the building:
   1. Wet-pipe sprinkler systems.
   2. Dry-pipe sprinkler systems.

B. The work under this heading shall include the furnishing of all labor, materials, equipment and services necessary for and reasonably incidental to the satisfactory completion of the Fire Protection System, which in general shall include but not be limited to pipe sleeves, pipe and equipment hangers and supports, piping, fittings, flanges, valves, test connections, drains, etc. all as indicated on the Drawings and/or as specified.
   1. Each sprinkler system shall be on a separate zone for each floor as a minimum. Each zone shall be provided with all necessary valves, valve supervisory switches, water flow indicators and drains to make it a separate sprinkler system.
      a. Each sprinkler zone shall have an inspector's test connection at the hydraulically most remote location.
   2. The drawings are schematic in nature and are for information only, intended to show potential arrangement. Contractor shall field verify all information contained on the Drawings and shall be solely responsible for design and installation of the systems in accordance with the specifications. All notes, and specifications on the drawings and herein specified shall be complied with.
   3. Provide shields/baffle plates necessary to protect electrical equipment from sprinkler discharge.
   4. Provide temporary or permanent standpipes in accordance with requirements of authority having jurisdiction to furnish fire protection on all floors during construction. The work performed shall be complete in every respect, resulting in a system(s) installed entirely in accordance with the applicable code, standards, local code amendments, and these specifications.
   5. Existing Fire Protection system(s) may not be taken out of service without prior written approval from the Board and the Fire Department. If such systems are taken out of service, the Contractor shall provide alternate protection, acceptable to the Board and the Fire Department, until those systems are restored to service.

1.05 SUBMITTALS

A. Product Data: Provide data on sprinklers, valves, and specialties, including manufacturers catalog information. Submit performance ratings, rated capacities, operating characteristics, furnished specialties, rough-in details, weights, support requirements, and piping connections.

B. Shop Drawings:
   1. Submit preliminary layout of finished ceiling areas indicating only sprinkler locations coordinated with ceiling installation.
   2. Indicate hydraulic calculations, detailed pipe layout, hangers and supports, sprinklers, components and accessories. Indicate system controls.
   3. Diagram power, signal, and control wiring.
   4. Submit shop drawings to Authorities Having Jurisdiction for approval. Submit proof of approval to Architect/Engineer of Record.

C. Fire Hydrant flow test report completed within the last 12 months.

D. Manufacturer's Certificate: Certify that system has been tested and meets or exceeds specified requirements and code requirements.

E. Approved Sprinkler Piping Drawings: Working plans, prepared according to NFPA 13, that have been approved by Chicago Bureau of Fire Prevention, including hydraulic calculations, if applicable.
   1. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping" and "Contractor's Material and Test Certificate for Underground Piping." Submit written reports documenting the activities required by Part 3.0. These reports are to be submitted within two weeks after the activity is completed.

2. Training Reports: Submit reports on training documenting dates and attendance.

F. Welding certificates.

G. Field quality-control test reports.

H. Operation and Maintenance Data: Include components of system, servicing requirements, record drawings, inspection data, replacement part numbers and availability, and location and numbers of service depot.

I. Project Record Documents: Record actual locations of sprinklers and deviations of piping from drawings. Indicate drain and test locations.

1.06 QUALITY ASSURANCE

A. Installer Qualifications

1. Installer's responsibilities include designing, fabricating, and installing fire-suppression systems and providing professional engineering services needed to assume engineering responsibility. Base calculations on results of fire-hydrant flow test completed within last 12 months.
   a. Engineering Responsibility: Preparation of working plans, calculations, and field test reports by a qualified fire protection professional in accordance with the requirements of the Chicago Bureau of Fire Prevention.

B. Welding: Qualify processes and operators according to ASME BPVC, Section IX.

C. NFPA Standards: Fire-suppression-system equipment, specialties, accessories, installation, and testing shall comply with the following:
1. NFPA 13
2. NFPA 14
3. NFPA 20
4. NFPA 24

1.07 DELIVERY, STORAGE, AND HANDLING

A. In accordance with Division 01 requirements.

B. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

C. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.08 WARRANTY

A. Provide manufacturer’s standard 1-year warranty for materials and labor, commencing on date of substantial completion.

1.09 SYSTEM DESCRIPTIONS

A. Wet-Pipe Sprinkler System: Automatic sprinklers are attached to piping containing water and that is connected to water supply. Water discharges immediately from sprinklers when they are opened. Sprinklers open when heat melts fusible link or destroys frangible device. Hose connections are included if indicated.

B. Dry-Pipe Sprinkler System: Automatic sprinklers are attached to piping containing compressed air. Opening of sprinklers releases compressed air and permits water pressure to open dry-pipe valve. Water then flows into piping and discharges from opened sprinklers.

1.10 PERFORMANCE REQUIREMENTS

A. Standard Piping System Component Working Pressure: Listed for at least 175 psig.

B. Fire-suppression sprinkler system design shall be approved by Chicago Bureau of Fire Prevention.

C. Fire-suppression sprinkler system design and installation shall be in accordance with Chicago Building Code.
   1. Margin of Safety for Available Water Flow and Pressure: 10 percent, including losses through water-service piping, valves, and backflow preventers. Minimum of 10 psi shall be provided.
   2. Sprinkler Occupancy Hazard Classifications:
      a. Building Service Areas: Ordinary Hazard, Group 1.
      b. Electrical Equipment Rooms: Ordinary Hazard, Group 1.
      c. General Storage Areas: Ordinary Hazard, Group 1.
      d. Libraries, Except Stack Areas: Light Hazard.
      e. Library Stack Areas: Ordinary Hazard, Group 2.
      f. Machine Shops: Ordinary Hazard, Group 2.
      g. Mechanical Equipment Rooms: Ordinary Hazard, Group 1.
      h. Office and Public Areas: Light Hazard.
      i. Repair Garages: Ordinary Hazard, Group 2.
   3. Minimum Density for Automatic-Sprinkler Piping Design:
      a. Light-Hazard Occupancy: 0.12 gpm over 1500-sq. ft. area.
      b. Ordinary-Hazard, Group 1 Occupancy (14 foot or lower ceiling height): 0.2 gpm over 2000-sq. ft. area.
      c. Ordinary-Hazard, Group 1 Occupancy (over 14 foot ceiling height): 0.25 gpm over 2500-sq. ft. area
      d. Rooms utilized for HVAC equipment and Gymnasiums: 0.15 gpm over 1500-sq. ft. area.
      e. Special Occupancy Hazard: As determined by authorities having jurisdiction.
   4. Maximum Protection Area per Sprinkler:
      a. Office Spaces: 225 sq. ft.
      b. Storage Areas: 130 sq. ft.
      c. Mechanical Equipment Rooms: 130 sq. ft.
      d. Electrical Equipment Rooms: 130 sq. ft.
      e. Other Areas: According to NFPA 13 recommendations, unless otherwise indicated.
   5. Total Combined Hose-Stream Demand Requirement: According to NFPA 13, unless otherwise indicated:
      a. Light-Hazard Occupancies: 250 gpm for 30 minutes.
      b. Ordinary-Hazard Occupancies: 250 gpm for 60 to 90 minutes.

1.11 COORDINATION

A. Coordinate layout and installation of sprinklers with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.

1.12 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. For buildings with under 300 sprinklers: Minimum of (6) six spare sprinklers, with a minimum of two sprinklers of each type and temperature rating that are installed in the building.
2. For buildings with 300-1000 sprinklers: Minimum of (12) twelve sprinklers with a minimum of two sprinklers of each type and temperature rating that are installed in the building.
3. For buildings with more than 1000 sprinklers: Minimum of (24) twenty four sprinklers with a minimum of two sprinklers of each type and temperature rating that are installed in the building.
4. A sprinkler wrench shall be provided in the spare sprinkler cabinet for each type of sprinkler installed in the building.
5. A list of the sprinklers installed in the building shall be posted in the sprinkler cabinet, and shall identify the following:
    a. Sprinkler Identification Number (SIN) if equipped, or the manufacturer, model, orifice, deflector type, thermal sensitivity, and pressure rating.
    b. General description
    c. Quantity of each type to be contained in the cabinet
    d. Issue or revision date of the list.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements in other articles, provide products by one of the manufacturers specified.
1. Grooved-End, Ductile-Iron Pipe
    a. Grooved-Joint Piping Systems:
    b. Victaulic Co. of America.
    c. Tyco Fire Products
2. Grooved-End, Schedule 40 Steel Pipe
    a. Grooved-Joint Piping Systems:
        1) Anvil International, Inc.
        2) Tyco Fire Products
        3) Victaulic Co. of America.
3. Grooved-End, Schedule 30 Steel Pipe
    a. Grooved-Joint Piping Systems:
        1) Anvil International, Inc.
        2) Tyco Fire Products
        3) Victaulic Co. of America.
4. Grooved-End, Threadable, Thinwall Steel Pipe
    a. Grooved-Joint Piping Systems:
        1) Anvil International, Inc.
        2) Tyco Fire Products
        3) Victaulic Co. of America.
5. Grooved-End, Schedule 10 Steel Pipe
    a. Grooved-Joint Piping Systems:
        1) Anvil International, Inc.
        2) Tyco Fire Products
        3) Victaulic Co. of America.
6. Dielectric Unions
    a. Capitol Manufacturing Co.
    b. Central Plastics Company.
    c. Watts Industries, Inc.; Water Products Div.
    d. Zurn Industries, Inc.; Wilkins Div.
7. Dielectric Flanges
    a. Capitol Manufacturing Co.

b. Central Plastics Company.
c. Watts Industries, Inc.; Water Products Div.

