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DELAWARE STATE POLICE FIRING RANGE
HVAC UPGRADE & ROOF REPLACEMENT
OMB/DFM CONTRACT # MJ1002000012 & MJ1002000008

ADDENDUM #2

GENERAL:

A. Key dates

1. Bid Due –2:30 pm on Wednesday, November 28, 2018 in the reception area of the Facilities Management Office in the Thomas Collins Building, 540 S. DuPont Highway, Suite 1 (Third Floor), Dover, DE 19901.
2. Bid Opening – Wednesday, November 28, 2018 at 2:30 p.m. local time.
3. Prequalification submission deadline: 4:30 PM Wednesday, October 31, 2018.
4. Questions and substitution submission deadline: 4:30 PM Wednesday, November 15, 2018.
5. ERU substitution submission deadline: 4:30 PM Wednesday, November 15, 2018.
6. On Friday October 26, 2018 Addendum #3 will be distributed which will include drawing & specification updates, and updated Bid Form with Roofing alternates.

B. Documents

1. Attached is the Lead Dust Remediation and Mechanical Demolition Package (57 pages).

C. Walk thru meeting

1. A walk through will take place on Monday October 22, 2018 from 8:00 a.m. to 10:00 a.m. Contractors are to meet in the front lobby.

D. Addendum #2

1. Addendum #2 Summary (this document) (1 page)
2. Lead Dust Remediation and Mechanical Demolition Package (57 pages)

Summarized By: DEDC, LLC
John R. Farina, P.E.

Date: October 19, 2018

RECEIVED
OCT 17 2018
FACILITIES MANAGEMENT

**SPECIFICATIONS FOR
LEAD DUST REMEDIATION
AND MECHANICAL DEMOLITION
DSP INDOOR FIRING RANGE
Smyrna, Delaware**

**DATED: 10-16-18
Harvard Project Number: 20111
State Project MJ1002000012 & MJ1002000008**

PREPARED FOR: John Dunham
*State of Delaware Division of Facilities Management
Thomas Collins Building, Suite 1
540 S. Dupont Highway
Dover, Delaware 19901*

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

APPROVED
Facilities Management
Doyle Tiller 10/17/2018
Doyle Tiller Date

HARVARD
Environmental, Inc.

DELAWARE DEPARTMENT OF SAFETY AND HOMELAND SECURITY
DELAWARE STATE POLICE INDOOR FIRING RANGE, SMYRNA, DE
LEAD DUST REMEDIATION AND MECHANICAL DEMOLITION

DATED: OCTOBER 16TH, 2018

SPECIFICATION: 20111

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**SPECIFICATIONS FOR
LEAD DUST REMEDIATION
AND MECHANICAL DEMOLITION
DSP INDOOR FIRING RANGE**
Smyrna, Delaware

DATED: 10-16-18
Harvard Project Number: 20111
State Project #'s
MJ1002000012
MJ1002000008

Project Designer: *Mike Sanders* Date: 10/16/18

Lead Project Designer# 107160 Printed Name: Mike Sanders

ENGINEERS STATEMENT

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

Professional Engineer Signature: *Joseph Jakubowski* Date: 10/16/18
Printed Name: JOSEPH JAKUBOWSKI PE LEADAR



APPROVALS

This is to certify that the State of Delaware Facilities Management has reviewed this specification and approves its use for the project listed above.

Signature *Doyle Tiller* Date: 10/17/2018
Printed Name: Doyle Tiller
State of Delaware, Division of Facilities Management

APPROVED
Facilities Management
Doyle Tiller 10/17/2018
Doyle Tiller Date

CERTIFICATES & LICENSES

LICENSE NO. 1993108790	STATE OF DELAWARE	VALID
POST CONSPICUOUSLY	DIVISION OF REVENUE	01/01/18 - 12/31/20 NOT TRANSFERABLE
DLN: 17 62506 41	BUSINESS CODE 099 GROUP CODE 007	LICENSED ACTIVITY PROFESSIONAL AND/OR PRSL SRVCS-UNCLASSIFIED PROFESSIONAL AND/OR PERSONAL SERVICES
DATE ISSUED: 11/29/17	**VALIDATED**	
LICENSE FEE: \$ 225.00	BUSINESS LICENSE	2020
MAILING ADDRESS	BUSINESS LOCATION	
HARVARD ENVIRONMENTAL INC 760 PULASKI HWY BEAR DE 19701-5200		HARVARD ENVIRONMENTAL INC 760 PULASKI HWY BEAR DE 19701-5200
<small>IS HEREBY LICENSED TO PRACTICE, CONDUCT OR ENGAGE IN THE OCCUPATION OR BUSINESS ACTIVITY INDICATED ABOVE IN ACCORDANCE WITH THE LICENSE APPLICATION DULY FILED PURSUANT TO TITLE 35, DEL. CODE.</small>		JENNIFER R. HUDSON <small>DIRECTOR OF REVENUE</small>



DELAWARE HEALTH AND SOCIAL SERVICES
DIVISION OF PUBLIC HEALTH
OFFICE OF LEAD POISONING PREVENTION

**Certificate to Conduct Lead-Based Paint Work
Activities**

Certificate #: CF-17-0021R Effective Date: 06/16/2017 Expiration Date: 06/16/2019

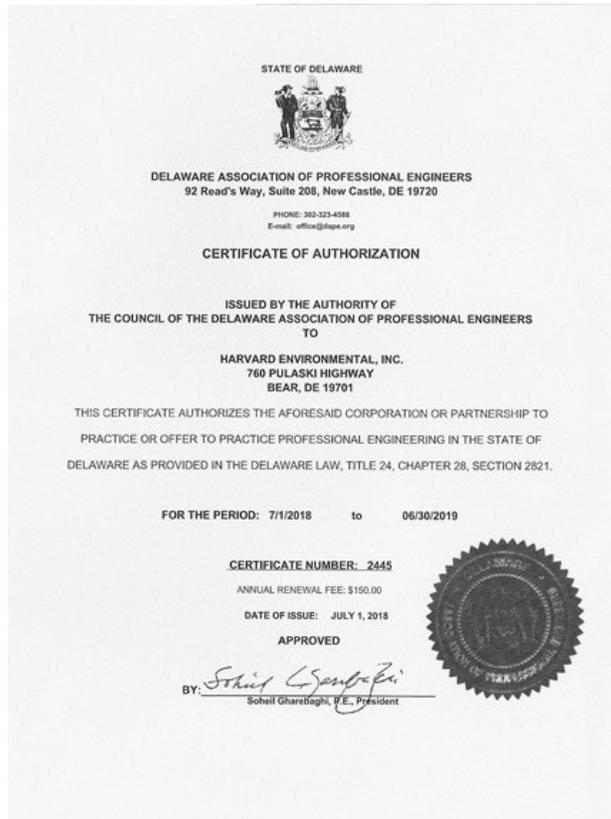
This Certificate is issued in accordance with and subject to the provisions of the State of Delaware Regulations Governing Lead-Based Paint Hazards, adopted July 15, 1998, by the Secretary of Delaware Health & Social Services, under the authority of 16 DE Code, Chapter 1, §122(3)(f).

~ CERTIFICATE HOLDER ~

Harvard Environmental, Inc.
Address: 760 Pulaski Highway
Bear, Delaware 19701



Karyl T. Rattay, MD, MS, FAAP, FACPM
Director, Division of Public Health
Delaware Health & Social Services



AEROSOL MONITORING & ANALYSIS, INC.

This is to certify that
MIKE SANDERS
23 VENUTI DRIVE
ASTON, PA 19014

*has met the attendance requirements and successfully completed
the course entitled*

1-DAY LEAD PROJECT DESIGNER REFRESHER

This Training Meets the Certification Requirements for DC, MD & VA

<u>10/05/2018</u> Course Date	<u>10/05/2018</u> Exam Date		
<u>10/5/2020</u> MD Expiration Date	<u>10/5/2021</u> VA Expiration Date	<u>10/5/2020</u> DC Expiration Date	DAVID TRUMAN Principal Instructor
<u>107160</u> Certification No.	<u>VA107160</u> VA Certification No.	<u>107160</u> DC Certification No.	E. Rush Barnett Course Director

DC Lead Training Provider Accreditation No. DC18-001-PD-R

1331 Ashton Road P.O.Box 646 Hanover, MD 21076 P: 410-684-3327 F: 410-684-3724
www.amatraining.com

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: (302) 761-8200

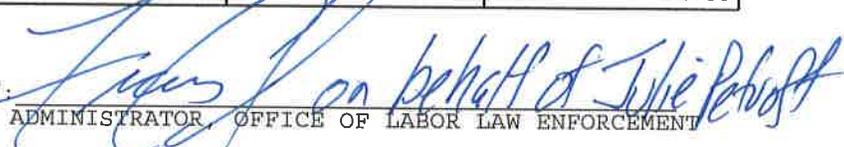
Mailing Address:
4425 North Market Street
3rd Floor
Wilmington, DE 19802

Located at:
4425 North Market Street
3rd Floor
Wilmington, DE 19802

PREVAILING WAGES FOR BUILDING CONSTRUCTION EFFECTIVE MARCH 15, 2018

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	23.35	28.76	41.85
BOILERMAKERS	69.90	35.46	52.14
BRICKLAYERS	53.89	53.89	53.89
CARPENTERS	54.81	54.81	43.57
CEMENT FINISHERS	73.74	51.37	22.64
ELECTRICAL LINE WORKERS	46.44	39.82	30.36
ELECTRICIANS	68.70	68.70	68.70
ELEVATOR CONSTRUCTORS	93.23	65.86	32.62
GLAZIERS	73.10	73.10	57.87
INSULATORS	56.53	56.53	56.53
IRON WORKERS	63.70	63.70	63.70
LABORERS	46.20	46.20	46.20
MILLWRIGHTS	71.60	71.60	57.70
PAINTERS	51.55	51.55	51.55
PILEDRIVERS	76.77	40.19	32.51
PLASTERERS	30.48	30.48	22.59
PLUMBERS/PIPEFITTERS/STEAMFITTERS	70.05	53.97	58.81
POWER EQUIPMENT OPERATORS	69.29	69.29	64.96
ROOFERS-COMPOSITION	24.52	24.20	22.10
ROOFERS-SHINGLE/SLATE/TILE	18.78	22.33	17.56
SHEET METAL WORKERS	68.53	68.53	68.53
SOFT FLOOR LAYERS	52.52	52.52	52.52
SPRINKLER FITTERS	59.49	59.49	59.49
TERRAZZO/MARBLE/TILE FNRS	61.93	61.93	48.52
TERRAZZO/MARBLE/TILE STRS	68.52	68.52	56.19
TRUCK DRIVERS	25.36	28.02	21.39

CERTIFIED: 08-28-2018

BY:  on behalf of Julie Perloff
ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE 3027618200

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: Delaware State Police Firing Range HVAC Upgrade, New Castle County

SECTION 01014 SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Project consists of the clean-up of lead dust from all surfaces within designated areas of The Delaware State Police Firing Range. Inclusive of the work will be the removal of mechanical return duct systems and building finishing components that are contaminated with lead dust.

