ATTACHMENT 3

MASTER SPECIFICATION

LEAD BASED PAINT

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

MASTER SPECIFICATION
FOR
LEAD REMEDIATION

THE CITY OF AUSTIN
Quality and Standards Management Division
Department of Public Works

DIVISION 1 - GENERAL REQUIREMENTS

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SECTION 01920 - SUMMARY OF WORK – LEAD CONTAINING MATERIALS

PART 1 – GENERAL: ALL WORK IS TO BE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF 25 TAC, SECTION 295, ARTICLE 9029, 24 CFR 35, subparts B through R, 29 CFR 1910.1025, 29 CFR 1926.62 and 40 CFR part 745, subpart E and subpart L.

The location and approximate quantities of lead (Pb) containing materials provided in these specifications are estimates only and do not include any hidden materials not identified. The Remediation Contractor is responsible to field verify for actual quantities which these plans and specifications represent. No additional compensation will be made to the Remediation Contractor(s) for differences between the estimated quantities and the actual quantities unless prior written approval is obtained from the Owner or his representative.

1.01 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.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. **The Project** may consist of Remediation, Removal, Encapsulation and/or Stabilization of Lead (Pb) containing materials,

1. **Project Location:** City of Austin, Texas
2. **Owner:** City of Austin

B. ***Salvage of any materials shall not be allowed.***

C. The Remediation Contractor shall provide unrestrained access to the property to the Owner and Owner's Representative.

The work under this contract involves the remediation of potential lead(Pb) hazards through the use of approved removal, encapsulation and/or stabilization procedures. All work will be conducted in and around city-owned facilities. These facilities could be public access and/or restricted access buildings and facilities. In addition, some work could be conducted in Target Housing or child occupied facilities.

Upon successful removal, remediation and/or stabilization of the existing lead(Pb) containing materials and prior to disposal of any debris generated at the site, the Owner's Representative shall conduct all sampling performed for the purpose of characterizing the waste debris. The samples collected shall be tested utilizing Toxicity Characteristic Leachate Procedures (TCLP) for the RCRA 8 Metals which will confirm the lack of or level of hazardous materials present in the debris that will be disposed of by landfilling.

Lead (Pb) Remediation Work for Building Components may consist of the component removal of the existing painted metal building components. All painted metal components shall be segregated from the demolition debris and transported to a City of Austin approved metals recycling facility.

The following lead (Pb) hazard remediation methods are prohibited:

1) Open flame burning;
2) Chemical stripping with methylene chloride based paint strippers;
3) Uncontained abrasive blasting;
4) Uncontained power washing;
5) Dry sanding or scraping;
6) Power sanding without HEPA attachement;
7) Sanding of wood after chemcial stripping.

All equipment used on this project shall be free of any visible debris and operational. The Owner's Representative along with the Contractor's designated supervisor shall inspect all equipment prior to it being brought into the work area. If any debris is found on the equipment it is suspected to be lead (Pb) contaminant related. Therefore, the equipment shall be HEPA vacuumed, wet wiped and decontaminated. **The decontamination of the equipment shall take place on the project site per Section 01935 – Project Decontamination. Wash tools and equipment that come in contact with contaminated soil. Collect and filter wash water. Dispose of in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.**

The Contractor shall adequately staff this project such that it will be completed in accordance with the Contract Documents. If the project is not completed within this time frame, the Owner will backcharge the Contractor for any charges incurred by the Owner for additional Owner Representative services required to complete this project.

The Contractor shall submit the names and resumes (including pertinent project experience) of at least two (2) properly licensed supervisors to be used to conduct this lead (Pb) contamination remediation project. If the supervisors submitted are approved by the Owner, the Contractor shall ensure that at least one of these project supervisors are on site throughout the project including final tear down operations. The Contractor shall not substitute an approved project supervisor without the prior approval of the Owner.

All Contractor worker and supervisory personnel at the work site shall properly trained, equipped and possess valid and current Texas Department of State Health Services Lead (Pb) Licenses and associated training certificates. During all phases of this project, the Contractor project site supervisor shall remain at the project site during all work activities.