8. Dielectric Flange Insulation Kits
   a. Advance Products and Systems, Inc.
   b. Calpico, Inc.
   c. Central Plastics Company.
   d. Pipeline Seal and Insulator, Inc.
9. Dielectric Nipples
   a. Perfection Corporation.
   b. Precision Plumbing Products, Inc.
   c. Victaulic Co. of America.
10. Sprinkler Drain and Alarm Test Fittings
    a. Tyco Fire Products
    b. Fire-End and Croker Corp.
    c. Viking Corp.
    d. Victaulic Co. of America.
11. Sprinkler Branch-Line Test Fittings
    a. Elkhart Brass Mfg. Co., Inc.
    b. Fire-End and Croker Corp.
    c. Potter-Roemer; Fire-Protection Div.
12. Sprinkler Inspector's Test Fitting
    a. AGF Manufacturing Co.
    b. Tyco Fire Products
    c. G/J Innovations, Inc.
    d. Triple R Specialty of Ajax, Inc.
13. Ball Valves
    a. NIBCO.
    b. Victaulic Co. of America.
    c. Milwaukee.
14. Butterfly Valves
    a. NPS 2 (DN 50) and Smaller
       1) Global Safety Products, Inc.
       2) Milwaukee Valve Company.
       3) Nibco.
       4) Watts Industries, Inc.; Water Products Div.
    b. NPS 2-1/2 (DN 65) and Larger
       1) Tyco Fire Products
       2) Global Safety Products, Inc.
       3) McWane, Inc.; Kennedy Valve Div.
       4) Mueller Company.
       5) NIBCO.
       6) Victaulic Co. of America.
15. Check Valves NPS 2 (DN 50) and Larger
    a. American Cast Iron Pipe Co.; Waterous Co.
    b. Tyco Fire Products
    c. Clow Valve Co.
    d. Crane Co.; Crane Valve Group; Crane Valves.
    e. Globe Fire Sprinkler Corporation.
    f. Hammond Valve.
    g. McWane, Inc.; Kennedy Valve Div.
    h. Mueller Company.
    i. NIBCO.
    j. Stockham.
    k. Watts Industries, Inc.; Water Products Div.
16. Gate Valves
    a. NPS 2 (DN 50) and Smaller

1) Crane Co.; Crane Valve Group; Crane Valves.
2) Hammond Valve.
3) NIBCO.

b. NPS 2-1/2 (DN 65) and Larger
1) Clow Valve Co.
2) Crane Co.; Crane Valve Group; Crane Valves.
3) Hammond Valve.
4) Milwaukee Valve Company.
5) Mueller Company.
6) NIBCO.
7) Red-White Valve Corp.

17. Indicating Valves
a. NPS 2 (DN 50) and Smaller
1) Milwaukee Valve Company.
2) NIBCO.
3) Victaulic Co. of America.
b. NPS 2-1/2 (DN 65) and Larger
1) Tyco Fire Products
2) McWane, Inc.; Kennedy Valve Div.
3) Milwaukee Valve Company.
4) NIBCO.
5) Victaulic Co. of America.

18. Sprinkler System Control Valves
a. Tyco Fire Products
b. Firematic Sprinkler Devices, Inc.
c. Globe Fire Sprinkler Corporation.
d. Reliable Automatic Sprinkler Co., Inc.
e. Star Sprinkler Inc.
f. Victaulic Co. of America.
g. Viking Corp.

19. Dry-Pipe Valves
a. Gast Manufacturing, Inc.
b. Tyco Fire Products
c. Reliable Automatic Sprinkler Co., Inc.
d. Viking Corp.

20. Sprinklers
a. Tyco Fire Products
b. Reliable Automatic Sprinkler Co., Inc.
c. Star Sprinkler Inc.
d. Viking Corp.

21. Fire Department Connections
a. Elkhart Brass Mfg. Co., Inc.
b. Fire-End and Croker Corp.
c. Guardian Fire Equipment Incorporated.
d. Potter-Roemer; Fire-Protection Div.
e. Larsens, Inc.

22. Water-Motor-Operated Alarm
a. Tyco Fire Products
b. Firematic Sprinkler Devices, Inc.
c. Globe Fire Sprinkler Corporation.
d. Reliable Automatic Sprinkler Co., Inc.
e. Star Sprinkler Inc.
f. Viking Corp.

23. Electrically Operated Alarm
a. Potter Electric Signal Company.
b. System Sensor.

c. ITT McDonnell & Miller.

24. Water-Flow Indicator
    a. Tyco Fire Products
    b. ITT McDonnell & Miller.
    c. Potter Electric Signal Company.
    d. System Sensor.
    e. Viking Corp.
25. Pressure Switch
    a. Tyco Fire Products
    b. Potter Electric Signal Company.
    c. System Sensor.
    d. Viking Corp.
26. Valve Supervisory Switch
    a. McWane, Inc.; Kennedy Valve Div.
    b. Potter Electric Signal Company.
    c. System Sensor.
27. Pressure Gages
    a. AGF Manufacturing Co.
    b. AMETEK, Inc.; U.S. Gauge.
    c. Dresser Equipment Group; Instrument Div.
    d. WIKA Instrument Corporation.

2.02 DUCTILE-IRON PIPE AND FITTINGS

A. Mechanical-Joint, Ductile-Iron Pipe: AWWA C151/A21.51, with mechanical-joint bell end and plain end.
   1. Mechanical-Joint, Ductile-Iron Fittings: AWWA C110/A21.10, ductile- or gray-iron standard pattern.
   2. Glands, Gaskets, and Bolts: AWWA C111/A21.11, ductile- or gray-iron gland, rubber gasket, and steel bolts and nuts.

2.03 STEEL PIPE AND FITTINGS

A. Threaded-End, Schedule 40 Steel Pipe: ASTM A53/A53M, ASTM A135/A135M, or ASTM A795/A795M, hot-dip galvanized where indicated and with factory- or field-formed threaded ends.
   1. Cast-Iron Threaded Flanges: ASME B16.1
   2. Malleable-Iron Threaded Fittings: ASME B16.3
   3. Gray-Iron Threaded Fittings: ASME B16.4
   4. Steel Threaded Pipe Nipples: ASTM A733, made of ASTM A53/A53M or ASTM A106/A106M, Schedule 40, seamless steel pipe hot-dip galvanized where indicated. Include ends matching joining method.
   5. Steel Threaded Couplings: ASTM A865/A865M hot-dip galvanized-steel pipe where indicated.

B. Plain-End, Schedule 40 Steel Pipe: ASTM A53/A53M, ASTM A135/A135M, or ASTM A795/A795M hot-dip galvanized-steel pipe where indicated.
   1. Steel Welding Fittings: ASTM A234/A234M, and ASME B16.9 or ASME B16.11.
   2. Steel Flanges and Flanged Fittings: ASME B16.5

C. Grooved-End, Schedule 40 Steel Pipe: ASTM A53/A53M, ASTM A135/A135M, or ASTM A795/A795M, hot-dip galvanized where indicated and with factory- or field-formed, square-cut- or roll-grooved ends.
   1. Grooved-End Fittings: UL-listed, ASTM A536, ductile-iron casting with OD matching steel-pipe OD.

2. Grooved-End-Pipe Couplings: UL 213 and AWWA C606, rigid pattern, unless otherwise indicated; gasketed fitting matching steel-pipe OD. Include ductile-iron housing with keys matching steel-pipe and fitting grooves, prelubricated rubber gasket listed for use with housing, and steel bolts and nuts.

D. Threaded-End, Schedule 30 Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, with wall thickness less than Schedule 40 and equal to or greater than Schedule 30; or ASTM A795/A795M and ASME B36.10M, Schedule 30 wrought-steel pipe; hot-dip galvanized where indicated and with factory- or field-threaded ends.
1. Cast-Iron Threaded Flanges: ASME B16.1
2. Malleable-Iron Threaded Fittings: ASME B16.3
3. Gray-Iron Threaded Fittings: ASME B16.4
4. Steel Threaded Pipe Nipples: ASTM A733, made of ASTM A53/A53M or ASTM A106/A106M, Schedule 40, seamless steel pipe hot-dip galvanized where indicated. Include ends matching joining method.
5. Steel Threaded Couplings: ASTM A865/A865M hot-dip galvanized-steel pipe where indicated.

E. Plain-End, Schedule 30 Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, with wall thickness less than Schedule 40 and equal to or greater than Schedule 30; or ASTM A795/A795M and ASME B36.10M, Schedule 30 wrought-steel pipe hot-dip galvanized where indicated.
1. Steel Welding Fittings: ASTM A234/A234M, and ASME B16.9 or ASME B16.11.
2. Steel Flanges and Flanged Fittings: ASME B16.5.

F. Grooved-End, Schedule 30 Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, with wall thickness less than Schedule 40 and equal to or greater than Schedule 30; or ASTM A795/A795M and ASME B36.10M, Schedule 30 wrought-steel pipe hot-dip galvanized where indicated; with factory- or field-formed, roll-grooved ends.
1. Grooved-Joint Piping Systems:
    a. Grooved-End Fittings: UL-listed, ASTM A536, ductile-iron casting with OD matching steel-pipe OD.
    b. Grooved-End-Pipe Couplings: UL 213 and AWWA C606, rigid pattern, unless otherwise indicated; gasketed fitting matching steel-pipe OD. Include ductile-iron housing with keys matching steel-pipe and fitting grooves, prelubricated rubber gasket listed for use with housing, and steel bolts and nuts.

G. Plain-End, Threadable, Thinwall Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, with wall thickness less than Schedule 40 and greater than Schedule 10.
1. Steel Welding Fittings: ASTM A234/A234M, and ASME B16.9 or ASME B16.11.
2. Steel Flanges and Flanged Fittings: ASME B16.5.

H. Grooved-End, Threadable, Thinwall Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, with wall thickness less than Schedule 40 and greater than Schedule 10, and with factory- or field-formed, roll-grooved ends.
1. Grooved-Joint Piping Systems:
    a. Grooved-End Fittings: UL-listed, ASTM A536, ductile-iron casting with OD matching steel-pipe OD.
    b. Grooved-End-Pipe Couplings: UL 213 and AWWA C606, rigid pattern, unless otherwise indicated; gasketed fitting matching steel-pipe OD. Include ductile-iron housing with keys matching steel-pipe and fitting grooves, prelubricated rubber gasket listed for use with housing, and steel bolts and nuts.

I. Plain-End, Schedule 10 Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, Schedule 10 in NPS 5 (DN 125) and smaller; and NFPA 13 specified wall thickness in NPS 6 to NPS 10 (DN 150 to DN 250).

1. Steel Welding Fittings: ASTM A234/A234M, and ASME B16.9 or ASME B16.11 .
2. Steel Flanges and Flanged Fittings: ASME B16.5.