The work is specific to the following Indoor Firing Range and roof top of the facility located at:

1. 391 Clark Farm Road, Smyrna, DE 19977

Owner:
State of Delaware

Technical Specifications for Lead Dust Clean up and Mechanical System Demolition, dated October 16th, 2018 prepared for the Project by:

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

- B. Any lead dust clean-up and return duct demolition activities inclusive of mobilizing equipment and preparatory work that is covered within this specification will not commence until a certified Project Monitor (the Owner's Representative from a Certified Professional Service Firm) is on site. The Project monitor shall remain on site at all times during the project.**
- C. The Work consists of
1. Removal of lead-contaminated:
 - a) Roof Top Return ductwork,
 - b) Interior Range Return ductwork,
 - c) Acoustical ceiling tiles and metal Ceiling Track Systems,
 2. Cleaning of all surfaces in accordance with Section 01727. Chemical solutions such as TSP (Tri-sodium phosphate) or equivalent should be used to achieve dust level clearances. a) The surfaces include painted concrete floors, b) metal deflectors plates at ground level and ceiling levels, c) surrounding roofing membranes in proximity to the rooftop return ducts , d)
 3. Packaging of waste for appropriate TCLP (Toxic Characteristic Leaching Procedure) sampling.
 4. Transportation and disposal of lead waste generated over the course of the project.
 5. Remediation Contract Work does not include reinstallation of heating, exhaust, ventilation or air conditioning.

6. Remediation Contract Work does not include temporary roof repair and re-roofing of existing openings following the removal of the downward return rooftop ducts / ceiling deck upward return ducts. This shall be the **responsibility of the General Contractor and its Roofing Subcontractor**.
7. Remediation Contract Work does not include reinstallation of ceiling grids and tiles.
8. Remediation Contract Work does not include removal of supply ductwork and air handlers.

D. The Remediation Work will be performed under a subcontract to the General Contract.

E. Specific items for the work are identified on the Contract Drawings #20111-1 and 20111-2

1.5 GENERAL INCLUSIONS

- A. Bid, performance, and payment bonding are required under the General Contract.
- B. All work shall conform to contract specifications and shall be performed in strict compliance with all applicable federal regulations. Regulatory compliance is the sole responsibility of the Contractor.
- C. **The Contractor shall possess a current Lead Based Paint Work Activities Certificate obtained through the State of Delaware Health and Social Services, Division of Public Health, and deploy workers and supervisors who have a complete understanding and awareness of the OSHA Lead in Construction Standard 1926.62**
- D. The Contractor shall obtain any and all permits which may be required to complete this project.
- E. The Contractor shall be responsible for notifying all external organizations which require notification; these notifications may include but are not limited to, EPA Regional Office, Governing State Bodies, Local Municipalities, Emergency Personnel, and Waste Disposal Site.
- F. Copies of all notifications, on their official forms, shall be provided to the Owner's Representative prior to project commencement. Any revisions required to the notifications are the sole responsibility of the Contractor. Copies shall be provided to the Owner's Representative immediately upon submittal.
- G. The Contractor shall be responsible for all damages incurred from project-related activities and/or personnel assigned to the project. This aspect of accountability includes interior and exterior damages.
- H. During the time which areas are considered regulated, all personnel entering the area to perform any type of support services shall adhere to the safety procedures and training requirements required for the entry.
- I. The work area and job site shall be restricted to designated contract personnel and authorized visitors. All visitors will require site authorization, safety health and environmental orientation, and clearance from the Owner or the Owner's Representative prior to entering the site.
- J. A copy of this Specification shall be in the possession of the Contractor's assigned Supervision at all times during the execution of this project.

1.4 EXAMINATION:

- A. Prior to commencement of work, examine areas in which work will be performed with the Specifications Designer. Prepare a listing of damage to structure, surfaces, equipment or of surrounding properties which could be misconstrued as damage resulting from the work.

Photograph or videotape existing conditions as necessary to document conditions. Submit to Specifications Designer prior to starting work.

1.5 POTENTIAL LEAD HAZARD:

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

1.6 PROJECT SCOPE SPECIFIC ISSUES AND COORDINATION

A. WORK SCHEDULES

- 1. All work associated with this project shall be from 7:00 AM to 3:30 PM. The anticipated scheduled start date is unknown at this time.
- 2. Working on the site beyond the hours indicated above will require written approval by the Owner or the Owner's Representative.

B. WORK SEQUENCE

- 1. The Work will be conducted under a single mobilization by the Contractor. Phasing of the work shall be performed consistent with the schedules provided below.
 - (1) Phase I
 - a. Mobilization
 - b. Electrical and Mechanical System identification, isolation
 - (2) Phase II
 - a. Fabrication of interior containment systems using poly sheeting and Negative Pressure Air Filtration Devices
 - (3) Phase III
 - a. Rooftop Mechanical Component (Return Ductwork) Removal using mechanical and hand tool removal methods
 - b. Seal off ends of ductwork prior to Disposal Using Poly sheeting and duct tape
 - c. Coordinate Roof Repairs and Making Weather Tight of Openings through GC and Roofer Subcontractor
 - d. Drop ceiling tile and tracking removal in selective containment area of the firing range
 - e. Mechanical Component (Return Ductwork and Grills) Removal using mechanical and hand tool removal methods. *Clean and Leave duct hangers for potential re-use by GC*
 - f. Lead Dust Decontamination from all vertical and horizontal surfaces inside selective containment area, inclusive of the ceiling metal deflector plate, the portion of the tracks for the running man target system, and the base deflector floor plate.
 - g. Visual Assessment and Lead Dust Clearance Sampling
 - (4) Phase V
 - a. Demobilization and transportation of all waste to landfill

C. EXISTING ELECTRICAL SYSTEMS

1. Electrical systems are currently active in the facility. Contractor shall be required to protect all equipment with GFCI.

D. EXISTING WATER FACILITIES

1. Cold water services to support the facility are currently active. Hot Water Heaters for personnel decon must be provided by the contractor.

E. LEAD DUST CONTAMINATION CONTROL MEASURES

1. Personnel shall utilize remote 3 stage decon shower.
2. Fabrication of the decon facilities shall be performed consistent with the Specification and industry standards.
3. Work under the contract shall include the complete removal and decontamination of the materials/ components identified within this section 01014 and on the drawing.
4. *Upon completion of within the area of work, a visual inspection shall be performed by the Owner's Representative, followed by lead dust wipe sampling and analysis from ledges and floors. **The current National Guard Bureau clearance criteria of of 200 $\mu\text{g}/\text{ft}^2$ shall be used for clearance achievement.***
5. ***A complete clearance set is estimated at 10 interior surfaces within the containment area and at least one surface within 10 feet of the entrance to the containment. Flame AAS (Atomic Absorption Spectroscopy) Method 846 3050B/700B will be used for analyses. Owner reserved the right to collect more samples within the containment and within 10 feet of the entryway to the containment than the estimated.***

1.6 STOP WORK:

- A. If the Owner presents a written or verbal stop work order or if stop work levels as set forth in the Contract Documents are exceeded immediately and automatically stop all work. Do not recommence work until authorized in writing by the Owner or Owner's representative.

1.7 CONTRACTOR USE OF PREMISES

- A. General: During the construction period the Contractor shall have limited use of the premises. The Contractor's use of the premises is limited only to the specific area of work.
- B. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
 1. Driveways, Walkways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 2. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place or accessible to unauthorized persons.
 3. Do not unreasonably encumber the site with materials or equipment.

C. Use of the Existing Buildings:

1. Keep areas free from accumulation of waste, rubbish or construction debris.
2. No smoking or tobacco products will be permitted within the building or on the building grounds.
3. Sanitary facilities are currently active. Contractor will be allowed the use of the facilities.

1.8 OCCUPANCY REQUIREMENTS

- A. Owner Occupancy: Portions of the building may be occupied during the construction period. Take all precautions necessary to protect the building and other individuals working on the premises during the construction period.

1.9 OTHER PROJECT CONSIDERATIONS

A. PERSONAL PROTECTIVE EQUIPMENT

1. Respiratory protection for lead activities shall be Half Face APR, at a minimum. Contractor shall upgrade to PAPR (Powered-air) accordingly to meet protection factor requirements described in the respiratory protection section 01556. *The contractor is responsible for providing breathing zone air monitoring to workers exposed to lead aerosols. Lead air monitoring will not be performed by the building owner.*
2. Contractor shall don Tyvek suits or equivalent materials during all phases of the project.
3. Contractor's personnel and Sub Contractors shall wear hard hats, safety toe work shoes, and safety glasses with side shields at all times while on site.
4. Contractor's personnel and Sub Contractors shall wear hard hats, safety toe work shoes, and safety glasses with side shields at all times while on site.
5. Safety glasses, including all components (frames, lenses, and side shields) shall conform to ANSI Standard Z87.1. Slip-on, flimsy plastic side shields are not permitted.
6. Leather gloves are required when doing work in which cuts and punctures may occur. During instances of handling knives and razors, composite gloves which incorporate cut resistant fibers, shall be worn opposite the cutting hand.
7. All Personal Protective Equipment shall be provided by the Contractor at no cost to the Owner or the Owner's Representative.
8. Non-Compliance with the site requirements regarding use of PPE shall warrant removal of personnel from the premises.

1.10 WASTE MANAGEMENT

- A. Details associated with management of waste are provided in Section 02067. The Contractor shall be expected to comply with all aspects of the specifications associated with lead waste management.
- B. *Specific lead clean-up waste generated can be segregated and containerized, labeled and stored within the structure if waste characterization testing is requested to be performed by the contractor. Otherwise the waste can be presumed as hazardous. The overall waste stream generated by the project includes the metal ductwork and ceiling components and may require TCLP lead sampling if a recycling facility requires waste characterization or if the metal waste components are scheduled to be disposed of at a construction and demolition waste landfill and that landfill requires the sampling results as well to show the waste to be non-hazardous. Owner's Representative will provide these sampling and analyses services as requested.***

PART 2 - PRODUCTS

- A. Chemicals that may be used for cleaning lead contaminated components and surfaces must be accompanied by application instructions and MSDS sheets.