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

1.03 PLAN OF ACTION

Submit a written detailed job-specific plan of the procedures proposed for use in complying with the requirements of this specification. Include in the plan the location, size, layout and details of the work areas and worker decontamination facilities. Include the sequencing of work processes, the

interface of trades involved in the performance of work, methods to be used to assure the safety of site occupants and visitors to the site, disposal/recycling plan including location of approved disposal/recycling site, and a detailed description of the methods to be employed to control fugitive dust and debris. In addition, include the method of encapsulation to reduce lead (Pb) dust generation in the work area and packaging of lead (Pb) contaminated dust and debris.

Describe the methods that will be used to comply with OSHA requirements including submission of exposure monitoring to demonstrate adequacy of respiratory and worker protection equipment selected. Note: The guideline presented in Section 01932 – Respiratory Protection shall dictate the **minimum respiratory protection**.

Prior to commencement of Work the Owner or Owner's Representative must approve the submitted plan of action.

In summary, a **Written** Plan of Action shall contain, at a minimum, the following:

1. Facilities layout and work area details that illustrate placement of equipment and decontamination facilities

2. Work process sequencing

3. Interface of trades

4. Discussion of control methods that will be implemented to:

   a. Assure site safety to adjacent occupants; and
   b. Assure that fugitive dust and debris are controlled

5. Method of packaging of LBP substrates, dust, and debris

6. A description of the worker safety program that will be used to ensure compliance with OSHA requirements (29 CFR 1926.62)

1.04 EXAMINATION

Prior to commencement of work, examine areas in which work will be performed with the Owner's Representative. Prepare a listing of damage to structure, surfaces, and 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 Owner's Representative prior to starting work.

1.05 POTENTIAL LEAD (PB) HAZARD

The disturbance or dislocation of lead-based painted materials may cause lead (Pb) dust to be released into the 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.

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-based paint, take appropriate continuous measures as necessary to protect all individuals from the potential hazard of exposure to lead (Pb) dust. Such measures shall include the procedures and methods described herein, and compliance with regulations and guidelines of applicable federal, state and local agencies.

1.06 STOP WORK

If the Owner or Owner's Representative 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.

1.07 LEAD CONTAINING PAINT COATED SURFACES

A. Lead-(Pb) containing paint is known to be present at the work-site. The following is a list of some of the surfaces that are assumed to be painted with lead (Pb) containing paint. There may be other surfaces that are also painted with lead-based paint. Components and surfaces not in this list may be included in the Work.

All painted building components
All interior and exterior painted metal components
All interior and exterior painted wood components
All interior and exterior painted masonry components

B. All painted surfaces are assumed to contain some quantity of lead (Pb) in the paint unless lab analysis of the subject paint reveal that the Lead(Pb) content is below detectable limits. It is the Remediation Contractor's responsibility to provide adequate protection for his personnel and conform to all OSHA requirements.

C. It is the Contractor's responsibility to estimate the quantities of lead-based paint surfaces to be remediated for this project. The Contractor shall field verify all quantities.

1.09 WORK UNDER OTHER CONTRACTS

A. **Separate Contract:** The Owner has not awarded a separate contract for performance of certain construction operations at the site. There will be only one contract awarded by the Owner for all details of the project.

1.10 WORK SEQUENCE

A. **The Remediation and Demolition Work** will be conducted in a single phase as directed in the Contract Documents.

1.11 CONTRACTOR USE OF PREMISES

A. **Use of the Site:** Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.

1. **Owner Occupancy:** The building is currently vacant and will not be occupied during remediation.

2. **Driveways, Entrances and Surrounding Roadways:** Keep driveways, entrances, and surrounding roadways 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 unless prior arrangements have been made with the Owner. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

3. 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.

4. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary obtain and pay for such storage off site.

B. **Use of the Existing Building:**

1. Keep public areas free from accumulation of waste, rubbish or construction debris.

2. No Smoking or open fires will be permitted within the building enclosure or on the premises.

3. **Use of Toilet Room:** Use of existing toilets within the building or surrounding buildings by the Contractor and his personnel, ***will not be*** permitted. The Contractor shall provide toilet facilities for its personnel use.