J. Grooved-End, Schedule 10 Steel Pipe: ASTM A135/A135M or ASTM A795/A795M, Schedule 10 in NPS 5 (DN 125) to NPS 2-1/2; and NFPA 13-specified wall thickness in NPS 6 to NPS 10 (DN 150 to DN 250); with factory- or field-formed, roll-grooved ends.
1. Grooved-Joint Piping Systems:
   a. Grooved-End Fittings: UL-listed, ASTM A536, ductile-iron casting with OD matching steel-pipe OD.
   b. Grooved-End-Pipe Couplings: UL 213 and AWWA C606, rigid pattern, unless otherwise indicated; gasketed fitting matching steel-pipe OD. Include ductile-iron housing with keys matching steel-pipe and fitting grooves, prelubricated rubber gasket listed for use with housing, and steel bolts and nuts.

2.04 COPPER TUBE AND FITTINGS

A. Soft Copper Tube: ASTM B88, Type L (ASTM B88M, Type B), water tube, annealed temper; with plain ends.
1. Copper fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint pressure type. Furnish only wrought-copper fittings if indicated.
2. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP-3 or BCuP-4.

B. Plain-End, Hard Copper Tube: ASTM B88, Type L (ASTM B88M, Type B), water tube, drawn temper.
1. Copper Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought-copper, solder-joint pressure type. Furnish only wrought-copper fittings if indicated.
2. Bronze Flanges: ASME B16.24, Class 150, with solder-joint end. Furnish Class 300 flanges if required to match tubing system.
3. Copper Unions: MSS SP-123, cast-copper-alloy, hexagonal-stock body with ball-and-socket metal-to-metal seating surfaces, and solder-joint or threaded ends.
4. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP-3 or BCuP-4.

2.05 DIELECTRIC FITTINGS

A. Assembly shall be copper alloy, ferrous, and insulating materials with ends matching piping system.

B. Dielectric Unions: Factory-fabricated assembly, designed for 250-psig minimum working pressure at 180 deg F. Include insulating material that isolates dissimilar materials and ends with inside threads according to ASME B1.20.1.

C. Dielectric Flanges: Factory-fabricated companion-flange assembly, for 175-psig minimum working-pressure rating as required for piping system.

D. Dielectric Flange Insulation Kits: Components for field assembly shall include CR or phenolic gasket, PE or phenolic bolt sleeves, phenolic washers, and steel backing washers.

E. Dielectric Nipples: Electroplated steel with inert and noncorrosive thermoplastic lining, with combination of plain, threaded, or grooved ends and 300-psig working-pressure rating at 225 deg F.

2.06 CORROSION-PROTECTIVE ENCASEMENT FOR PIPING

A. Encasement for Underground Metal Piping: ASTM A674 or AWWA C105/A21.5, PE film, 0.008-inch minimum thickness, tube or sheet.

2.07 SPRINKLER SPECIALTY FITTINGS

A. Sprinkler specialty fittings shall be UL listed or FM approved, with 175-psig minimum working-pressure rating, and made of materials compatible with piping. Sprinkler specialty fittings shall have 250-psig minimum working-pressure rating if fittings are components of high-pressure piping system.

B. Outlet Specialty Fittings:
   1. Mechanical-T and -Cross Fittings: Not Allowed.
   2. Snap-On and Strapless Outlet Fittings: Not Allowed.

C. Sprinkler Drain and Alarm Test Fittings: Cast- or ductile-iron body; with threaded inlet and outlet, test valve, and orifice and sight glass.

D. Sprinkler Branch-Line Test Fittings: Brass body with threaded inlet, capped drain outlet, and threaded outlet for sprinkler.

E. Sprinkler Inspector's Test Fitting: Cast- or ductile-iron housing with threaded inlet and drain outlet and sight glass.

F. Drop-Nipple Fittings: UL 1474, adjustable with threaded inlet and outlet, and seals.

G. Dry-Pipe-System Fittings: UL listed for dry-pipe service.

2.08 LISTED FIRE-PROTECTION VALVES

A. Valves shall be UL listed or FM approved, with 175-psig minimum pressure rating. Valves shall have 250-psig minimum pressure rating if valves are components of high-pressure piping system.

B. Gate Valves with Wall Indicator Posts:
   1. Gate Valves: UL 262, cast-iron body, bronze mounted, with solid disc, nonrising stem, operating nut, and flanged ends.
   2. Indicator Posts: UL 789, horizontal-wall type, cast-iron body, with operating wrench, extension rod, locking device, and cast-iron barrel.

C. Ball Valves: Comply with UL 1091, except with ball instead of disc.
   1. NPS 1-1/2 (DN 40) and Smaller: Bronze body with threaded ends.
   2. NPS 2 and NPS 2-1/2 (DN 50 and DN 65): Bronze body with threaded ends or ductile-iron body with grooved ends.
   3. NPS 3 (DN 80): Ductile-iron body with grooved ends.

D. Butterfly Valves: UL 1091.
   1. NPS 2 (DN 50) and Smaller: Bronze body with threaded ends.
   2. NPS 2-1/2 (DN 65) and Larger: Bronze, cast-iron, or ductile-iron body; wafer type or with flanged or grooved ends.

E. Check Valves NPS 2 (DN 50) and Larger: UL 312, swing type, cast-iron body with flanged or grooved ends.

F. Gate Valves: UL 262, OS&Y type.
   1. NPS 2 (DN 50) and Smaller: Bronze body with threaded ends.
   2. NPS 2-1/2 (DN 65) and Larger: Cast-iron body with flanged ends.

G. Indicating Valves: UL 1091, with integral indicating device and ends matching connecting piping.
   1. Indicator: Electrical, 115-V ac, prewired, single-circuit, supervisory switch.
   2. NPS 2 (DN 50) and Smaller: Ball or butterfly valve with bronze body and threaded ends.
   3. NPS 2-1/2 (DN 65) and Larger: Butterfly valve with cast- or ductile-iron body; wafer type or with flanged or grooved ends.

2.09 SPECIALTY VALVES

A. Sprinkler System Control Valves: UL listed or FM approved, cast- or ductile-iron body with flanged or grooved ends, and 175-psig minimum pressure rating. Control valves shall have 250-psig minimum pressure rating if valves are components of high-pressure piping system.
   1. Alarm Check Valves: UL 193, designed for horizontal or vertical installation, with bronze grooved seat with O-ring seals, single-hinge pin, and latch design. Include trim sets for bypass, drain, electrical sprinkler alarm switch, pressure gages, retarding chamber, and fill-line attachment with strainer.
      a. Drip Cup Assembly: Pipe drain without valves and separate from main drain piping. Spill to exterior where possible.
   2. Dry-Pipe Valves: UL 260, differential type; with bronze seat with O-ring seals, single-hinge pin, and latch design. Include UL 1486, quick-opening devices, trim sets for air supply, drain, priming level, alarm connections, ball drip valves, pressure gages, priming chamber attachment, and fill-line attachment.
   3. Air Compressor: UL 753, fractional horsepower, 120-V ac, 60 Hz, single phase.

2.10 SPRINKLERS

A. Sprinklers shall be UL listed or FM approved, with 175-psig minimum pressure rating. Sprinklers shall have 250-psig minimum pressure rating if sprinklers are components of high-pressure piping system.

B. Automatic Sprinklers: With heat-responsive element complying with the following:
   1. UL 199, for nonresidential applications.

C. Sprinkler Types and Categories: Nominal 1/2-inch orifice for "Ordinary" temperature classification rating, unless otherwise indicated or required by application.

D. Sprinkler types, features, and options as follows:
   1. Concealed ceiling sprinklers, including cover plate.
   2. Flush ceiling sprinklers, including escutcheon.
   3. High-pressure sprinklers.
   4. Pendent sprinklers.
   5. Pendent, dry-type sprinklers.
   6. Quick-response sprinklers.
   7. Sidewall sprinklers.
   8. Sidewall, dry-type sprinklers.
   9. Upright sprinklers.

E. Sprinkler Finishes: Chrome plated, or bronze.

F. Special Coatings: Nickel teflon, and corrosion-resistant paint.

G. Sprinkler Escutcheons: Materials, types, and finishes for the following sprinkler mounting applications. Escutcheons for concealed and flush sprinklers are specified with sprinklers.
   1. Ceiling Mounting: Chrome-plated steel, 2 piece, with 1-inch vertical adjustment.
   2. Sidewall Mounting: Chrome-plated steel, one piece, flat.

H. Sprinkler Guards: Wire-cage type, including fastening device for attaching to sprinkler.

2.11 FIRE DEPARTMENT CONNECTIONS

A. Wall-Type, Fire Department Connection: UL 405, 175-psig minimum pressure rating; with corrosion-resistant-metal body with brass inlets, brass wall escutcheon plate, brass lugged caps with gaskets and brass chains, and brass lugged swivel connections. Include inlets with threads according to NFPA 1963 and matching local fire department sizes and threads, outlet with pipe threads, extension pipe nipples, check devices or clappers for inlets, and escutcheon plate with marking similar to ["AUTO SPKR"] ["AUTO SPKR & STANDPIPE."]
   1. Type: Flush, with two inlets and square or rectangular escutcheon plate, or Exposed, projecting, with two inlets and round escutcheon plate.
   2. Finish: Polished chrome-plated.

B. Exposed, Freestanding-Type, Fire Department Connection: UL 405, B pressure rating; with corrosion-resistant-metal body, brass inlets with threads according to NFPA 1963 and matching local fire department sizes and threads, and bottom outlet with pipe threads. Include brass lugged caps, gaskets, and brass chains; brass lugged swivel connection and drop clapper for each hose-connection inlet; 18-inch- high, brass sleeve; and round, floor, brass escutcheon plate with marking ["AUTO SPKR"] ["AUTO SPKR & STANDPIPE."]
   1. Finish Including Sleeve: Polished chrome-plated.

2.12 ALARM DEVICES

A. Alarm-device types shall match piping and equipment connections.

B. See Section 28 46 00 - Fire Detection and Alarm for devices not listed here.

C. Water-Motor-Operated Alarm: UL 753, mechanical-operation type with pelton-wheel operator with shaft length, bearings, and sleeve to suit wall construction and 10-inch- diameter, cast-aluminum alarm gong with red-enamel factory finish. Include NPS 3/4 (DN 20) inlet and NPS 1 (DN 25) drain connections.

D. Electrically Operated Alarm: UL 464, with 10-inch- diameter, vibrating-type, metal alarm bell with red-enamel factory finish and suitable for outdoor use.