PART 3 - SCHEDULE OF LEAD CONTAMINATED COMPONENTS:

LOCATION	WORK DESCRIPTIONS	COMPONENT/ STRUCTURE DESCRIPTIONS
ROOFTOP	REMOVAL AND DISPOSAL	ESTIMATED 160 LINEAR OF 46" ROUND DIAMETER DUCTWORK
ROOFTOP	REMOVAL AND DISPOSAL	ESTIMATED 32 LINEAR FEET TOOAL OF 60"X30" RECTANGLE DUCTWORK DROPS THROUGH THE ROOFTOP
ROOFTOP	HEPA VACUUM; CLEAN WITH TSP OR EQUIVALENT	ESTIMATED 1,000 SQUARE FEET OF HORIZONTAL SURFACE CLEANING INCLUSIVE BUT LIMITED TO SURROUNDING ROOF MEMBRANES AND PIPES
INDOOR RANGE BULLET TRAP AREA	REMOVAL AND DISPOSAL	ESTIMATED 850 SF OF CEILING TILES AND TRACKING SYSTEM
INDOOR RANGE BULLET TRAP AREA	REMOVAL AND DISPOSAL	ESTIMATED 120 LINEAR OF RECTANGLE DUCTWORK RANGING IN SIZE FROM 60"X30" DOWN TO 36"X12" INCLUSIVE OF LOUVERS, GRILLS AND DAMPERS
INDOOR RANGE BULLET TRAP AREA	HEPA VACUUM; CLEAN WITH TSP OR EQUIVALENT	ESTIMATED 2,000 SQUARE FEET OF SURFACE - CEILING DEFLECTOR PLATES; FLOOR BASE DEFLECTOR PLATES; DUCT HANGERS, RUNNING MAN TARGET SYSTEMS

END OF SECTION - 01014

DRAWINGS REDACTED

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SECTION 01044 COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to the following:
 1. General project coordination procedures.
 2. Conservation.
 3. Coordination Drawings.
 4. Administrative and supervisory personnel.
 5. Cleaning and protection

1.3 COORDINATION

- A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.
 1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
 3. Make provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 1. Preparation of schedules.
 2. Installation and removal of temporary facilities.
 3. Delivery and processing of submittals.
 4. Progress meetings.
 5. Project Close-out activities.

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL:

- A. Foreman: Provide a Foreman to directly supervise and direct no more than 10 lead workers. Each Foreman will act as the Competent Person as required by OSHA 29 CFR 1926.62 for the

workers the foreman is directing. The Foreman has oversight authority over the workers and reports to the General Superintendent. If there is 10 or fewer lead workers on the project the General Superintendent may fill the foreman's position.

- B. Experience and Training: The foreman should meet all the requirements as a Competent Person as required by OSHA 29 CFR 1926.62. They should have completed training in Lead Health and Safety. They must have experience with projects of similar type and size.

1.5 PRE-CONSTRUCTION CONFERENCE:

- A. An initial progress meeting, recognized as "Pre-Construction Conference" will be convened by the Designer prior to start of any work. Meet at project site, or as otherwise directed with General Superintendent, Owner, Designer, Project Monitor, and other entities concerned with lead work.
 - 1. Attendees: Authorized representatives of the Owner, Designer, and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
 - 2. 72 hours advance notice will be provided to all participants prior to convening Pre-construction Conference.
 - 3. This is an organizational meeting, to review responsibilities and personnel assignments, to locate regulated areas and temporary facilities including power, light, water etc.
 - 4. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing.
 - c. Designation of responsible personnel.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for processing Applications for Payment.
 - f. Distribution of Contract Documents.
 - g. Use of the premises.
 - h. Parking availability.
 - i. Office, work, and storage areas.
 - j. Equipment deliveries and priorities.
 - k. Safety procedures.
 - l. First aid.
 - m. Security.
 - n. Housekeeping.
 - o. Working hours.

1.6 PROGRESS MEETINGS:

- A. General: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, the Designer will hold general progress meetings as required. These meeting will be scheduled, where possible, at time of preparation of payment request.
- B. Attendees: In addition to representatives of the Owner and Designer, the Contractor, each subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the work. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting.

- C. Agenda: Be prepared to discuss the following items at the progress meetings. Review other items of significance that could affect progress.
1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
 2. Review the present and future needs of each entity present, including the following:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Deliveries.
 - e. Access.
 - f. Site utilization.
 - g. Temporary facilities and services.
 - h. Hours of work.
 - i. Hazards and risks.
 - j. Housekeeping.
 - k. Quality and work standards.
 - l. Change Orders.
 - m. Documentation of information for payment requests.

1.7 DAILY LOG:

- A. Daily Log: Maintain a daily log documenting the dates and time of but not limited to, the following items:
1. Meetings; purpose, attendees, brief discussion and significant decisions.
 2. Visitations; authorized and unauthorized
 3. Log of those entering and leaving Work Area including personnel, by name.
 4. Accidents
 5. Special or unusual events, i.e. barrier breaching, equipment failures, accidents
 6. Documentation of Contractor's completion of the following:
 - a. Inspection of Work Area preparation prior to start of removal and daily thereafter.
 - b. Removal of any sheet plastic barriers
 - c. Contractor's inspections prior to demobilization operations.
 - d. Removal of waste materials from Work Area
 - e. Decontamination of equipment (list items)
 7. List of subcontractors at the site.
 8. Approximate count of personnel at the site.
 9. Stoppages, delays, shortages, losses.
 10. Emergency procedures.
 11. Orders and requests of governing authorities.
 12. Substantial Completions authorized.
- B. Submit copies of this log at final closeout of project as a project close out submittal.

1.8 SPECIAL REPORTS:

- A. General: Except as otherwise indicated, submit special reports directly to Owner within one day of occurrence requiring special report, with copy to Designer and others affected by occurrence.

- B. Reporting Unusual Events: When an event of unusual and significant nature occurs at site, within 24 hours prepare and submit a written special report to the Designer listing chain of events, persons participating, and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner in advance at earliest possible date.
- C. Reporting Accidents: Prepare and submit written reports of significant accidents, at site and anywhere else work is in progress. Reports must be submitted to the Designer within 24 hours after the accident occurs. Record and document data and actions; comply with industry standards. For this purpose, a significant accident is defined to include events where personal injury is sustained, or property loss of substance is sustained, where the event posed a significant threat of loss or personal injury, or where an OSHA 200 Log is required. A copy of an OSHA 200 Log may be submitted for this purpose.
- D. Report Discovered Conditions: When an unusual condition of the building is discovered during the work (e.g. leaks, corrosion) prepare and submit a written special report to the Designer indicating condition discovered.

1.9 CONTINGENCY PLAN:

- A. Contingency Plan: Prepare a contingency plan for emergencies including fire, accident, power failure, or any other event that may require modification or abridgement of decontamination or Work Area isolation procedures. Include in plan specific procedures for decontamination or Work Area isolation. Note that nothing in this specification should impede safe exiting or providing of adequate medical attention in the event of an emergency.
- B. Post: At entrance of Work Area. Telephone numbers and locations of emergency services including but not limited to fire, ambulance, doctor, hospital, police, power company, telephone company.

1.10 NOTIFICATIONS

- A. Notify other entities at the job site of the nature of the lead activities, location of lead contaminated components, requirements relative to lead set forth in these specifications and applicable regulations.
- B. Notifications of Emergency: Any individual at the job site may notify emergency service agencies if necessary without effect on this contract or the Contract Sum.

1.11 SUBMITTALS

- A. Before the Start of Work: Submit the following to the Designer. No work shall begin until these submittals are returned with Designer's stamp indicating that the submittal has been received.
 - 1. Contingency Plans: for emergency actions.
 - 2. Telephone Numbers: and location of emergency services.
 - 3. Notifications: sent to other entities at the work site.
 - 4. Notifications: sent to emergency service agencies.
 - 5. Staff Names: submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.
- B. Post copies of the list in the project meeting room, the temporary field office, and each temporary telephone.

HVAC UPGRADES & ROOF REPLACEMENT
OMB/DFM CONTRACT NUMBERS
MJ1002000012 & MJ1002000008

DELAWARE STATE POLICE FIRING RANGE
OCTOBER 2018

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01044

SECTION 01093 REFERENCED STANDARDS AND DEFINITIONS - LEAD

PART 4 - GENERAL:

4.1 RELATED DOCUMENTS

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

4.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Indicated: The term indicated refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference.
- C. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Designer, requested by the Designer, and similar phrases.
- D. Approved: The term approved, when used in conjunction with the Designer's action on the Contractor's submittals, applications, and requests, is limited to the Designer's duties and responsibilities as stated in the Conditions of the Contract.
- E. Regulations: The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. Furnish: The term furnish means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. Install: The term install describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. Provide: The term provide means to furnish and install, complete and ready for the intended use.
- I. Installer: An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 - 1. The term experienced, when used with the term Installer, means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
- B. Trades: Using terms such as carpentry does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to trades persons of the corresponding generic name.

- C. Assigning Specialists: Specialists are recognized experts in operations where required by the specifications. Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
- D. Project Site: is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.
- E. Testing Agencies: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- F. Designer: The "Designer" indicated in the Lead specifications Sections is the third party Owner's Representative contracted to represent the Owner during construction and until final payment is due. This entity is Harvard Environmental, Inc. The Designer will advise and consult with the Owner on issues pertaining to the Lead specification Sections. The Owner's instructions to the Contractor will be forwarded through the Designer.
- G. Project Monitor: This is the entity as described in the Lead specifications Sections as the "Project Representative" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." The Project Monitor in the "Lead" specifications Sections is a full time representative of the Owner at the job site.
 - 1. The Project Monitor has the authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgment of the Project Monitor or the Designer, the Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.
- H. Project Manual: A bound manual and/or electronically available record consisting of the General Conditions, the Supplementary Conditions, any Special Conditions and the specification Sections. General and Supplementary Conditions are downloadable at the State of Delaware Web Site. These records apply to the work.
- I. Substantial Completion: The work of this contract is substantially complete when clearance criteria set forth in the Contract Documents are met and the Work Area shall be provided to other parties for modification of building components.

4.2 DEFINITIONS RELATIVE TO LEAD ACTIVITIES:

- A. Accreditation: A formal recognition that an organization (e.g. laboratory) is competent to carry out specific tasks or type of tests.
- B. Accredited laboratory: A laboratory that has been evaluated and given approval to perform a specified measurement or task (such as the National Lead Laboratory Accreditation Program), usually for a specific property or analyze for a specified period of time.
- C. Accredited Training Provider: means a training provider that meets the standards established by EPA to train risk assessors, inspectors, supervisors, and workers.