1.12 OCCUPANCY REQUIREMENTS

A. **Full Owner Occupancy:** The Owner **will not occupy** the site and existing building during the entire construction period.

1.13 SUBMITTALS

Before the Start of Work: Submit the following to the Owner and Owner's Representative for review. Do not begin work until these Submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use. ***Allow 5 days time for review of submittals.***

A. **Plan of Action:** Submit as a written report.

B. **Inspection:** Submit written report on inspection carried out as required by this section. Include copies of all photographs, videotapes, etc.

C. **Alternative Methods:** Submit, in writing, any alternative methods proposed to accomplish the work of this contract.

D. **Pre-project medical biological monitoring** for project workers as delineated in Section 01931 Worker Protection- Lead Containing Materials

E. **Submit copies of valid and current Texas Department of State Health Services Lead (Pb) Licensing and associated required training certificates for all worker and supervisory personnel at the work site. In addition, copies of the appropriate DOT certifications required for the manifesting and transporting of hazardous materials must be submitted.**

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01920

SECTION 01921 - COORDINATION – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

B. **Related Sections:** The following Sections contain requirements that relate to this Section:

1. Section 01924 - "Submittals" for preparing and submitting the Remediation Contractor's Construction Schedule
2. Section 01934 - "Project Closeout" for coordinating contract closeout

1.3 COORDINATION

A. Coordinate lead (Pb) contamination remediation operations included in various sections of these specifications to assure efficient and orderly completion of each part of the Work. Coordinate lead (Pb) contamination remediation operations included under different sections that depend on each other for proper execution of the Work.

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, Owner's Representative and other 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

D. **Conservation:** Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. **Lead (Pb) Abatement Supervisor:** Provide a full-time Supervisor who is licensed as a Lead (Pb) Abatement Supervisor by the Texas Department of State Health Services, certified as a Renovation, Remodeling and Painting (RRP) renovator and experienced in administration and supervision of lead (Pb) contamination removal projects including work practices, protective measures for building and personnel, disposal procedures, etc. This person is the Remediation Contractor's representative responsible for compliance with all applicable federal, state and local regulations and guidelines; particularly those relating to lead-based paint and hazardous waste.

B. **Lead (Pb) Abatement Workers:** Provide a sufficient number of workers who are certified as Lead (Pb) Abatement Workers by the Texas Department of State Health Services and experienced in lead-based paint removal projects including work practices and protective measures for building and personnel. All workers must be trained by an RRP certified renovator if performing work in target housing and/or child –occupied facilities however, if the project includes federal financing for housing rehabilitation, all workers must be trained in a classroom environment.

C. **Experience and Training:** The Lead (Pb) Abatement Supervisor shall meet all the requirements as a Competent Person as required by OSHA 29 CFR 1926.62. The Lead (Pb) Abatement Supervisor and Lead (Pb) Abatement Workers must have completed training in Lead Paint Abatement Health and Safety. Previous course work shall meet the requirements of the HUD Guidelines and EPA regulations including Renovation, Repair and Painting Rule (RRP) for renovators (40 CFR 745, subpart E). Also, they must have experience with projects of similar type and size.

D. **All workers and supervisory personnel must hold current and valid Texas Department of State Health Services Lead Certifications/Licenses.**

1.5 PRE-CONSTRUCTION CONFERENCE

A. An initial progress meeting, recognized as "Pre-Construction Conference", will be convened by the Owner prior to start of any work. Meet at project site, or as otherwise directed, with General Superintendent, Owner, Owner's Representative, Project Administrator, and other entities concerned with lead-based paint removal work.

1. **Attendees:** Authorized representatives of the Owner, Owner's Representative, and their consultants; the Remediation 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 hour 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. Submittal of Product Data
   h. Preparation of record documents
   i. Use of the premises
   j. Parking availability
   k. Office, work, and storage areas
   l. Equipment deliveries and priorities

m. Safety procedures
n. First aid
o. Security
p. Housekeeping
q. 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 Owner 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 Owner's Representative, the Remediation 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. Remediation Contractor's Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Remediation Contractor's Schedule, whether on time or ahead or behind schedule. Determine how tasks 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. Status of submittals
   e. Deliveries
   f. Access
   g. Site utilization
   h. Temporary facilities and services
   i. Hours of work
   j. Hazards and risks
   k. Housekeeping
   l. Quality and work standards
   m. Change Orders
   n. Documentation of information for payment requests

D. **Reporting:** Revise the Remediation Contractor's Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule no later than one (1) day after each meeting. Include a brief summary, in narrative form, of progress since the previous meeting and report.