E. Water-Flow Indicator: UL 346, electrical-supervision, paddle-operated-type, water-flow detector with 250-psig pressure rating and designed for horizontal or vertical installation. Include two single-pole, double-throw circuit switches for isolated alarm and auxiliary contacts, 7 A, 125-V ac and 0.25 A, 24-V dc; complete with factory-set, field-adjustable retard element to prevent false signals and tamperproof cover that sends signal if removed.

F. Pressure Switch: UL 753, electrical-supervision-type, water-flow switch with retard feature. Include single-pole, double-throw, normally closed contacts and design that operates on rising pressure and signals water flow.

G. Valve Supervisory Switch: UL 753, electrical, single-pole, double-throw switch with normally closed contacts. Include design that signals controlled valve is in other than fully open position.

2.13 PRESSURE GAGES

A. Description: UL 393, 3-1/2- to 4-1/2-inch- diameter, dial pressure gage with range of 0 to 250 psig minimum.
   1. Water System Piping: Include caption "WATER" or "AIR/WATER" on dial face.
   2. Air System Piping: Include caption "AIR" or "AIR/WATER" on dial face.

PART 3 - EXECUTION

3.01 PREPARATION

A. Perform fire-hydrant flow test according to NFPA 13 and NFPA 291. Use results for system design calculations required in "Quality Assurance" Article.

B. Report test results promptly and in writing.

3.02 EXAMINATION

A. Examine roughing-in for hose connections and stations to verify actual locations of piping connections before installation.

B. Examine walls and partitions for suitable thicknesses, fire- and smoke-rated construction, framing for hose-station cabinets, and other conditions where hose connections and stations are to be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.03 PIPING APPLICATIONS, GENERAL

A. Shop weld pipe joints where welded piping is indicated.

B. Do not use welded joints for galvanized-steel pipe.

C. Flanges, flanged fittings, unions, nipples, and transition and special fittings with finish and pressure ratings same as or higher than system's pressure rating may be used in aboveground applications, unless otherwise indicated.

D. Piping between Fire Department Connections and Check Valves: Galvanized, Schedule 40 steel pipe with grooved ends; grooved-end fittings; grooved-end-pipe couplings; and grooved joints.

3.04 SPRINKLER SYSTEM PIPING APPLICATIONS

A. Standard-Pressure, Wet-Pipe Sprinkler System, 175-psig Maximum Working Pressure:
1. NPS 2 and smaller (DN 50 and smaller): Threaded-end, black or galvanized, Schedule 40 steel pipe; cast- or malleable-iron threaded fittings; and threaded joints.
2. NPS 2-1/2 and larger (DN 65 and larger): Threaded-end, black or galvanized, Schedule 40 steel pipe; cast- or malleable-iron threaded fittings; and threaded joints.
3. NPS 2-1/2 and larger (DN 65 and larger): Grooved-end, black or galvanized, Schedule 40 steel pipe; grooved-end fittings; grooved-end-pipe couplings; and grooved joints.
4. NPS 2-1/2 and larger (DN 65 and larger): Grooved-end, Schedule 10 steel pipe; grooved-end fittings; grooved-end-pipe couplings; and grooved joints.

B. Standard-Pressure, Dry-Pipe Sprinkler System, 175-psig Maximum Working Pressure:
1. NPS 2 and smaller (DN 50 and smaller): Threaded-end, galvanized, Schedule 40 steel pipe; galvanized cast- or malleable-iron threaded fittings; and threaded joints.
2. NPS 2-1/2 and larger (DN 65 and larger): Threaded-end, galvanized, Schedule 40 steel pipe; galvanized cast- or malleable-iron threaded fittings; and threaded joints.
3. NPS 2-1/2 to NPS 3-1/2 (DN 65 to DN 90): Grooved-end, galvanized, Schedule 40 steel pipe; galvanized grooved-end fittings; grooved-end-pipe couplings; and grooved joints.

3.05 VALVE APPLICATIONS

A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
   1. Listed Fire-Protection Valves: UL listed and FMG approved for applications where required by NFPA 13.
      a. Shutoff Duty: Use ball, butterfly, or gate valves.
   2. Unlisted General-Duty Valves: For applications where UL-listed and FMG-approved valves are not required by NFPA 13.
      a. Shutoff Duty: Use ball, butterfly, or gate valves.
      b. Throttling Duty: Use ball or globe valves.

3.06 JOINT CONSTRUCTION

A. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
   1. ASME B16.21, nonmetallic, flat, 1/8-inch maximum thickness unless thickness or specific material is indicated.
      a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
      b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
   2. AWWA C110, rubber, flat face, 1/8 inch thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.

B. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.

C. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.

D. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.

E. Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

F. Threaded Joints: Comply with NFPA 13 for pipe thickness and threads. Do not thread pipe smaller than NPS 8 (DN 200) with wall thickness less than Schedule 40 unless approved by authorities having jurisdiction and threads are checked by a ring gage and comply with ASME B1.20.1.

G. Grooved Joints: Assemble joints with listed coupling and gasket, lubricant, and bolts.
   1. Steel Pipe: Square-cut or roll-groove piping as indicated. Use grooved-end fittings and rigid, grooved-end-pipe couplings, unless otherwise indicated..
   2. Dry-Pipe Systems: Use fittings and gaskets listed for dry-pipe service.

H. Dissimilar-Metal Piping Joints: Construct joints using dielectric fittings compatible with both piping materials.
   1. NPS 2 (DN 50) and Smaller: Use dielectric unions, couplings, or nipples.
   2. NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Use dielectric flanges.
   3. NPS 5 (DN 125) and Larger: Use dielectric flange insulation kits.

3.07 SERVICE-ENTRANCE PIPING

A. Connect fire-suppression piping to water-service piping of size and in location indicated for service entrance to building. Refer to Section 33 10 13 - Water Service for exterior piping.

B. Install shutoff valve, backflow preventer, pressure gage, drain, and other accessories indicated at connection to water-service piping. Refer to Section 33 10 13 - Water Service for backflow preventers.

C. Install shutoff valve, check valve, pressure gage, and drain at connection to water service.

3.08 WATER-SUPPLY CONNECTION

A. Connect fire-suppression piping to building's interior water distribution piping. Refer to Section 22 11 16 - Domestic Water Piping for interior piping.

B. Install shutoff valve, backflow preventer, pressure gage, drain, and other accessories indicated at connection to water distribution piping. Refer to Section 22 11 19 - Domestic Water Piping Specialties for backflow preventers.

C. Install shutoff valve, check valve, pressure gage, and drain at connection to water supply.

3.09 PIPING INSTALLATION

A. Refer to Division 22 Sections for basic piping installation.

B. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated, as far as practical.
   1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect/Engineer of Record before deviating from approved working plans.

C. Install underground ductile-iron service-entrance piping according to NFPA 24 and with restrained joints. Encase piping in corrosion-protective encasement.

D. Use approved fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.

E. Install unions adjacent to each valve in pipes NPS 2 (DN 50) and smaller. Unions are not required on flanged devices or in piping installations using grooved joints.

F. Install flanges or flange adapters on valves, apparatus, and equipment having NPS 2-1/2 (DN 65) and larger connections.

G. Install "Inspector's Test Connections" in sprinkler system piping at hydraulically most remote location of each system, complete with shutoff valve, sized and located according to NFPA 13 and Chicago Building Code 15-16-450.

H. Install sprinkler piping with drains for complete system drainage.

I. Install sprinkler zone control valves, test assemblies, and drain risers adjacent to standpipes when sprinkler piping is connected to standpipes.

J. Install drain valves on standpipes.

K. Install ball drip valves to drain piping between fire department connections and check valves. Drain to floor drain or outside building.

L. Install alarm devices in piping systems.

M. Hangers and Supports: Comply with NFPA 13 for hanger materials.
   1. Install sprinkler system piping according to NFPA 13.

N. Install pressure gages on riser or feed main, at each sprinkler test connection, and at top of each standpipe. Include pressure gages with connection not less than NPS 1/4 (DN 8) and with soft metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal, and install where they will not be subject to freezing.

O. Drain dry-pipe sprinkler piping.

P. Pressurize and check dry-pipe sprinkler system piping and air compressors.

Q. Fill wet-pipe sprinkler system piping with water.

3.10 VALVE INSTALLATION

A. Install listed fire-protection valves, unlisted general-duty valves, specialty valves and trim, controls, and specialties according to NFPA 13 and City of Chicago Building Code & Chicago Bureau of Fire Prevention requirements.

B. Install listed fire-protection shutoff valves supervised-open, located to control sources of water supply except from fire department connections. Install permanent identification signs indicating portion of system controlled by each valve.

C. Install check valve in each water-supply connection. Install backflow preventers instead of check valves in potable-water supply sources.

D. Specialty Valves:
   1. Alarm Check Valves: Install in vertical position for proper direction of flow, including bypass check valve and retarding chamber drain-line connection.
   2. Dry-Pipe Valves: Install trim sets for air supply, drain, priming level, alarm connections, ball drip valves, pressure gages, priming chamber attachment, and fill-line attachment.
      a. Install air compressor and compressed-air supply piping.

3.11 SPRINKLER APPLICATIONS

A. Drawings indicate sprinkler types to be used. Where specific types are not indicated, use the following sprinkler types:
   1. Rooms without Ceilings: Upright sprinklers.
   2. Rooms with Suspended Ceilings: Recessed or concealed sprinklers.
   3. Wall Mounting: Sidewall sprinklers.
   4. Spaces Subject to Freezing: Upright for dry systems, pendent, dry sprinklers; or sidewall, dry sprinklers for wet systems as required.
   5. Special Applications: Extended-coverage, and quick-response sprinklers where indicated or required.
   6. Sprinkler Finishes:
      a. Upright, Pendent, and Sidewall Sprinklers: Chrome plated in finished spaces exposed to view; rough bronze in unfinished spaces not exposed to view; wax coated where exposed to acids, chemicals, or other corrosive fumes.
      b. Concealed Sprinklers: Rough brass, with chrome or brass cover plate.
      c. Recessed Sprinklers: Bright chrome, with bright chrome escutcheon.

3.12 SPRINKLER INSTALLATION

A. Unless otherwise indicated, all sprinklers shall be arranged symmetrically within each room or space. All sprinkler heads to be installed in suspended/acoustical tile ceilings of any type shall be located as indicated on the architectural reflected ceiling plans or fire protection plans where sprinkler locations are shown. Sprinklers shall be placed in the center of ceiling tile in both directions.