- D. Blank: A non-exposed sample of the medium used for testing, such as a wipe or filter, which is analyzed like other samples to determine whether (1) samples are contaminated with lead before samples are collected (e.g., at the factory, or at the testing site), (2) the samples are contaminated after sample collection (e.g., during transportation to the laboratory or in the laboratory).
- E. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches around the nose and mouth of the face.
- F. Ceiling Concentration: The concentration of an airborne substance that shall not be exceeded.
- G. Certified Industrial Hygienist (C.I.H.): An industrial hygienist certified by the American Board of Industrial Hygiene.
- H. CFR - The Code of Federal Regulations: The basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.
- I. Common Area: A room or area that is accessible to all tenants in a project (e.g., hallway, boiler room). Generally, any area that is not kept locked.
- J. Competent Person: An agent of the Contractor who is a Competent Person as defined by OSHA in 29 CFR 1926.62. This person must be capable of identifying existing and predictable lead hazards in the surroundings or working conditions and who has authorization by the Contractor to take prompt corrective measures to eliminate them.
- K. Detection Limit: The minimum of a component that a method can reliably measure.
- L. Exposure Monitoring: The personal air monitoring of an employee's breathing zone to determine the amount of contaminant (e.g. lead) to which he/she is exposed.
- M. Federal Register: A document published daily by the Federal government that contains either proposed or final regulations.
- N. Hazardous Waste: As defined in RCRA the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:
 - 1. Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
 - 2. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.
 - 3. As defined in the regulations, a solid waste is hazardous if it meets one of four conditions:
 - a. Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24).
 - b. Has been listed as hazardous (40 CFR Section 261.31 through 261.33).
 - c. Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste).
 - d. Is not excluded from regulation as a hazardous waste.
- O. HEPA - High Efficiency Particulate Air: A filter capable of filtering out particles of 0.3 microns or greater from a body of air at 99.97% efficiency or greater.

- P. High Phosphate Detergent: Detergent which contains at least 5% tri-sodium phosphate (TSP).
- Q. Landfill: A disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.
- R. µg - Micrograms: The prefix "micro-" means "1/1,000,000 of" (one millionth of). A microgram is 1/1,000,000 of a gram and 1/1,000 of a milligram. A microgram is equal to about 35/1,000,000,000 (thirty-five billionths) of an ounce. 28,400,000 µg are equal to 1 ounce.
- S. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.
- T. Personal Monitoring: Sampling of the lead dust concentrations within the breathing zone of an employee.
- U. Personal Samples (for sampling lead dust): Air samples collected from within the breathing zone of a worker, but outside the respirator. The samples are collected with a personal sampling pump, pulling 1 to 4 liters/minute of air.
- V. Protection Factor: The ratio of the ambient concentration of an airborne substance to the concentration of the substance inside the respirator at the breathing zone of the wearer. The protection factor is a measure of the degree of protection provided by a respirator to the wearer.
- W. Respirator: A device designed to protect the wearer from the inhalation of harmful atmospheres.
- X. Solid Waste: As defined in RCRA the term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under the Clean Water Act, or special nuclear or byproduct material as defined by the Atomic Energy Act of 1954.
- Y. TCLP (Toxicity Characteristic Leaching Procedure): A test, called the extraction procedure that is designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management. It is a characteristic of hazardous waste.
- Z. Time Weighted Average (TWA): The average concentration of a contaminant in air during a specific time period.
- AA. TSP: Acronym for tri-sodium phosphate.
- BB. ULPA - Ultra Low Particulate Air: Means a filter capable of filtering out particles of 0.13 microns or greater from a body of air at 99.9995% efficiency or greater.
- CC. Wet Cleaning (Wet Detergent Wash): The process of eliminating lead dust contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with a solution of water and trisodium phosphate (TSP) or appropriate substitute and afterwards thoroughly decontaminated or disposed of as lead contaminated waste.

- DD. Work Area: The area where lead related work is performed which is defined and/or isolated to prevent the spread of lead dust, or debris, and entry by unauthorized personnel.
- EE. Work Practice: A procedure followed by workers that is intended to minimize exposure to the worker and the environment.

4.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's 16-Division format and MASTERFORMAT numbering system.
- B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 - 1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
 - 2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
 - 3. The words "shall be" are implied wherever a colon (:) is used within a sentence or phrase.

4.4 INDUSTRY STANDARDS

- A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.
 - 1. Conflicting Requirements: Where compliance with 2 or more standards is specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different but apparently equal and uncertainties to the Designer for a decision before proceeding.
 - 2. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Designer for a decision before proceeding.
- C. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
- D. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.
- E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but not assured, to be accurate and up-to-date as of date of the Contract Documents.

A2LA American Association for Laboratory Accreditation
656 Quince Orchard Road #300
Gaithersburg, MD 20878 (301) 670-1377

AIA The American Institute of Architects
1735 New York Ave., NW
Washington, DC 20006 (202) 626-7300

AIHA American Industrial Hygiene Assoc.
2700 Prosperity Avenue, Suite 250
Fairfax, VA 22031-4307 (703) 849-8888

ANSI American National Standards Institute
11 West 42nd St., 13th Floor
New York, NY 10036 (212) 642-4900

ASTM American Society for Testing and Materials
1916 Race St.
Philadelphia, PA 19103-1187 (215) 299-5400

GA Gypsum Association
810 First St., NE, Suite 510
Washington, DC 20002 (202) 289-5440

IESNA Illuminating Engineering Society of North America
345 E. 47th St.
New York, NY 10017 (212) 705-7926

ML/SFA Metal Lath/Steel Framing Assoc.
(A Division of the National Association
of Architectural Metal Manufacturers)
600 S. Federal St., Suite 400
Chicago, IL 60605 (312) 922-6222

NEC National Electrical Code (from NFPA)

NEMA National Electrical Manufacturers Assoc.
2101 L St., NW, Suite 300
Washington, DC 20037

(202) 457-8400

NFPA National Fire Protection Assoc.
One Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101

(800) 344-3555
(617) 770-3000

NSF National Sanitation Foundation
3475 Plymouth Rd.
P.O. Box 130140
Ann Arbor, MI 48113-0140

(800) 223-2301
(313) 769-8010

PDCA Painting and Decorating Contractors of America
3913 Old Lee Highway Suite 33-B
Fairfax, VA 22030

(703) 359-0826

UL Underwriters Laboratories
333 Pfingsten Rd.
Northbrook, IL 60062

(808) 272-8800

- 4.5 Federal Government Agencies: Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CFR Code of Federal Regulations
(Available from the Government Printing Office)
N. Capitol St. between G and H St. NW
Washington, DC 20402

(202)

783-3238

CPSC Consumer Product Safety Commission
5401 Westbard Ave.
Bethesda, MD 20207

(800)

638-2772

EPA Environmental Protection Agency
401 M St., SW
Washington, DC 20460

(202) 382-2090

HUD Department of Housing and Urban Development
Office of Lead Based Paint Abatement and Poisoning Prevention
Room B-133
451 7th St. SW, Washington, DC 20410

(202) 755-1805

MSHA Mine Safety and Health Administration

(U.S. Department of Commerce)
4015 Wilson Blvd
Arlington, VA 22203

(703) 235-1565

NIOSH National Institute of Occupational Safety and Health
U.S. Dept. of Labor, Room N-3718
200 Constitution Ave, N.W.
Washington, D.C. 20210

(800) 35-NIOSH

NIST National Institute of Standards and Technology
(U.S. Department of Commerce)
Gaithersburg, MD 20899

(301) 975-2000

OSHA Occupational Safety and Health Administration
(U.S. Department of Labor)
200 Constitution Ave., NW
Washington, DC 20210

(202) 219-6091

4.6 SUBMITTALS

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards bearing upon performance of the Work.

END OF SECTION 1093

SECTION 01302 SUBMITTALS – LEAD

PART 5 - GENERAL

5.1 RELATED DOCUMENTS

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

5.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals from the Contractor to the Designer as required for performance of the Work, including;
 - 1. Contractor's construction schedule.
 - 2. Daily construction reports.
 - 3. Product Data.
- B. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Permits.
 - 2. Applications for payment.
 - 3. Performance and payment bonds.
 - 4. Insurance certificates.
 - 5. List of Subcontractors.

5.3 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Designer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - 3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.
 - a. Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Designer will promptly advise the Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two weeks for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Designer sufficiently in advance of the Work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
 - 1. Include the following information on the label for processing and recording action taken.
 - a. Project name.

- b. Date.
 - c. Name and address of Designer.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from Contractor to Designer using a transmittal form. Submittals received from sources other than the Contractor will be returned without action.
1. On the transmittal record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.
 2. Transmittal Form: Use AIA Document G 810.

5.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Schedule: Provide proposed detailed schedule including work dates, work shift time, number of employees, dates of start and completion including dates of preparation work, removals and final inspection dates.
- B. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 30 days of the date established for "Commencement of the Work".
1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week.
 2. Within each time bar indicate estimated completion percentage. As Work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically sequences necessary for completion of related portions of the Work.
 5. Indicate Clearance of each Work Area in advance of the date established for Clearance. Allow time for testing and other Designer's procedures necessary for certification of Clearance.
 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Designer's procedures necessary for certification of Substantial Completion.
- C. Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by requirements for phased completion to permit Work by others working at the site.
- D. Work Stages: Indicate important stages of construction for each major portion of the Work, including testing and installation. Include indication of start and finish times for the following:
1. Preparation of the Work Area
 2. Lead dust decontamination
 3. Visual Inspection Clearance

4. Lead Dust Wipe Clearance
 5. Substantial Completion.
- E. Area Separations: Provide a separate time bar to identify each major construction area for each major portion of the Work. Indicate where each element in an area must be sequenced or integrated with other activities.
- F. Distribution: Following response to the initial submittal, print and distribute copies to the Designer, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- G. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

5.5 SUBMITTAL SCHEDULE

- A. After development and acceptance of the Contractor's construction schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for establishment of the Contractor's construction schedule.
1. Coordinate submittal schedule with the list of subcontracts, the list of products as well as the Contractor's construction schedule.
 2. Prepare the schedule in chronological order; include submittals required during the first 90 days of construction. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category.
 - d. Name of subcontractor.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for resubmittal
 - g. Scheduled date the Designer's final release or approval.
- B. Distribution: Following response to initial submittal, print and distribute copies to the Designer, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity, where revisions have been recognized or made. Issue the updated schedule concurrently with report of each meeting.

5.6 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report, recording the following information concerning events at the site; and submit duplicate copies to the Designer at weekly intervals:
1. Log of those entering and leaving Work Area.
 2. List of subcontractors at the site.
 3. Approximate count of personnel at the site.
 4. Accidents and unusual events.

5. Meetings and significant decisions.
6. Stoppages, delays, shortages, losses.
7. Meter readings and similar recordings.
8. Emergency procedures.
9. Orders and requests of governing authorities.
10. Change Orders received, implemented.
11. Services connected, disconnected.
12. Equipment or system tests and start-ups.
13. Partial Completions, occupancies.
14. Substantial Completions authorized.

5.7 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts.
 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of coordination requirements.
 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 3. Preliminary Submittal: Submit a preliminary single-copy of Product Data where selection of options is required.
 4. Submittals: Submit 2 copies of each required submittal; submit 4 copies where required for maintenance manuals. The Designer will retain one, and will return the other marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until an applicable copy of Product Data applicable is in the installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

5.8 MISCELLANEOUS SUBMITTALS:

- A. Material Safety Data Sheets: Acknowledge receipt of material safety data sheets.
- B. Inspection and Test Reports: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.
- C. Records of Actual Work: Furnish 4 copies of records of actual work, one of which will be returned for inclusion in the record documents as specified in Section "Project Closeout".