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 personnel, by name, those entering and leaving Work Area
4. Accidents
5. Special or unusual events; i.e. barrier breaching or equipment failures
6. Documentation of Remediation 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. Remediation Contractor's inspections prior to painting, enclosure or any other operation that will conceal the condition of lead-based painted components or the substrate from which such materials have been removed
    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. High and low temperatures, general weather conditions
10. Stoppages, delays, shortages, losses
11. Meter readings and similar recordings
12. Emergency procedures
13. Orders and requests of governing authorities
14. Change Orders received and/or implemented
15. Services connected, disconnected
16. Equipment or system tests and start-ups
17. Partial Completions, occupancies
18. Substantial Completions authorized
19. Remediation Contractors final inspection/final wipe test analysis

B. Provide two (2) copies of this log to Owner's Representative on a daily basis.

C. 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 Owner's Representative 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 Owner and Owner's Representative listing chain of events, persons participating, response by Remediation Contractor's personnel, evaluation of results or effects, and similar pertinent information. When such events are known or predictable in advance, advise Owner and Owner's Representative 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 Owner and Owner's Representative 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 Owner and Owner's Representative within 24 hours of discovery 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 (Pb) contamination removal activities, location of lead-based painted components, and requirements relative to lead (Pb) contamination set forth in these specifications and applicable regulations.

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

C. **Notifications of Emergency:** Any individual at the job site may notify emergency service agencies if necessary without effect on this contract or the Contract Sum.

1.11 SUBMITTALS

A. **Before the Start of Work:** Submit the following to the Owner's Representative. No work shall begin until these submittals are returned with Owner's Representative'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. Accreditation: Submit evidence in form of training course certificate for the supervisor, foreman and workers as being trained in lead-based paint health and safety in accordance with HUD.

6. Name and address of recycling facility that will be accepting the recyclable waste.

7. Certification/Licensing: Submit evidence, in form of copies, of current and valid Texas Department of State Health Services Lead (Pb) Licensing for the firm, supervisor, foreman and all workers. Also, in conformance with EPA RRP regulations, as required submit RRP renovation certification for the supervisor and certification of the firm as an EPA Lead Safe Firm.

8. Staff Names: Submit a list of the Remediation 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.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01921

SECTION 01922 - REFERENCE STANDARDS AND DEFINITIONS – LEAD CONTAINING MATERIALS

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 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. Location is not limited.

C. **Directed:** Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Owner, requested by the Owner, and similar phrases.

D. **Approved:** The term approved, when used in conjunction with the Owner's action on the Remediation Contractor's submittals, applications, and requests, is limited to the Owner'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.

J. **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.

K. **Assigning Specialists:** Specialists are recognized experts in operations where required by the specifications. Certain Sections of the Specifications require that specialists who are recognized experts in those operations shall perform specific construction activities. 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.

L. **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.

M. **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.

N. **Owner's Representative:** This is the entity described as the "Architect" in AIA Document A201 "General Conditions of the Contract for Construction," or is the entity described as "Engineer" in Engineers Joint Contract Document Committee (EJCDC) Document 1910-8 "Standard General Conditions of the Construction Contract." All references to Architect or Engineer in the Contract Documents in all cases refer to the Owner's Representative. The Owner's Representative will represent the Owner during remediation project. The Owner's Representative will advise and consult with the Owner. The Owner's instructions to the Contractor will be forwarded through the Owner's Representative.

O. **Owner's Representative:** This is the entity described 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 Owner's Representative is a full time representative of the Owner at the job site.