B. Do not install pendent or sidewall, wet-type sprinklers in areas subject to freezing. Use dry-type sprinklers with water supply from heated space.

3.13 FIRE DEPARTMENT CONNECTION INSTALLATION

A. Install wall-type, fire department connections in vertical wall.

B. Install freestanding-type, fire department connections in level surface.
   1. Install protective pipe bollards on two sides of each fire department connection. Refer to Section 05 50 00 - Metal Fabrications for pipe bollards.

C. Install ball drip valve at each check valve for fire department connection.

3.14 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment to allow service and maintenance.

C. Connect water-supply piping to fire-suppression piping. Include backflow preventer between potable-water piping and fire-suppression piping. Refer to Section 22 11 19 - Domestic Water Piping Specialties for backflow preventers.

D. Install ball drip valves at each check valve for fire department connection. Drain to floor drain or outside building.

E. Connect piping to specialty valves, hose valves, specialties, fire department connections, and accessories.

F. Connect compressed-air supply to dry-pipe sprinkler piping.

G. Connect air compressor to the following piping and wiring:
   1. Pressure gages and controls.
   2. Electrical power system.
   3. Fire alarm devices, including low-pressure alarm.

H. Electrical Connections: Power wiring is specified in Division 26.

I. Connect alarm devices to fire alarm.

J. Ground equipment according to Section 26 05 26 - Grounding and Bonding for Electrical Systems.

K. Connect wiring according to Division 26.

L. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B

3.15 LABELING AND IDENTIFICATION

A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13 and in Section 22 05 53 - Identification for Plumbing Piping and Equipment.

3.16 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:
1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
3. Energize circuits to electrical equipment and devices.
4. Start and run excess-pressure pumps.
5. Start and run air compressors.
6. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.
7. Flush, test, and inspect standpipe systems according to NFPA 14, "System Acceptance" Chapter.
8. Coordinate with fire alarm tests. Operate as required.
9. Coordinate with fire-pump tests. Operate as required.
10. Verify that equipment hose threads are same as local fire department equipment.

B. Report test results promptly and in writing to Architect/Engineer of Record and authorities having jurisdiction.

3.17 CLEANING AND ADJUSTING

A. Clean dirt and debris from sprinklers.

B. Remove and replace sprinklers with paint other than factory finish.

C. Protect sprinklers from damage until Substantial Completion.

3.18 CONTRACTOR STARTUP AND REPORTING

A. Engage a factory-authorized service representative to train Board's maintenance personnel to adjust, operate, and maintain specialty valves.

3.19 DEMONSTRATION AND COMMISSIONING - TRAINING

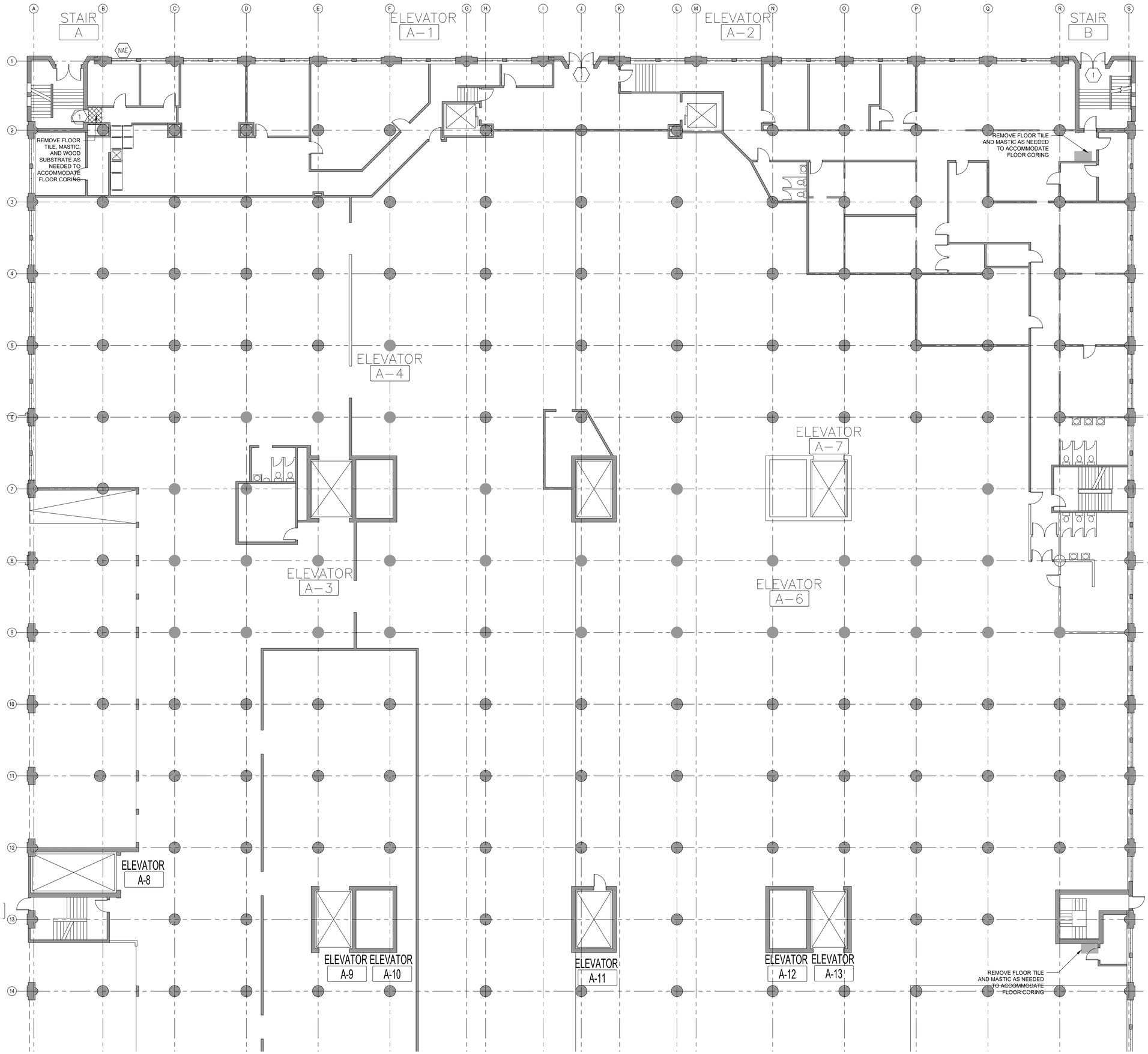
A. Train Board’s maintenance personnel on procedures and schedules for starting up and shutting down, troubleshooting, servicing, and maintaining the system. The training will occur after the startup report has been provided to the Board and the trainer will provide two (2) Installation and Operations manuals for the use of the Board’s personnel during training.

B. Review data in maintenance manuals. All required and recommended maintenance will be reviewed as well as operational troubleshooting. If the IOM does not include a written troubleshooting guide one will be provided.

C. Schedule training with the Board, through the Architect/Engineer of Record, with at least seven days advance notice.

D. Demonstrate proper operation of equipment to commissioning agent or designated Board personnel. The scope of the demonstration will include functional performance requirements under both local and building automation control as well as any commissioning requirements in Divisions 01 or 23.

END OF SECTION 21 13 00



1 ASBESTOS ABATEMENT PLAN
1ST FLOOR PLAN

3/8" = 1'-0"

ENVIRONMENTAL ABATEMENT SCOPE OF WORK

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2. ASBESTOS ABATEMENT: REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING FLOOR TILE, FLOOR TILE MASTIC, AND WOOD SUB-FLOORING AS NEEDED TO ACCOMMODATE FLOOR CORING.
3. ASBESTOS ABATEMENT: REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING CEMENT-TYPE FLOORING MATERIAL AS NEEDED TO ACCOMMODATE FLOOR CORING.
4. ALL WORK SHALL BE CONDUCTED PER SPECIFICATION 028200 AND ALL APPLICABLE EPA, IDPH, AND OSHA RULES AND REGULATIONS.