- D. Standards: Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, submit a single copy of standards for the Designer's use. Where workmanship, whether at the project site or elsewhere is governed by a standard, furnish additional copies of the standard to fabricators, installers and others involved in the performance of the work.
- E. Closeout Submittals: Refer to Section "Project Closeout" and to individual Sections of these specifications for specific submittal requirements of project closeout information.
- F. Record Documents: Furnish set of original documents as maintained on the project site. Along with original marked-up record drawings provide 2 photographic copies of marked-up drawings, which, at the Contractor's option, may be reduced to not less than half size.

5.9 DESIGNER'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Designer will review each submittal, mark to indicate action taken, and return promptly.
 - 1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Designer will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
 - 1. Final Unrestricted Release: Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 - 2. Final-But-Restricted Release: When submittals are marked "Approved as Noted," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 - 3. Returned for Resubmittal: When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Not Approved, Revise and Resubmit" to be used at the Project site, or elsewhere where Work is in progress.

- 5.10 Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Action Not Required"-

PART 6 - PRODUCTS (Not Applicable).

PART 7 - EXECUTION (Not Applicable).

SUBMITTAL CHECKLIST

BEFORE START OF WORK

Supplementary Conditions

- ___ Bodily Injury and Property Damage Liability: Certificate of Coverage
- ___ Worker's Compensation Insurance: Certificate of Coverage
- ___ Automobile Liability: Certificate of Coverage

01014 Summary of Work - Lead

- ___ Pre-construction Inspection
- ___ Alternate Methods

01044 Coordination - Lead

- ___ Contingency Plans
- ___ Telephone Numbers
- ___ Notification sent to entities at the work site
- ___ Notifications sent to emergency service agencies
- ___ Accreditation: of general superintendent, foreman and workers
- ___ Staff Names (Exhibit A)

01302 Submittals - Lead

- ___ Submittal Schedule
- ___ Contractor's Construction Schedule

01555 Worker Protection - Lead

- ___ State and Local License: for each worker
- ___ Certificate Worker Acknowledgement: for each worker
- ___ Report of Medical Examination: of each worker
- ___ Compliance Program: in compliance with 1926.62
- ___ Exposure Assessment: in compliance with 1926.62

02067 Disposal of Waste Materials - Lead

- ___ Waste Hauler State License
- ___ Waste Hauler Local License
- ___ U.S. EPA Identification Number of Waste Hauler
- ___ Name, address, permit and State License of landfill
- ___ Landfill contact person and telephone number
- ___ EPA Uniform Hazardous Waste Manifest
- ___ EPA Notification of hazardous waste activity
- ___ Forms required by State or Local agencies

PERIODICALLY DURING WORK

01044 Coordination - Lead

- ___ Daily Logs
- ___ Event Reports
- ___ Accident Reports
- ___ Discovered Condition Reports

01302 Submittals - Lead

- ___ Record Documents

01555 Worker Protection - Lead

- ___ Updated information on workers

01566 Respiratory Protection - Lead

- ___ Update information on new equipment

01633 Substitutions - Lead

- ___ Refer to Section

01702 Contract Closeout - Lead

- ___ Refer to Section

02067 Disposal of Waste Material - Lead

- ___ Copies of manifests and disposal site receipts.

PROJECT CLOSEOUT

01044 Coordination - Lead

- ___ Daily Log

01702 Contract Closeout - Lead

- ___ Record Documents
- ___ Record Product Data

01727 Project Decontamination - Lead

- ___ Certificate of Visual Inspection

END OF SECTION 01302

SECTION 01506 WORK AREA CONTAINMENT – LEAD

PART 8 - GENERAL

8.1 RELATED DOCUMENTS

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

8.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Worker Protection: is specified in Section 01555.
- B. Respiratory Protection: is specified in Section 01556.

8.3 DESCRIPTION OF WORK:

- A. Work of this Section consists of preparing a Work Area for interior work of the following specification Sections.
 - 1. Section 01727 Project Decontamination - Lead

PART 9 - PRODUCTS

9.1 HEPA Filtered Vacuum Cleaners:

9.2 Duct Tape: Provide 2" (51mm) width tape with an adhesive which is formulated to aggressively stick to sheet polyethylene.

9.3 Wet Detergent Wash: Provide detergent with a high phosphate content (at least 5%) trisodium phosphate (TSP). Follow dilution ratio recommended by the manufacturer's instructions.

9.4 Plastic Sheet: A single polyethylene film in the largest sheet size possible to minimize seams, 6.0 mils thick.

PART 10 - EXECUTION

10.1 SECURING WORK AREA:

- A. Secure Work Area from access by occupants, construction workers, project administrative staff or users of the building. Accomplish this where possible, by providing continuous monitoring of the entry point into the work area during all times of work.

10.2 DEMARCATION OF WORK AREA:

- A. Demarcate each Work Area as described below.

- B. Provide warning signs at each door and at entrance to change room leading to the controlled area reading as follows:

WARNING

LEAD WORK AREA

POISON

NO SMOKING OR EATING

10.3 SCHEDULING:

- A. Work must be carried out during normal working hours. All locations of work shall require prework coordination with in place operations prior to commencement.

10.4 INTERIOR LEAD WORK GENERAL PROCEDURES:

- A. The following precautions and procedures have application to work of this Section. Workers must exercise caution to avoid release of lead dust into the air and to contain lead dust within the Work Area.
1. Before start of work comply with requirements for worker protection in Section 01555, and respiratory protection in Section 01556.
 2. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the Work Area.
 3. Pick up any debris which may puncture polyethylene sheeting from floor and other surfaces in the immediate location of the work prior to commencing work by hand or use of a High Efficiency Particulate Air (HEPA) filtered vacuum.
 5. Cover floor in Work Area with two (2) layers of 6 mil polyethylene sheeting. Secure with duct tape and tape all seams.
 6. Be certain polyethylene sheeting is square and tight to all corners of walls, cabinetry, etc. so it will not be punctured or pulled loose by workers, ladders, tools etc.
 7. Install HEPA filter air device in immediate area of work and exhaust to exterior of building via window. The specific location of exhaust will be identified by the Owner.
 8. Provide an onsite personal wash facility for supplementing worker hygiene additional space shall be provided for storage. Fabricate Change Room from 6 mil sheet plastic. Locate so that access to Work Area is through Change Room.
 9. Cover floor in front of entry to Change Room with one layer of 6 mil sheet plastic. Securely anchor sheet plastic to prevent slipping.
 10. Provide Flapped Door as entry to Change Room from Work Area and exit from Change Room to non-work side of area. Fabricate each flapped door from overlapping contacting layers of sheet plastic. Fasten each layer on the top and one side. Each flap is to be 3" (76mm) longer than door opening. Reinforce free side and bottom of each sheet with duct tape. Alternate sides that are fastened on each layer. Form arrows pointing to entry side with duct tape on inside and outside of door.
 11. At entry to Change Room post an approximately 20 inch by 14 inch (508mm x 356mm) manufactured caution sign displaying the legend cited above in Section 3.2B.
 12. Complete requirements of the following:
 - a. Section 01555 Worker Protection - Lead
 - b. Section 01556 Respiratory Protection - Lead
 13. At end of work shift remove any dust and debris which collects on the sheeting either by using a HEPA vacuum or by spraying with wet wash solution, collect debris with wet

14. paper towels, place in disposal bag while still wet, and clean surface of plastic sheet with wet paper towels.
15. Complete the following at completion of work in an area before entering Change Room. (Minimum 2 man procedure)
 - a. Each worker shall be HEPA vacuumed thoroughly by the other worker. First worker shall then enter Change Room.
 - b. While standing on plastic drop sheet thoroughly HEPA vacuum ladder and any tools used and pass to worker in Change Room.
16. Perform a thorough cleanup of the entire Work Area daily during active lead work.
 - a. Small Debris: Small debris shall be collected by HEPA vacuuming all surfaces or by wet misting the area with wet wash solution. Sweep debris while wet and place in 6 mil disposal bags. Seal with duct tape and move to designated waste storage area.
17. Wet wipe the exterior surfaces of all disposal bags or large items wrapped in 6 mil polyethylene sheeting prior to exiting Work Area.
18. If work day is complete or if next Work Area is in another secured area: Follow decontamination procedures in Section 01555 - Worker Protection.

END OF SECTION – 01506

SECTION 01555 WORKER PROTECTION – LEAD

PART 11 - GENERAL

11.1 RELATED DOCUMENTS:

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

11.2 DESCRIPTION OF WORK:

- A. This Section describes the equipment and procedures required for protecting workers against lead contamination and other workplace hazards except for respiratory protection.

11.3 STANDARDS:

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.
- B. OSHA U.S. Department of Labor, Occupational Safety and Health Administration, Safety and Health Standards including but not limited to the following. The following Sections are brought to the contractor's attention for convenience. All appropriate OSHA Standards apply to this project.
 1. 29 CFR 1910.134 - Respiratory Protection;
 2. 29 CFR 1926.20 - General safety and health provisions;
 3. 29 CFR 1926.21 - Safety training and education;
 4. 29 CFR 1926.23 - First Aid;
 5. 29 CFR 1926.24 - Medical Surveillance and Medical Removal Protection Programs;
 6. 29 CFR 1926.25 - Housekeeping;
 7. 29 CFR 1926.28 - Personal protective equipment;
 8. 29 CFR 1926.51(f) - Washing facilities;
 9. 29 CFR 1926.55 - Gases, vapors, fumes, dusts, and mists;
 10. 29 CFR 1926.56 - Illumination;
 11. 29 CFR 1926.57 - Ventilation;
 12. 29 CFR 1926.59 - Hazard Communication Standard;
 13. 29 CFR 1926.62 - Lead Construction Standard;
 14. 29 CFR 1926.103 - Respiratory protection;
 15. 29 CFR 1926.353(c) - Ventilation: Welding, cutting or heating of metals of toxic significance
 16. 29 CFR 1926.300, 301, 302 - Hand and power tools
 17. 29 CFR 1926.451, 500, 501, 502, 503 - Scaffolding & Fall Protection.

11.4 RELATED WORK SPECIFIED ELSEWHERE:

- A. Respiratory Protection: is specified in Section 01556.

11.5 COMPETENT PERSON

- A. Definition: A "Competent Person" is one who is capable of identifying existing and predictable hazards at the worksite, and who has the authority to ensure prompt corrective measures are taken to eliminate them. The competent person has authority to shut down the project in accordance with OSHA 1926.62.

- B. Provide on-site, full time competent person (or persons) to ensure that the worker protection program is effective.