1. The Owner's Representative has the authority to stop the work upon verbal order if requirements of the Contract Documents are not met, or if in the sole judgement of the Owner's Representative, the Owner, the interests of the Owner, safety of any person or the Owner's property are jeopardized by the work.

P. **Project Manual:** A bound manual consisting of the General Conditions, the Supplementary Conditions, any Special Conditions and the specification sections.

Q. **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 may be occupied by the Owner.

1.3 DEFINITIONS RELATIVE TO LEAD BASED PAINT REMEDIATION

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. **Adhesion:** the ability of dry paint or other coating to attach to or remain fixed on a surface without blistering, flaking, cracking, or being removed by tape.

E. **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 (Pb) before samples are collected (e.g., at the factory, or at the testing site); and (2) the samples are contaminated after sample collection (e.g., during transportation to the laboratory or in the laboratory).

F. **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.

G. **Ceiling Concentration:** The concentration of an airborne substance that shall not be exceeded.

H. **Certified Industrial Hygienist (C.I.H.):** An industrial hygienist certified by the American Board of Industrial Hygiene.

I. **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.

J. **Child –occupied facilities:** Day care, pre-school, kindergarten classroom, or other facility in a building constructed prior to 1978 that is visited regularly by the same child under age 6, on at least two different days within any week, provided that each day's visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours.

K. **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.

L. **Competent Person:** An agent of the Remediation 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 (Pb) hazards in the surroundings or working conditions and who has authorization by the Remediation Contractor to take prompt corrective measures to eliminate them.

M. **Detection Limit:** The minimum of a component that a method can reliably measure.

N. **Exposure Monitoring:** The personal air monitoring of an employee's breathing zone to determine the amount of contaminant (e.g. lead (Pb)) to which he/she is exposed.

O. **Federal Register:** A document published daily by the Federal government that contains either proposed or final regulations.

P. **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 (4) 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.

Q. **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.

R. **High Phosphate Detergent:** Detergent which contains at least 5% tri-sodium phosphate (TSP).

S. **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.

T. **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.

U. **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.

V. **Personal Monitoring:** Sampling of the lead (Pb) dust concentrations within the breathing zone of an employee.

W. **Personal Samples (for sampling lead (Pb) 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.

X. **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.

Y. **Respirator:** A device designed to protect the wearer from the inhalation of harmful atmospheres.

Z. **Solid Waste:** As defined in the Resource Conservation and Recovery Act (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 195.

AA. **Target Housing:** Housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless a child under age 6 years resides in or is expected to reside in such housing) and 0-bedroom dwellings.

BB. **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.

CC. **Time Weighted Average (TWA):** The average concentration of a contaminant in air during a specific time period.

DD. **TSP:** Acronym for tri-sodium phosphate.

EE. **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.

FF. **Wet Cleaning (Wet Detergent Wash):** The process of eliminating lead (Pb) 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 (Pb) contaminated waste.

HH. **Work Area:** The area where lead-based paint abatement or related work is performed which is defined and/or isolated to prevent the spread of lead (Pb) dust, or debris, and entry by unauthorized personnel.

II. **Work Practice:** A procedure followed by workers that is intended to minimize exposure to the worker and the environment.

1.4 INDUSTRY STANDARDS

A. **Applicability of Standards:** Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. **Publication Dates:** Comply with the standards in effect as of the date of the Contract Documents.

C. **Conflicting Requirements:** Where compliance with two (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 Owner or Owner's Representative for a decision before proceeding.

1. **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 Owner or Owner's Representative for a decision before proceeding.

D. **Copies of Standards:** Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.

E. **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.

F. **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 5301 Buckeytown Pike, Ste 350 Federick, MD 21704	(301) 662-2974
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 6525 Belcrest Road, Suite 480 Hyattsville, MD, 20782	(301) 277-8686
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 789 N. Dixboro Road 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 2600 N.W. Lake Road Camas, WA 98607-8542	(877) 854-3577

G. **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 (Material is usually first published in the "Federal Register")	(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

1.6 SUBMITTALS

A. **Permits, Licenses, and Certificates:** For the Owner's records, submit copies of permits, certifications, valid accreditation and Texas Department of Health certifications/licenses for all supervisory and worker personnel, 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 01922

SECTION 01923 - CODES, REGULATIONS AND STANDARDS – LEAD CONTAINING MATERIALS

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

This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of the specification. This section also sets forth those notices and permits which are known to the Owner and which either must be applied for and received, or which must be given to governmental agencies before start of work.

A. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations, guidelines and standards.

B. Requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with codes, regulations, and standards.

1.3 CODES AND REGULATIONS

A. **General Applicability of Codes and Regulations, Guidelines and Standards:** Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, 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 are bound herewith.

B. **Remediation Contractor Responsibility:** The Remediation Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State, and local regulations pertaining to work practices, hauling, disposal, and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Remediation Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable Federal, State, and local regulations. The Remediation Contractor shall hold the Owner and Designer harmless for failure to comply with any applicable work, hauling, disposal, safety, health or other regulation on the part of himself, his employees, or his subcontractors.

C. **Federal Requirements:** those requirements, as amended, which govern lead-based paint abatement work or hauling and disposal of hazardous waste materials include but are not limited to the following:

1. **OSHA:** U.S. Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

29 CFR 1910.134	-Respiratory Protection;
29 CFR 1926.20	-General safety and health provisions;
29 CFR 1926.21	-Safety training and education;
29 CFR 1926.23	-First Aid;
29 CFR 1926.24	-Fire Protection;
29 CFR 1926.25	-Housekeeping;
29 CFR 1926.28	-Personal protective equipment;
29 CFR 1926.51(f)	- Washing facilities;
29 CFR 1926.55	-Gases, vapors, fumes, dusts, and mists;
29 CFR 1926.56	-Illumination;
29 CFR 1926.57	-Ventilation;
29 CFR 1926.59	-Hazard Communication Standard;
29 CFR 1926.62	-Lead Construction Standard;
29 CFR 1926.103	-Respiratory protection;
29 CFR 1926.353	-Ventilation: Welding, cutting or heating of metals of toxic significance;
29 CFR 1926.300, 301, 302	-Hand and power tools;
29 CFR 1926.451	-Scaffolding;
29 CFR 1926.500, 502, 503	-Fall Protection;

2. **DOT:** U. S. Department of Transportation, including but not limited to:

49 CFR 171 and 172	-Hazardous Substances

3. **EPA:** U. S. Environmental Protection Agency (EPA), including but not limited to:

40 CFR 260, 261, 262, 263 and 264	Resource Conservation and Recovery Act (RCRA)

40 CFR 745 Subpart E and L	EPA Renovation, Repair, Painting (RRP) rules
60 FR 47248	Guidance on residential paint, lead-contaminated dust and lead-contaminated soil

4. **HUD:** Department of Housing and Urban Development

24 CFR 35, 905, 941, 965 and 968	Lead-Based Paint Hazard Elimination; Interim Rule

D. **State Requirements:** those requirements, as amended, which govern lead-based paint abatement work or hauling and disposal of hazardous waste materials include but are not limited to the following:

1. Texas Environmental Lead Reduction, February 19, 19996 amended May 10, 1998

2. Rules Texas Administrative Code 30 TAC 335, Industrial Solid and Municipal Hazardous Waste

E. **Local Requirements:** Abide by all local requirements which govern lead (Pb) remediation work or hauling and disposal of hazardous waste materials.

F. **Building Codes:** Comply with applicable provision of state and/or local building codes that govern any part of the work.

G. **Model Codes:** In the absence of an applicable adopted state or local building code which governs work involved in the lead (Pb) abatement project, comply with the applicable provisions of the BOCA National Codes/1993 published by International Conference for Building Officials or the SBCCI Standard Codes published by Southern Building Code Congress International.

1.4 PERMITS

A. **Permit:** All hazardous waste is to be transported by an entity maintaining a current "Industrial waste hauler permit" as required for transporting of waste materials to a disposal site.

B. **Building Permit:** Secure all necessary building permits as required by state and/or local building codes.

1.5 POSTING AND FILING OF REGULATIONS

A. **Posting and Filing of Regulations:** Post all notices required by applicable federal, state and local regulations. Maintain two (2) copies of applicable federal, state and local regulations and standards. Maintain one copy of each at job site. Keep on file in Remediation Contractor's office one copy of each.