ENVIRONMENTAL ABATEMENT GENERAL NOTES

1. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES IN THE FIELD BEFORE BIDDING. ANY QUESTIONS ABOUT THE SCOPE OR CLARIFICATIONS SHALL BE OBTAINED FROM THE PROJECT DESIGNER PRIOR TO BIDDING. ANY INTERPRETATIONS OF THE DESIGN DOCUMENTS SHALL ONLY BE MADE BY THE PROJECT DESIGNER.
2. ABATEMENT CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS. ALL DIMENSIONS AND DETAILS ARE TAKEN FROM RECORD DRAWINGS AND ARE NOT GUARANTEED TO BE ACCURATE. ASBESTOS ABATEMENT CONTRACTOR SHALL FIELD VERIFY THE ACTUAL FIELD DIMENSIONS AND LOCATIONS.
3. ABATEMENT CONTRACTOR TO ERECT CONSTRUCTION SEPARATION BARRIERS IN A MANNER THAT WILL CONFINE DECONTAMINATION UNITS, ASSOCIATED WATER AND ELECTRICAL HOOK UPS, WATER FILTRATION, WATER DISCHARGE, NEGATIVE AIR EXHAUST, AND ALL WORK AREA OPERATIONS, ETC.
4. ABATEMENT CONTRACTOR IS RESPONSIBLE FOR THE LOCKOUT AND TAGOUT OF ANY ASSOCIATED EQUIPMENT PRIOR TO STARTING ABATEMENT.
5. THE ENVIRONMENTAL SCOPE IS AN INTEGRAL PART OF THE ARCHITECT OF RECORD (AOR) TOTAL SPECIFICATION PACKAGE; THEREFORE, IT SHALL BE USED IN CONJUNCTION WITH THE TOTAL SPECIFICATION PACKAGE. THE TERM "REFER TO ARCHITECTS SCOPE OF WORK DRAWINGS" IS MEANT TO BE AN ADDITION TO WHAT THE ARCHITECT HAS INDICATED ON DRAWINGS AND BY NO MEANS LIMITS THE WORK TO WHAT IS SHOWN ON THE ARCHITECT'S DRAWINGS.
6. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR ALL SECURITY TO THE WORK AREA(S) DURING THE ABATEMENT PROJECT. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES OR THEFTS TO PROPERTY IN THE WORK AREA(S), UNTIL THE AREA(S) ARE RETURNED TO THE PROPERTY OWNER. THE ABATEMENT CONTRACTOR SHALL REPAIR AND/OR REPLACE DAMAGED OR STOLEN PROPERTY TO THE SATISFACTION OF, AND AT NO ADDITIONAL COST TO THE USING AGENCY.
7. WASTE OUT STAGING SHALL BE COORDINATED WITH ALL TRADES COMPLETING WORK. DUMPSTERS FOR ASBESTOS WASTE SHALL 6-SIDED, FULLY ENCLOSED AND LOCKABLE. ASBESTOS WASTE STORAGE AREAS WITHIN THE BUILDING SHALL NOT BE PERMITTED. DUMPSTER LOCATIONS SHALL BE COORDINATED WITH USING AGENCY PRIOR TO MOBILIZATION.
8. OUTDOOR WASTE DUMPSTER SHALL BE LOCATED PER OWNER OR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO THE START OF ABATEMENT.
9. THE ASBESTOS ABATEMENT CONTRACTOR SHALL PROVIDE A HARD COPY OF ALL WASTE MANIFESTS WITHIN 30 DAYS OF THE WASTE BEING HAULED OFF-SITE. WASTES SHALL TRANSPORTED DIRECTLY TO LANDFILL.
10. HEPA FILTERED NEGATIVE AIR SHALL BE MAINTAINED ON A CONTINUOUS 24-HOUR BASIS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING ADEQUATE PERSONNEL AND BACKUP EQUIPMENT TO MAINTAIN OPERATION.
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13. ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND ALL OTHER CODES THAT HAVE AUTHORITY OVER THIS PROJECT. ABATEMENT CONTRACTOR SHALL SECURE REQUIRED PERMITS AS NECESSARY. ABATEMENT CONTRACTOR SHALL PROVIDE ALL NECESSARY SAFEGUARDS, BARRIERS, TEMPORARY POWER, LIGHTING, FIRE PROTECTION, ETC. AS REQUIRED DURING LEAD ABATEMENT/SELECTIVE DEMOLITION, MOLD REMEDIATION, AND ASBESTOS ABATEMENT.
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15. THE ABATEMENT CONTRACTOR SHALL USE ADEQUATE PRECAUTIONS FOR SAFETY OF, AND SHALL PROVIDE REASONABLE PROTECTION TO PREVENT DAMAGE, INJURY, OR LOSS TO EXISTING CONDITIONS TO REMAIN.
16. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE TO BECOME FAMILIAR WITH AND VERIFY THE EXISTING CONDITIONS. THE ASBESTOS ABATEMENT DRAWINGS SHALL SERVE TO AID THE CONTRACTOR IN THEIR EVALUATION OF THE EXTENT OF ABATEMENT; BUT SHALL NOT BE HELD TO BE ALL INCLUSIVE.
17. THE ABATEMENT CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL ASBESTOS ABATEMENT REQUIRED AS NECESSARY TO FULFILL THE PURPOSE AND INTENT OF THE FINISHED WORK, WHETHER OR NOT IT IS SPECIFICALLY SHOWN OR NOTED IN THESE DOCUMENTS.
18. THE ASBESTOS ABATEMENT CONTRACTOR SHALL FIELD INSPECT ALL ABATEMENT WORK PRIOR TO ITS REMOVAL, TO INSURE SUCH REMOVAL DOES NOT IMPAIR THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDING. IF THE INSPECTION INDICATES THAT THE STRUCTURAL INTEGRITY MAY BE IMPAIRED, NOTIFY THE ENVIRONMENTAL CONSULTANT IMMEDIATELY.
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ENVIRONMENTAL ABATEMENT ADDITIONAL DESING DETAILS

1. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE GENERAL CONTRACTOR AND/OR ASSOCIATED TRADES TO CONFIRM THE EXTENT AND LOCATION OF ASBESTOS FLOORING REMOVAL.
2. WORKER DECONTAMINATION UNIT SHALL BE CONSIST OF AT LEAST A CLEAN ROOM, AIRLOCK, SHOWER ROOM, AIRLOCK, AND EQUIPMENT ROOM. THE CLEAN ROOM AND EQUIPMENT ROOM SHALL BE SIZED TO ACCOMMODATE THE CLOTHES AND EQUIPMENT OF THE WORK CREW (MINIMUM OF 3'X3') THE SHOWER AND AIR LOCK ROOMS SHALL BE MINIMUM OF 3'X3'.
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- LOCATION OF EQUIPMENT DECONTAMINATION UNIT
- (T) CONTRACTOR TO SECURE DOOR AND CONTROL ACCESS
- (NE) LOCATION OF NEGATIVE AIR EXHAUST

Environmental Notes

WARNING: ASBESTOS CONTAINING BUILDING MATERIALS ARE OR MAY BE PRESENT IN THIS BUILDING. NO PERSON MAY DISTURB ASBESTOS CONTAINING MATERIALS UNLESS THAT PERSON IS A LICENSED ASBESTOS ABATEMENT WORKER OR CONDUCTS SUCH WORK IN ACCORDANCE WITH PROJECT SPECIFICATION(S) CONTAINING IN THE PROJECT DOCUMENTS AND IN COMPLIANCE WITH THE APPLICABLE REGULATIONS.

LEAD-BASED PAINT MAY BE PRESENT WITHIN THE BUILDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO TAKE APPROPRIATE SAFETY MEASURES IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL RULES AND REGULATIONS INCLUDING OSHA (1962.62) COMPLIANCE, WASTE CHARACTERIZATION AND WASTE DISPOSAL. ALL WORK WITH SURFACES CONTAINING LEAD-BASED PAINT SHALL BE DONE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

Professional Stamp

AIS ASSETS, INFORMATION & SERVICES

PUBLIC BUILDING COMMISSION OF CHICAGO

1819 W. PERSHING RENOVATION

1819 W PERSHING ROAD
CHICAGO, ILLINOIS 60609

PUBLIC BUILDING COMMISSION OF CHICAGO
CITY OF CHICAGO, MAYOR LORI LIGHTFOOT

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Issuance

Mark	Description	Date
01	ISSUE FOR 50% CD	06/13/22
02	ISSUE FOR 90% CD	08/08/22
03	ISSUE FOR 100% CD	11/23/22
	ADDENDUM 4	12/16/22

PBC Project Name: 1819 W. Pershing Renovation

PBC Contract No:

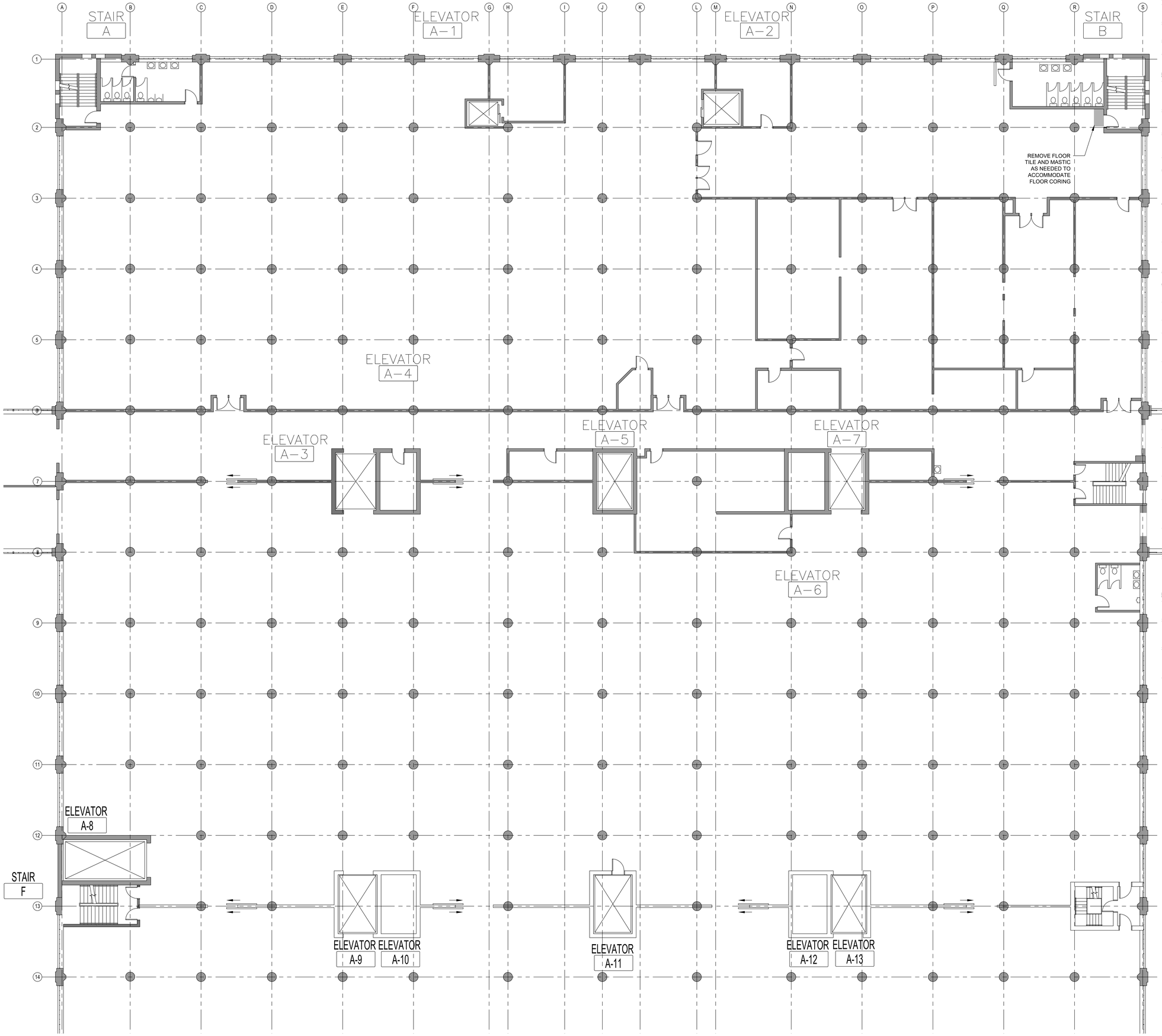
Project No: #04026

Title

ASBESTOS ABATEMENT PLAN - FIRST FLOOR

Sheet

ENV-101



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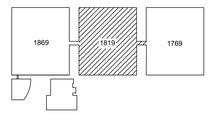