11.6 WORKER TRAINING:

- A. Certification: All workers and supervisors are to be trained, certified and accredited as required by federal, state, or local code or regulation.
- B. OSHA-Required Training: all workers are to be trained in the dangers inherent in handling lead and breathing or ingesting lead dust and in the proper work procedures and personal and area protective measures prior to the time of initial job assignment and at least annually thereafter. Include but do not limit the topics covered in the course to the following:
 - 1. Content of OSHA lead standard;
 - 2. Possible routes of exposure to lead;
 - 3. Health effects associated with lead exposure;
 - 4. Medical removal protection program;
 - 5. The importance of good personal hygiene;
 - 6. Nature of operations that could result in exposure to lead;
 - 7. The proper use and maintenance of protective clothing and equipment, including respiratory protection;
 - 8. The correct use of engineering controls and implementation of good work practices;
 - 9. Importance of and instruction in the use of necessary protective controls, practices and procedures to minimize exposure including:
 - a. Engineering controls;
 - b. Work Practices;
 - c. Respirators;
 - d. Housekeeping procedures;
 - e. Hygiene facilities;
 - f. Protective clothing;
 - g. Decontamination procedures;
 - h. Emergency procedures;
 - i. Waste disposal procedures;
 - 10. Purpose, proper use, fitting, instructions, and limitations of respirators as required by 29 CFR 1926.103;
 - 11. The specific methods of hazard reduction to be used for the project;
 - 12. Requirements of medical monitoring/surveillance program;
 - 13. Signs and labels;
 - 14. Work practices including hands on or on-the-job training;
 - 15. Personal decontamination procedures;
 - 16. Health and safety considerations;
 - 17. Review of OSHA written compliance program as required by 29 CFR 1926.62;
 - 18. Information on the use of chelating agents and the fact that they should not be routinely used to remove lead from their bodies except under the direction of a licensed physician;
 - 19. The employees' right of access to medical records per 29 CFR 1910.20.
- C. EPA-Required Training: Training proposed by EPA for all persons conducting "Lead Based Paint activities," as defined by EPA, calls for additional training requirements including:
 - 1. For workers:
 - a. A minimum of 32 hours of training, with a minimum of 10 hours devoted to hands-on training; and
 - b. Instruction in regulatory background, Federal, state and local.
 - 2. For supervisors:

- a. A minimum of 40 hours training, with a minimum of 8 hours devoted to hands-on training; and
- b. Instruction in legal insurance issues;
- c. Development of pre-work plans;
- d. Employee information and training;
- e. Project management;
- f. Contract specifications;
- g. Supervisory techniques;
- h. Soil, dust and air testing;
- i. Clearance standards and testing;
- j. Community relations process;
- k. Cost estimations; and
- l. Recordkeeping.

11.7 MEDICAL SURVEILLANCE: Employers shall make initial medical surveillance available to any employee exposed at or above the action level on any day. The surveillance must include sampling for blood lead and zinc protoporphyrin levels. Employers must also provide biological monitoring for all employees performing lead-related tasks.

- A. Provide full medical examinations for all workers performing lead related work at first use of negative pressure respirators and for each worker exposed to lead for more than thirty days a year and/or who have blood lead levels over 25 micrograms/deciliter. Provide initial medical examinations for each worker exposed to lead for more than 1 day year. Provide medical examination for any employee who has signs and symptoms of lead poisoning or when a worker becomes pregnant.
- B. Medical evaluation to include:
 1. A detailed work and medical history.
 2. A thorough physical examination.
 3. Evaluation of pulmonary status.
 4. A blood pressure measurement.
 5. A blood sample and analysis that determines blood lead levels, hemoglobin and hematocrit, red cell indices, peripheral smear morphology, blood urea nitrogen, serum creatinine and zinc protoporphyrin.
 6. A routine urinalysis.
 7. Any other laboratory or other test which is recommended by the examining physician.
 8. The medical evaluation must be provided prior to the start of the lead hazard reduction project or assignment requiring the use of negative pressure respirators.
- C. Blood testing (blood lead and zinc protoporphyrin) shall be performed within 1 week of the employees scheduled work at the site. An additional blood test shall be performed at the completion of the project or upon termination of employment. The employer must make available the following:
 1. Biological monitoring for blood lead level and zinc protoporphyrin level at least every 2 months during the first six months and every two months thereafter.
 2. When an employee's blood lead level is at or above 40 µg/dl, biological monitoring at least every two months until two consecutive blood lead level results are below 40 µg/dl.
 3. Monthly blood lead level testing during removal period or any employee medically removed due to an elevated blood lead level.
 4. When an employee's blood lead level meet the criterion for medical removal (at or above 50 µg/dl), follow-up blood testing within two weeks.

11.8 MEDICAL REMOVAL:

- A. Employers must remove employees with lead exposure at or above 30 micrograms/cubic meter of air each time:
 - 1. A periodic and follow-up blood sampling test indicates a blood lead level at or above 50 µg/dl; and
 - 2. A final medical determination indicates a detectable medical condition that increases health risks from lead exposure.

11.9 COMPLIANCE PROGRAM:

- A. The OSHA Lead in Construction Standard requires the employer to establish and implement a written compliance program prior to the commencement of a job. All employees covered under this standard must implement engineering and work practice controls to reduce and maintain employee exposures to lead at or below the Permissible exposure limit (PEL). This program must include:
 - 1. Description of activities that produce lead exposures.
 - 2. Description of the specific means that will be employed to reduce exposure, and where engineering controls are used, the plans and studies used to determine the methods selected.
 - 3. A detailed schedule for implementing the compliance program.
 - 4. A report of the technology considered in meeting the PEL.
 - 5. Air monitoring data that documents the source of the lead exposure.
 - 6. Specific work practice procedures which will be employed on the project.
 - 7. Schedules of administrative controls if these are to be utilized.
 - 8. A description of all arrangements made on multi-employer work sites to inform affected employers about the lead project.

11.10 EXPOSURE ASSESSMENT

- A. The OSHA Lead in Construction Standard requires employers to implement protective measures before exposure assessment has been completed if they are conducting any one of a number of "lead related tasks". These tasks are divided into three different classes. The employer must assume that the worker is exposed to airborne concentrations at least to a certain level of lead (depending on the class) until exposure assessment shows otherwise. When the employer has objective data demonstrating that the process, operation or activity does not result in employee exposure to lead at or above the action level, the employer may rely upon such data for the initial exposure assessment.
- B. Class 1 Tasks - Employer must assume exposure of at least 50 µg/m³ - 500 µg/m³ until exposure assessment proves otherwise. Examples include:
 - 1. Manual demolition of structures;
 - 2. Manual scraping;
 - 3. Manual sanding;
 - 4. Using a heat gun;
 - 5. Power tool paint removal with dust collection systems;
 - 6. Spray painting with Lead Based paint.
- C. Class 2 Tasks - Employers must assume exposure of at least 500 µg/m³ - 2500 µg/m³ until exposure assessment proves otherwise. Examples include:
 - 1. Using lead containing mortar;
 - 2. Burning lead;

3. Rivet busting on lead paint;
 4. Power tool paint removal without dust collection systems;
 5. Clean-up activities where dry expendable abrasives are used;
 6. Abrasive blasting enclosures movement and removal.
- D. Class 3 Tasks - Employer must assume exposure of at least 2,500 $\mu\text{g}/\text{m}^3$ until exposure assessment proves otherwise. Examples include:
1. Abrasive blasting;
 2. Cutting;
 3. Welding;
 4. Torch burning.
- E. Prior to the completion of an exposure assessment of the tasks being conducted, the employer should follow the regulations as if the employee was exposed above the PEL. The employee(s) must be notified in writing within 5 days of receipt of the results representing their exposure. Where exposure is above the PEL, employees must be informed of this fact and advised of corrective action to be taken. Monitoring and analysis must have an accuracy (to a confidence level of 95%) of not less than plus or minus 25% for airborne lead levels equal to or greater than 30 $\mu\text{g}/\text{m}^3$.
- F. Personal protective equipment for each of the tasks above is to include protective work clothing and equipment, change areas, washing facilities, and training. The only difference in protective equipment for the different classes of tasks is respiratory protection which is to be provided in accordance with Section 01556.

11.11 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Owner's Project Monitor for review. Do not start work until these submittals are returned with Owner's Project Monitor action stamp indicating that the submittal is returned for unrestricted use.
1. Certifications: Submit evidence that all workers and supervisors have been trained, certified and accredited as required by federal, state, or local code or regulation.
 2. Certificate of Worker's Acknowledgement: Submit an original signed copy of the Certificate of Worker's Acknowledgement found at the end of this Section, for each worker who is to be at the job site or enter the Work Area.
 3. Report from Medical Examination: conducted within last 12 months as part of compliance with medical surveillance requirements for each worker who is to enter the Work Area. Submit, at a minimum, for each worker the following:
 - a. Name and Social Security Number
 - b. Physicians Written Opinion from examining physician including at a minimum the following:
 - 1) Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from lead exposure.
 - 2) Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.
 - 3) Results of blood lead determinations and any actions taken as a result of recommendations.
 - 4) Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that necessitates further medical exam or treatment.
 - c. Copy of information that was provided to physician prior to the examination.

- d. Statement that worker is able to wear and use the type of respiratory protection proposed for the project and is able to work safely in an environment capable of producing heat stress in the worker.
4. Compliance Program: Submit program in compliance with 1926.62.
5. Exposure Assessment: Submit assessment in compliance with 1926.62.

PART 12 - EQUIPMENT

12.1 PROTECTIVE CLOTHING:

- A. Coveralls: Provide disposable full-body coveralls and disposable head covers, and require that they be worn by all workers in the Work Area. Provide a sufficient number for all required changes, for all workers in the Work Area. Dispose of coveralls as clothing waste at the end of each day.
- B. Boots: Provide work boots with non-skid soles, and where required by OSHA, foot protective, for all workers. Provide boots at no cost to workers. Do not allow boots to be removed from the Work Area for any reason, after being contaminated with lead dust. Dispose of boots with clothing waste at the end of the work, or bag and take to next project. Boots that are non-porous may be decontaminated and removed from Work Area.
- C. Gloves: Provide work gloves to all workers and require that they be worn at all times in the Work Area. Gloves must be secured to the coveralls using duct tape to protect arms and hands from the chemical strippers. Do not remove gloves from Work Area. Dispose of as clothing waste at the end of the work.

12.2 ADDITIONAL PROTECTIVE EQUIPMENT:

- A. Disposable coveralls, head covers, and footwear covers shall be provided by the Contractor for the Owner, Designer, Project Monitor, and other authorized representatives who may inspect the job site.