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Professional Stamp

1819 W. PERSHING RENOVATION

1819 W PERSHING ROAD
CHICAGO, ILLINOIS 60609

PUBLIC BUILDING COMMISSION OF CHICAGO
CITY OF CHICAGO, MAYOR LORI LIGHTFOOT

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	ADDENDUM 4	12/16/22

PBC Project Name: 1819 W. Pershing Renovation

PBC Contract No:

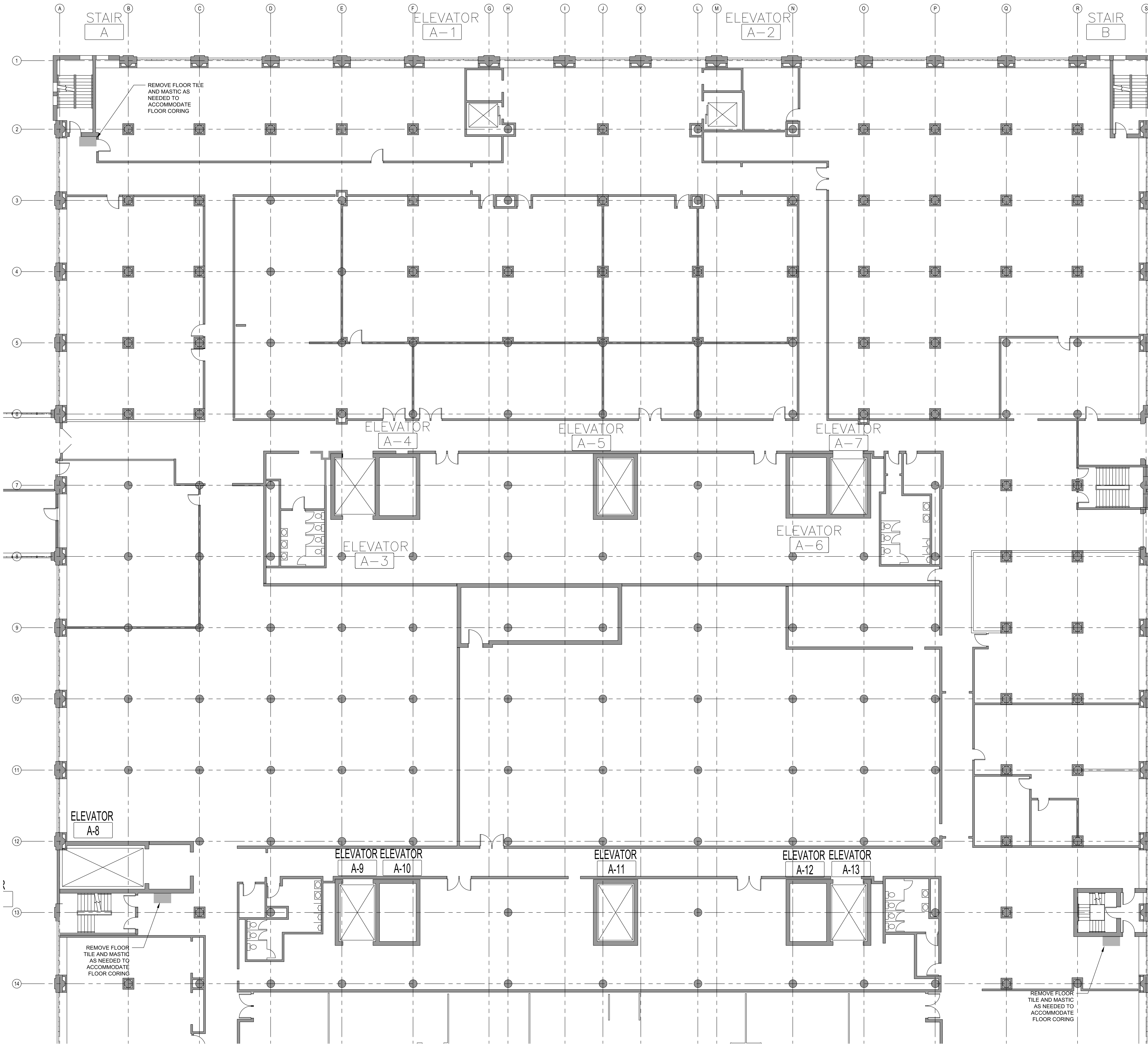
Project No: #04026

Title

ASBESTOS ABATEMENT PLAN - SECOND FLOOR

Sheet

ENV-102



1 ASBESTOS ABATEMENT PLAN
4TH FLOOR PLAN
3/8" = 1'-0"

ENVIRONMENTAL ABATEMENT SCOPE OF WORK

1. ASBESTOS ABATEMENT: REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING FLOOR TILE AND FLOOR TILE MASTIC INSTALLED ON CONCRETE SUBSTRATE AS NEEDED TO ACCOMMODATE FLOOR CORING.
2. ASBESTOS ABATEMENT: REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING FLOOR TILE, FLOOR TILE MASTIC, AND WOOD SUB-FLOORING AS NEEDED TO ACCOMMODATE FLOOR CORING.
3. ASBESTOS ABATEMENT: REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING CEMENT-TYPE FLOORING MATERIAL AS NEEDED TO ACCOMMODATE FLOOR CORING.
4. ALL WORK SHALL BE CONDUCTED PER SPECIFICATION 028200 AND ALL APPLICABLE EPA, IDPH, AND OSHA RULES AND REGULATIONS.

ENVIRONMENTAL ABATEMENT GENERAL NOTES

1. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES IN THE FIELD BEFORE BIDDING. ANY QUESTIONS ABOUT THE SCOPE OR CLARIFICATIONS SHALL BE OBTAINED FROM THE PROJECT DESIGNER PRIOR TO BIDDING. ANY INTERPRETATIONS OF THE DESIGN DOCUMENTS SHALL ONLY BE MADE BY THE PROJECT DESIGNER.
2. ABATEMENT CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND FIELD CONDITIONS. ALL DIMENSIONS AND DETAILS ARE TAKEN FROM RECORD DRAWINGS AND ARE NOT GUARANTEED TO BE ACCURATE. ASBESTOS ABATEMENT CONTRACTOR SHALL FIELD VERIFY THE ACTUAL FIELD DIMENSIONS AND LOCATIONS.
3. ABATEMENT CONTRACTOR TO ERECT CONSTRUCTION SEPARATION BARRIERS IN A MANNER THAT WILL CONFINE DECONTAMINATION UNITS, ASSOCIATED WATER AND ELECTRICAL HOOK UPS, WATER FILTRATION, WATER DISCHARGE, NEGATIVE AIR EXHAUST, AND ALL WORK AREA OPERATIONS, ETC.
4. ABATEMENT CONTRACTOR IS RESPONSIBLE FOR THE LOCKOUT AND TAGOUT OF ANY ASSOCIATED EQUIPMENT PRIOR TO STARTING ABATEMENT.
5. THE ENVIRONMENTAL SCOPE IS AN INTEGRAL PART OF THE ARCHITECT OF RECORD (AOR) TOTAL SPECIFICATION PACKAGE; THEREFORE, IT SHALL BE USED IN CONJUNCTION WITH THE TOTAL SPECIFICATION PACKAGE. THE TERM "REFER TO ARCHITECTS SCOPE OF WORK DRAWINGS" IS MEANT TO BE AN ADDITION TO WHAT THE ARCHITECT HAS INDICATED ON DRAWINGS AND BY NO MEANS LIMITS THE WORK TO WHAT IS SHOWN ON THE ARCHITECT'S DRAWINGS.
6. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR ALL SECURITY TO THE WORK AREA(S) DURING THE ABATEMENT PROJECT. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES OR THEFTS TO PROPERTY IN THE WORK AREA(S), UNTIL THE AREA(S) ARE RETURNED TO THE PROPERTY OWNER. THE ABATEMENT CONTRACTOR SHALL REPAIR AND/OR REPLACE DAMAGED OR STOLEN PROPERTY TO THE SATISFACTION OF, AND AT NO ADDITIONAL COST TO THE USING AGENCY.
7. WASTE OUT STAGING SHALL BE COORDINATED WITH ALL TRADES COMPLETING WORK. DUMPSTERS FOR ASBESTOS WASTE SHALL 6-SIDED, FULLY ENCLOSED AND LOCKABLE. ASBESTOS WASTE STORAGE AREAS WITHIN THE BUILDING SHALL NOT BE PERMITTED. DUMPSTER LOCATIONS SHALL BE COORDINATED WITH USING AGENCY PRIOR TO MOBILIZATION.
8. OUTDOOR WASTE DUMPSTER SHALL BE LOCATED PER OWNER OR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO THE START OF ABATEMENT.
9. THE ASBESTOS ABATEMENT CONTRACTOR SHALL PROVIDE A HARD COPY OF ALL WASTE MANIFESTS WITHIN 30 DAYS OF THE WASTE BEING HAULED OFF-SITE. WASTES SHALL TRANSPORTED DIRECTLY TO LANDFILL.
10. HEPA FILTERED NEGATIVE AIR SHALL BE MAINTAINED ON A CONTINUOUS 24-HOUR BASIS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING ADEQUATE PERSONNEL AND BACKUP EQUIPMENT TO MAINTAIN OPERATION.
11. ALL NEGATIVE AIR EXHAUSTS SHALL BE MANIFOLDED AT POINT OF EXIT FROM THE BUILDING.
12. THE ABATEMENT PLAN KEY NOTES INDICATE APPROXIMATE LOCATIONS OF EXISTING MATERIALS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATIONS OF EXISTING MATERIALS SCHEDULED FOR REMOVAL. WHEN AN ABATEMENT LEGEND INDICATES REMOVAL IN A ROOM OR LOCATION ALL THE MATERIAL SCHEDULED FOR REMOVAL WITHIN THE ROOM OR LOCATION SHALL BE REMOVED.
13. ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE BUILDING CODES AND ALL OTHER CODES THAT HAVE AUTHORITY OVER THIS PROJECT. ABATEMENT CONTRACTOR SHALL SECURE REQUIRED PERMITS AS NECESSARY. ABATEMENT CONTRACTOR SHALL PROVIDE ALL NECESSARY SAFEGUARDS, BARRIERS, TEMPORARY POWER, LIGHTING, FIRE PROTECTION, ETC. AS REQUIRED DURING LEAD ABATEMENT/SELECTIVE DEMOLITION, MOLD REMEDIATION, AND ASBESTOS ABATEMENT.
14. THE ABATEMENT CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE ENVIRONMENTAL ABATEMENT WORK. ABATEMENT CONTRACTOR TO FOLLOW BEST PRACTICES AND/OR INDUSTRY STANDARDS.
15. THE ABATEMENT CONTRACTOR SHALL USE ADEQUATE PRECAUTIONS FOR SAFETY OF, AND SHALL PROVIDE REASONABLE PROTECTION TO PREVENT DAMAGE, INJURY, OR LOSS TO EXISTING CONDITIONS TO REMAIN.
16. THE ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE SITE TO BECOME FAMILIAR WITH AND VERIFY THE EXISTING CONDITIONS. THE ASBESTOS ABATEMENT DRAWINGS SHALL SERVE TO AID THE CONTRACTOR IN THEIR EVALUATION OF THE EXTENT OF ABATEMENT; BUT SHALL NOT BE HELD TO BE ALL INCLUSIVE.
17. THE ABATEMENT CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL ASBESTOS ABATEMENT REQUIRED AS NECESSARY TO FULFILL THE PURPOSE AND INTENT OF THE FINISHED WORK, WHETHER OR NOT IT IS SPECIFICALLY SHOWN OR NOTED IN THESE DOCUMENTS.
18. THE ASBESTOS ABATEMENT CONTRACTOR SHALL FIELD INSPECT ALL ABATEMENT WORK PRIOR TO ITS REMOVAL, TO INSURE SUCH REMOVAL DOES NOT IMPAIR THE STRUCTURAL INTEGRITY OF THE EXISTING BUILDING. IF THE INSPECTION INDICATES THAT THE STRUCTURAL INTEGRITY MAY BE IMPAIRED, NOTIFY THE ENVIRONMENTAL CONSULTANT IMMEDIATELY.
19. THE ABATEMENT CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL REQUIRED MEANS OF EGRESS CONTINUOUSLY DURING ABATEMENT. IF ANY MEANS OF EGRESS WILL BE AFFECTED BY THE ABATEMENT WORK THE ABATEMENT CONTRACTOR SHALL SUBMIT A CONSTRUCTION PLAN TO DEMONSTRATE THAT ALL MEANS OF EGRESS WILL BE MAINTAINED CONTINUOUSLY DURING ABATEMENT.
20. FIELD DIMENSIONS MAY NOT MATCH DIMENSIONS AS SHOWN ON PLANS. ABATEMENT CONTRACTOR SHALL NOT RELY UPON DIMENSIONS SCALED FROM PLANS. ABATEMENT CONTRACTOR TO CONFIRM ANY AND ALL DIMENSIONS IN REGARD TO ALL WORK. DISCREPANCIES ARE TO BE IMMEDIATELY BROUGHT TO THE ENVIRONMENTAL CONSULTANT ATTENTION.

ENVIRONMENTAL ABATEMENT ADDITIONAL DESING DETAILS

1. ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH THE GENERAL CONTRACTOR AND/OR ASSOCIATED TRADES TO CONFIRM THE EXTENT AND LOCATION OF ASBESTOS FLOORING REMOVAL.
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3. THE ABATEMENT CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL LAYERS OF FLOOR TILE AND MASTIC. THE REMOVAL OF FLOOR TILE AND MASTIC SHALL INCLUDE ANY CARPET, UNDERLAYMENT AND ANY ADDITIONAL LAYERS OF FLOOR TILE AND MASTIC, BUT NOT THE CONCRETE FLOORING, OR OTHER PERMANENT SUB FLOORING. MASTICS ARE INSTALLED JOINTLY.
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ENVIRONMENTAL ABATEMENT KEYNOTES

- REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING FLOOR TILE AND FLOOR TILE MASTIC INSTALLED ON CONCRETE SUBSTRATE
- REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING FLOOR TILE, FLOOR TILE MASTIC, AND WOOD SUBSTRATE
- REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING CEMENT-TYPE FLOORING MATERIAL
- LOCATION OF WORKER DECONTAMINATION UNIT
- LOCATION OF EQUIPMENT DECONTAMINATION UNIT
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Environmental Notes

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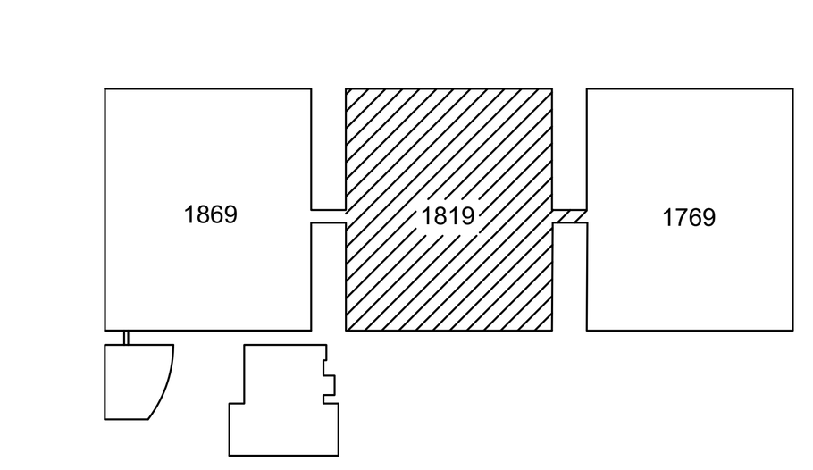

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PBC Project Name: 1819 W. Pershing Renovation

PBC Contract No:

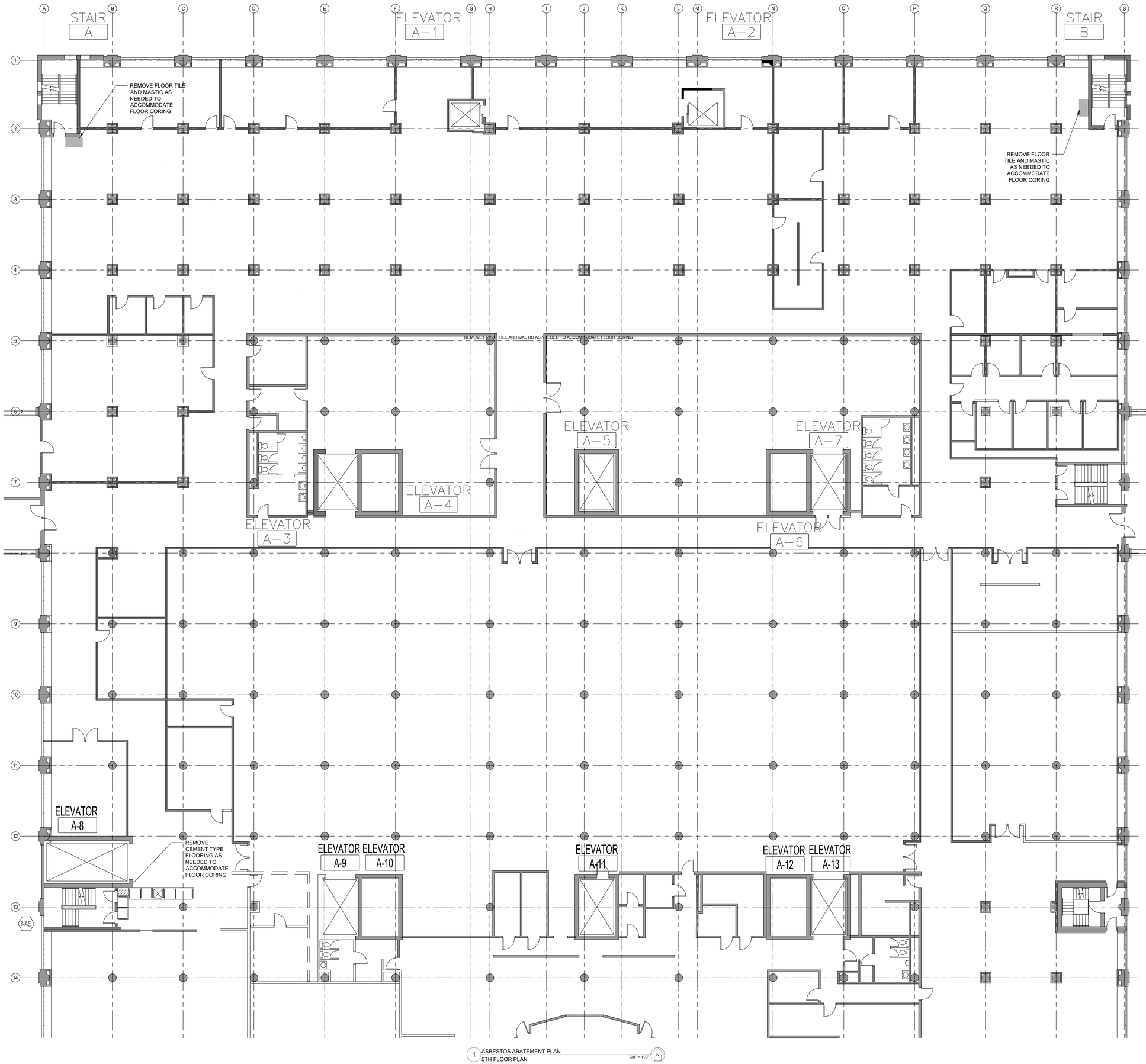
Project No: #04026

Title

ASBESTOS ABATEMENT PLAN - FOURTH FLOOR

Sheet

ENV-103



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Professional Stamp

AIS ASSETS, INFORMATION & SERVICES

EXTERIOR DESIGN COMMISSION

1819 W. PERSHING RENOVATION

1819 W PERSHING ROAD
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PUBLIC BUILDING COMMISSION OF CHICAGO
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PBC Project Name: 1819 W. Pershing Renovation

PBC Contract No:

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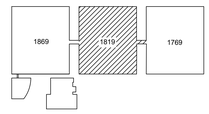
Title

ASBESTOS ABATEMENT PLAN - FIFTH FLOOR



Sheet

ENV-104