12.3 SHOWER FACILITIES

- A. Provide shower facilities to be used by all workers when lead air concentrations exceed $30\mu\text{g}/\text{m}^3$ or surface lead dust concentrations exceed $2,000\ \mu\text{g}/\text{FT}^2$.
 1. Provide pre-fabricated or site-built shower facilities. Supply hot and cold water to shower head which can be controlled from inside shower. Filter all shower water or dispose of in accordance with Section 02067.
 2. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

12.4 WASHING FACILITIES

- A. Provide washing facilities to be used by all workers when exiting the Work Area.
- B. Provide temporary sink with hot and cold water supply. Filter all water or dispose of in accordance with Section 02067.
 1. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

PART 13 - EXECUTION

13.1 GENERAL:

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of lead concentration in the Work Area.
- B. Each time Work Area is entered remove street clothes and put on new disposable coverall or (re-use previous coverall if not overly contaminated or torn), new head cover, and a clean respirator with cartridges appropriate for the lead work to be performed. Reinforce coverall seams and secure gloves to coveralls with duct tape. Proceed through Change Room, don foot covers and enter Work Area.

13.2 DECONTAMINATION PROCEDURES:

- A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:
- B. Air Purifying-Negative Pressure Respirators: Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a half or full face cartridge type respirator:
 - 1. Still wearing respirators, comply with the following procedure. Care must be taken to follow reasonable procedures in removing the respirator and filters to avoid disturbing lead dust. The following procedure is required as a minimum:
 - a. HEPA vacuum heavily contaminated protective work clothing.
 - b. When exiting Work Area, remove foot covers in Work Area. Remove disposable coveralls and disposable head covers in the Change Room. Remove protective coveralls by carefully rolling down the garment to minimize exposure to lead dust.
 - 2. Remove respirator and set aside.
 - 3. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.
 - 4. Remove respirator cartridges from face piece and either seal with duct tape or discard.
 - 5. Carefully wash face piece of respirator inside and out.
 - 6. Thoroughly wash hands with soap and water.
- C. Within Work Area:
 - 1. Require that workers NOT eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the Work Area.

13.3 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

- A. Including in the specification, if a certificate of worker's acknowledgement. After each worker has been included in the Contractor's Respiratory Protection Program, completed the training program and medical examination, secure a fully executed copy of this form.

END OF SECTION 01555

SECTION 01556 RESPIRATORY PROTECTION – LEAD

PART 14 - GENERAL

14.1 RELATED DOCUMENTS:

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

14.2 DESCRIPTION OF WORK:

- A. Instruct and train each worker involved in lead decontamination with hazard training in proper respiratory use and require that each worker wear a respiratory, properly fitted on the face in the Work Area from the start of any operation which may expose the worker above the permissible exposure limit (PEL) until the Work Area is completely decontaminated. Use respiratory protection appropriate for the lead levels encountered in the work place or as required for other toxic or oxygen-deficient situations encountered.

14.3 STANDARDS:

- A. Except to the extent that more stringent requirements are written directly into the Contract Documents, the following regulations, guidelines and standards have the same force and effect (and are made a part of the Contract Documents by reference) as if copied directly into the Contract Documents, or as if published copies were bound herewith. Where there is a conflict in requirements set forth in these regulations and standards, meet the more stringent requirement.
- B. OSHA- U.S. Department of Labor Occupational Safety and Health Administration, Safety and Health Standards 29 CFR 1910, Section 1000 - Air Contaminants, Section 1926.103, 1910.134 - Respiratory Protection and Section 1926.62 - Lead.
- C. ANSI- American National Standards Institute, American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992.
- D. NIOSH- National Institute for Occupational Safety and Health, Guide to Respiratory Protection, 1987, 87-116.
- E. MSHA- Mine Safety and Health Administration

PART 15 - PRODUCTS

15.1 AIR PURIFYING RESPIRATORS

- A. Respirator Bodies: Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.
- B. Filter Cartridges: Provide, at a minimum, HEPA type filters labeled with NIOSH and MSHA Certification for "Radionuclides, Radon Daughters, Dust, Fumes, Mists including Asbestos-Containing Dusts and Mists" and color coded in accordance with ANSI Z88.2 (1992).

In addition, a chemical cartridge Section (organic vapor/acid gas) may be added, if required, for solvents, strippers, etc., in use. In this case, provide cartridges that have each Section of the combination canister labeled with the appropriate color code and NIOSH/MSHA Certification.

- C. Non-permitted respirators: Do not use single use, disposable or quarter face respirators.

PART 16 - EXECUTION

16.1 GENERAL:

- A. Respiratory Protection Program: Comply with ANSI Z88.2 - 1992 "Practices for Respiratory Protection" and OSHA 29 CFR 1910 and 1926.
- B. Require that respiratory protection be used at all times that there is any possibility of airborne lead levels exceeding the permissible exposure level required in OSHA 1926.62
- C. Require that a respirator be worn by anyone in a Work Area at all times, regardless of activity, during a period that starts with any operation which could cause disturbance of lead dust.
- D. Regardless of Airborne Lead Levels or Surface Dust Contamination: Require that the minimum level of respiratory protection used by half-face air-purifying respirators with high efficiency filters.
- E. Do not allow the use of single-use, disposable, or quarter-face respirators for any purpose.

16.2 FIT TESTING:

- A. Initial Fitting: Fit types of respirator to be worn by each individual. Require that an individual use only those respirators for which training and fit testing has been provided. Require that fit testing be repeated semiannually, and at any time a respirator is replaced.
- B. On a Monthly Basis, check the fit of each worker's respirator by having irritant smoke blown onto the respirator from a smoke tube.
- C. Upon Each Wearing: Require that each time an air-purifying respirator is put on it be checked for fit with a positive and negative pressure fit check in accordance with 29 CFR 1926.62, Appendix D.

16.3 PERMISSIBLE EXPOSURE LIMIT (PEL):

- A. Permissible Exposure Limit (PEL-TWA) - 50 micrograms/cubic meter
- B. Action Level (TWA) - 30 micrograms/cubic meter

16.4 TYPE OF RESPIRATORY PROTECTION REQUIRED:

- A. Provide Respiratory Protection as indicated in paragraph below.

16.5 RESPIRATORY PROTECTION FACTOR:

Table I. -- Respiratory Protection for Lead Aerosols

A. Airborne concentration of lead or condition of use Required respirator{1}

1.	Not in excess of 500 µg/M ³	1/2 mask air purifying respirator with high efficiency filters.{2},{3} 1/2 mask supplied air respirator operated in demand (negative pressure) mode.
2.	Not in excess of 1,250 µg/M ³	Loose fitting hood or helmet powered air purifying respirator with high efficiency filters.{3} Hood or helmet supplied air respirator operated in a continuous flow mode -- e.g., type CE abrasive blasting respirators operated in a continuous-flow mode.
3.	Not in excess of 2,500 µg/M ³	Full facepiece air purifying respirator with high efficiency filters.{3} Tight fitting powered air purifying respirator with high efficiency filters.{3} Full facepiece supplied air respirator operated in demand mode. 1/2 mask or full facepiece supplied air respirator operated in a continuous-flow mode. Full facepiece self-contained breathing apparatus (SCBA) operated in demand mode.
4.	Not in excess of 50,000 µg/M ³	1/2 mask supplied air respirator operated in pressure demand or other positive-pressure mode.
5.	Not in excess of 100,000 µg/M ³	Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode -- e.g., type CE abrasive blasting respirators operated in a positive-pressure mode.
6.	Greater than 100,000 µg/M ³ or unknown	Full facepiece SCBA operated in concentration pressure demand or other positive- pressure

{1} Respirators specified for higher concentrations can be used at lower concentrations of lead.

{2} Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.

{3} A high efficiency particulate filter (HEPA) means a filter that is 99.97 percent efficient against particles of 0.3 micron size or larger.

16.6 AIR PURIFYING RESPIRATORS:

- A. Negative pressure: Half or full face mask: Supply a sufficient quantity of respirator HEPA filters approved for lead, so that workers can change filters as necessary. Require that respirators be wet-rinsed, and filters discarded or covered with duct tape, each time a worker leaves the Work Area. Store respirators and filters at the job site in the changing room and protect totally from exposure to lead prior to their use. Respirator cartridges must be replaced whenever a worker experiences increased breathing resistance.
- B. Powered air purifying: Half or full face mask: Supply a sufficient quantity of high efficiency respirator filters approved for lead so that workers can change filters at any time that flow through the face piece decreases to the level at which the manufacturer recommends filter replacement. Require that regardless of flow, filter cartridges be replaced after 40 hours of use. Require that HEPA elements in filter cartridges be protected from wetting during personal decontamination. Require entire exterior housing of respirator, including blower unit, filter

cartridges, hoses, battery pack, face mask, belt, and cords, be washed each time a worker leaves the Work Area. Caution should be used to avoid shorting battery pack during washing. Provide an extra battery pack for each respirator so that one can be charging while one is in use.

END OF SECTION 01556

SECTION 01727 PROJECT DECONTAMINATION- LEAD

PART 17 - GENERAL

17.1 RELATED DOCUMENTS:

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

17.2 DESCRIPTION OF REQUIREMENTS:.

- A. General: Decontamination of the Work Area following Lead Work.

17.3 RELATED WORK SPECIFIED ELSEWHERE:

- A. Work Area Clearance: Visual assessments are required to be performed by the Owner's Representative prior to considering a work area complete.

PART 18 - PRODUCTS

18.1 Disposal Bags/Plastic Sheeting: Provide 6 mil polyethylene disposal bags sealed with duct tape.

18.2 Wet Detergent Wash: Provide detergent with high phosphate content (at least 5%) trisodium phosphate (TSP). Follow dilution ratio recommended by manufacturer's instructions.

PART 19 - EXECUTION

19.1 GENERAL:

- A. Work of This Section: includes the decontamination of surfaces in the Work Area which has been, or may have been, contaminated by lead dust generated during lead work activities, or which may previously have been elevated.
- B. Work of This Section: includes the cleaning, decontamination, and removal of temporary facilities installed prior to lead work, including:
 - 1. Floor Sheeting and Critical barriers erected by work of Section 01506
- C. Work of This Section: includes the cleaning, and decontamination of all surfaces (ceiling, walls, floor) of the Work Area, and all cabinetry or equipment in the Work Area.

19.2 START OF WORK:

- A. Previous Work: During completion of the lead work specified in other Sections, the layer of polyethylene sheeting will have been removed and disposed of along with any gross debris generated by the lead work.

- B. Start of Work: Work of this Section begins with the cleaning of the building surfaces. At start of work the following will be in place:
1. Floor Sheeting And Critical Barrier: A barrier between the Work Area and other portions of the building or the outside.
 2. Critical Barrier Sheeting: Over lighting fixtures, ventilation, openings, doorways, convectors, and other openings.
 3. Flapped Doorway Sheeting: Between the Work Area and the changing room.

19.3 PRELIMINARY FIRST CLEANING:

- A. Preliminary Cleaning: Clean tools, ladders and equipment by HEPA vacuuming. Follow HEPA vacuuming with wet cleaning of all tools and equipment.
- B. Immediately following preliminary cleaning, mist and remove poly sheeting. Remove highest sheeting first and work down to floor. Fold sheeting inward to trap any leaded dust or residue. Place sheeting in 6 mil disposal bags and dispose in accordance with Section 02067.

19.4 FINAL CLEANING:

- A. HEPA Vacuum: All surfaces in Work Area. Start at point farthest from main entrance into work area and finish vacuuming back the entrance. Begin at top of each room and work down. Sequence to avoid passing through rooms already cleaned.
- B. Mist Critical barriers sheeting and remove.
- C. HEPA Vacuum area previously covered by critical barrier sheeting.
- D. Perform wet detergent wash of all surfaces. Begin at point farthest from main entrance, work from top to bottom. Take care not to damage existing finishes and surfaces. Change cleaning mixture in accordance with manufacturer's recommendations or at a minimum after cleaning each room. Filter all waste water or dispose of in accordance with Section 02067.
- E. Wiping Work Area
1. The Work Area should be cleaned using a three container method. Fill two buckets with clean water and place them in the Work Area with the container of cleaning solution.
 2. Pour cleaning solution onto a clean cloth. Wring excess solution into one of the buckets without placing the cloth into the bucket. Wipe the work surface with the cloth. Add more cleaning solution to the cloth and continue wiping until the entire surface area has been covered. Discard all cloths used in this procedure in the disposal bag.
 3. Dip and wring out a clean cloth in the first rinse bucket. Wipe off the Work Area. Rinse the cloth in the first bucket again and wring out thoroughly. Rinse the cloth in the second bucket and wring out thoroughly again.
 4. Continue to clean the work surface with the cloth and rinse using this procedure until the entire work surface has been cleaned. Wipe off all tools to remove any dust.
 5. NOTE: The rinse water in the bucket should be changed periodically. The frequency will vary depending on the level of contamination.
- F. Mopping Work Area
1. Collect any visible debris using wet cloths before mopping the area. Pour the cleaning solution into the mop bucket. Fill two rinse buckets with clean water. Place the mop into

the cleaning solution. Wring excess solution into the mop bucket. Mop small Sections of the Work Area. Place the mop into the cleaning solution and wring thoroughly between Sections. After the entire surface has been mopped thoroughly, rinse the mop head. Completely rinse the surface by placing the mop in the first bucket, wringing it out thoroughly, placing it in the second bucket, wringing thoroughly and then mopping the surface. Continue this cycle until all areas have been rinsed.

2. NOTE: The water in the two containers should be changed periodically. The frequency will depend on the level of contamination.

- G. Perform clear water wash of all surfaces in same manner as wet detergent wash.
- H. After all surfaces in Work Area are allowed to dry, complete final HEPA vacuuming of all surfaces in same manner as first HEPA vacuuming.
- I. After Final Cleaning Perform a Complete Visual Inspection of the entire Work Area including: all surfaces, ceiling, walls, floor, doorways, windows, surfaces previously covered with critical barrier sheeting, and other openings; look for debris from any source, residue on surfaces, dust or other matter. If any debris, residue, dust or other matter is found repeat final cleaning and continue decontamination procedure from that point. When the area is visually clean, complete the certification at the end of this Section. Visual inspection is not complete until confirmed in writing, on the certification, by Project Monitor.
- J. Perform final clearance sampling in accordance with Section 01014 final clearance sampling.

19.5 SUBSTANTIAL COMPLETION OF LEAD WORK:

- A. Lead Work is Substantially Complete upon meeting the requirements of this Section, and Section 01421 Project Clearance, including submission of:
 1. Certificate of Visual Inspection
 2. Receipts documenting proper disposal as required by Section 02067 Disposal of Waste Material.
 3. Punch list detailing incomplete items.

19.6 CERTIFICATE OF VISUAL INSPECTION:

- A. Following this Section is a "Certificate of Visual Inspection". This certification is to be completed by the Contractor and certified by the Project Monitor. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

END OF SECTION 01727

SECTION 02067 DISPOSAL OF WASTE MATERIALS – LEAD

PART 20 - GENERAL

20.1 RELATED DOCUMENTS:

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

20.2 DESCRIPTION OF THE WORK:

- A. This Section describes the disposal of lead-containing or lead contaminated waste materials. Disposal includes packaging of waste materials. Disposal is accomplished by landfilling.

20.3 SUBMITTALS:

- A. Before Start of Work: Submit the following to the Designer for review. Do not start work until these submittals are returned with Designer action stamp indicating that the submittal is returned for unrestricted use.
 1. Contractor must ascertain that the Owner is registered with the U.S. EPA as a generator of hazardous waste. If there is no generator status established, the contractor shall assist the Owner in obtaining generator identification numbers.
 2. Copy of state or local license for waste hauler.
 3. U.S. EPA identification number of waste hauler.
 4. Name and address of waste disposal facility where hazardous waste materials are to be disposed. Include contact person and telephone number. Copy of state license and permit. Provide disposal facility permits.
 5. Copy of EPA "uniform hazardous waste manifest" form.
 6. Copy of EPA "notification of hazardous waste activity" form.
 7. Copy of forms required by state or local agencies.
 8. Sample of disposal bag and labels to be used.
- B. Submit copies of all manifests and disposal site receipts to Owner's Project Monitor.

PART 21 - PRODUCTS:

21.1 Disposal: Provide 6 mil thick leak-tight polyethylene bags or wrap components in 6 mil polyethylene sheeting and seal with duct tape. Label with text as follows:

- A. "Label with specific Hazardous Waste Label: "

PART 22 - EXECUTION

22.1 GENERAL:

- A. Contact DOT, EPA, state and local authorities to determine lead disposal requirements.
- B. Lead TCLP Testing of waste shall be performed by a qualified laboratory retained by the Owner. Results will be supplied to the Contractor. Any additional testing required to dispose of waste materials, to meet disposal facility requirements shall be the responsibility of the Contractor.

- C. The contractor shall pay for any additional forms of analysis needed to dispose of waste materials at approved facilities.
- D. Waste tested which results in a lead content in the leachate of greater than or equal to five parts per million is to be considered hazardous, handled and disposed of according to local, city, state, and federal regulations.
- E. Place all waste generated during the project into containers suitable for the type of waste generated. Waste shall be segregated and characterized into the following classes of waste materials: Separate waste materials into the following categories and label all disposal bags and wrapped packages.
- F. Other Waste Scheduled For Waste Characterization Testing
 - 1. Plastic sheeting and duct tape used during lead related work.
 - 2. Rags, sponges, mops, respirator cartridges and other materials used during lead work.
- G. Hazardous Waste (as determined by testing)
 - 1. Disposable Personal Protective Equipment
 - 2. HEPA Vacuum bags and collected debris
- H. Properly store and secure waste at all times. Do not leave debris in uncovered or unlocked trucks or dumpsters. Do not incinerate debris or use an unauthorized dumpster. Do not introduce lead contaminated water into storm or sanitary sewers.

22.2 DISPOSAL OF HAZARDOUS LIQUID OR SOLID WASTES: (As Determined By Testing)

- A. Comply with RCRA, DOT, State and local regulations.
- B. Apply for an EPA identification number from the appropriate regional office if more than 100 kg of hazardous waste is generated from the lead hazard reduction process during any calendar month.
- C. Comply with DOT and State regulations for containers. The most stringent regulation shall apply.
- D. All waste is to be hauled by a licensed waste hauler with all required licenses from all state and local authorities with jurisdiction.
- E. Load all waste material into properly labeled disposal containers bags, polyethylene sheeting, or leak-tight drums. All materials are to be contained in one of the following:
 - 1. One 6 mil layer of sheet polyethylene, duct tape all seams or
 - 2. Two 4 mil disposal bags
 - 3. Sealed steel drum with no bag
 - 4. Protect interior of truck or dumpster with two layers of 6 mil polyethylene sheeting with all seams sealed with duct tape.
- F. Carefully load containerized waste in fully enclosed dumpsters, trucks or other appropriate vehicles for transport. Exercise care before and during transport, to insure that no unauthorized persons have access to the material.
- G. Do not store containerized materials outside of the Work Area. Take containers from the Work Area directly to the designated storage area, sealed truck or dumpster,

- H. At disposal site unload containerized waste:
 - 1. At a disposal site, sealed plastic bags shall be carefully unloaded from the truck.
- I. Retain all documents from the disposal site.
- J. At completion of hauling and disposal of each load, submit copy of Uniform Hazardous Waste Manifest to Owner's Project Monitor.

22.3 OTHER PROVISIONS

- A. Environmental pollution of Owner's property resulting from Contractor's hazardous waste management activities shall be promptly remediated under Owner direction, to the Owner's sole satisfaction, and at the Contractor's sole expense.
- B. Contractor agrees to either reimburse the Owner, or reduce the Contract amount by change order to cover all costs associated with waste repackaging, waste re-segregation, or pollution remediation efforts.

END OF SECTION 02067

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section 01727 "Project Decontamination" the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, counters, ledges, walls, ceiling and floor, behind critical barriers, sheet plastic, etc.) and has found no dust, debris or residue.

By: _____ Date _____
(Signature)

(Print Name) _____

(Print Title) _____

PROJECT MONITOR CERTIFICATION

The Project Monitor hereby certifies that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the contractor's certification above is a true and honest one.

By: _____ Date _____
(Signature)

(Print Name) _____

(Print Title) _____

WORK AREA

Location: _____

Room: _____

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME _____ DATE _____

PROJECT ADDRESS _____

CONTRACTOR'S NAME _____

WORKING WITH LEAD CAN BE DANGEROUS. INHALING AND INGESTING LEAD DUST CAN CAUSE AN INCREASE IN BLOOD LEAD LEVELS WHICH CAN LEAD TO ADVERSE HEALTH EFFECTS SUCH AS KIDNEY DAMAGE, ELEVATED BLOOD PRESSURE OR INFERTILITY.

Your employer's contract with the Owner for the above project requires that: You be supplied with the proper respirator and be trained in its use. You be trained in safe work practices and in the use of the equipment found on the job. You receive a medical examination. These items are to have been done at no cost to you.

RESPIRATORY PROTECTION: You must have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. You must be given a copy of the written respiratory protection manual issued by your employer. You must be equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: You must have been trained in the dangers inherent in handling lead and breathing and ingesting lead dust and in proper work procedures and personal and area protective measures. The topics covered in the course must have included the following:

- Possible routes of exposure to lead
- Health hazards associated with lead
- Respiratory protection
- Use of protective equipment
- Work practices including hands on or on-the-job training
- Personal decontamination procedures
- Health and safety considerations

MEDICAL EXAMINATION: You must have had a medical examination within the past 12 months at no cost to you. This examination must have included: health history, physical examination, a blood pressure measurement, pulmonary function test and blood sample and analysis for lead.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Signature _____ Social Security No _____

Printed Name _____ Witness _____