1.6 SUBMITTALS:

A. **Before Start of Work:** Submit each item in this article to the Owner's Representative. No work shall begin until these submittals are returned with Owner's Representative's stamp indicating that the submittal has been received.

1. **Permits, Licenses, and Certificates:** For the Owner's records, submit copies of permits, valid accreditation and Texas Department of State Health Services certifications/licenses for all supervisory and worker personnel, 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 including:

   a. **State and Local Regulations:** Submit copies of codes and regulations applicable to the work.

   b. **Permits:** Submit copies of current valid permits required by state and local regulations.

   c. **Certifications/Licenses:** Submit copies of all State and Local licenses and permits necessary to carry out the work of this contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION - 01923

SECTION 01924 - SUBMITTALS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for submittals from the Remediation Contractor to the Owner and Owner's Representative as required for performance of the Work, including;

1. Remediation Contractor's construction schedule
2. Submittal schedule
3. Daily reports
4. Shop Drawings
5. Product Data
6. Samples

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

1.3 SUBMITTAL PROCEDURES

A. **Coordination:** Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that requires 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 Owner's Representative 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 re-submittals.

   a. **Allow three (3) days** for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Owner's Representative will promptly advise the Remediation 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 one (1) day for reprocessing each submittal.

   d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Owner's Representative sufficiently in advance of the Work to permit processing.

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.

   a. Project name
   b. Date
   c. Name and address of Owner
   d. Name and address of Owner's Representative
   e. Name and address of Remediation Contractor
   f. Name and address of subcontractor
   g. Name and address of supplier
   h. Name of manufacturer
   i. Number and title of appropriate Specification Section
   j. Drawing number and detail references, as appropriate

C. **Submittal Transmittal:** Package each submittal appropriately for transmittal and handling. Transmit each submittal from Remediation Contractor to Owner's Representative using a transmittal form. Submittals received from sources other than the Remediation 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 Remediation Contractor's certification that information complies with Contract Document requirements.

1.4 CONTRACTOR'S REMEDIATION SCHEDULE

A. 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.

1.5 SUBMITTAL SCHEDULE

A. After development and acceptance of the Contractor's remediation schedule, prepare a complete schedule of submittals.

1. Coordinate submittal schedule with the list of subcontracts, schedule of values and the list of products as well as the Contractor's remediation schedule.

2. Prepare the schedule in chronological order and 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 Owner's Representative's final release or approval

B. **Distribution:** Following response to initial submittal, print and distribute copies to the Owner's Representative, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution list when they have completed their assigned portion of the Work and are no longer involved in remediation 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.

1.6 DAILY REPORTS

A. Prepare a daily report, recording the following information concerning events at the site; and submit duplicate copies to the Owner's Representative at daily 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. High and low temperatures, general weather conditions
5. Accidents and unusual events
6. Meetings and significant decisions

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

1.7 SHOP DRAWINGS

A. Shop Drawings are not required under this contract.

1.8 MISCELLANEOUS SUBMITTALS

A. **Material Safety Data Sheets:** Acknowledge receipt of material safety data sheets for all materials used during remediation activities.

B. **Records of Actual Work:** Furnish two (2) copies of records of actual work, one of which will be returned for inclusion in the record documents as specified in Section 01934 – Project Closeout – Lead Containing Material.

C. **Standards:** Where submittal of a copy of standards is indicated, and except where copies of standards are specified as an integral part of a "Product Data" submittal, submit a single copy of standards for the Owner's Representative 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.

D. **Request for Information:** Where questions arise before or during the work activities, submit a written request to the Owner's Representative. Allow for at least four (4) hours for review and a response.

E. **Closeout Submittals:** Refer the Section 01934 – Project Closeout – Lead Containing Materials and to individual sections of these specifications for specific submittal requirements of project closeout information.

1.9 OWNER'S REPRESENTATIVE'S ACTION

A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Owner's Representative will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Remediation Contractor's responsibility.

B. **Action Stamp:** The Owner's Representative 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.

4. **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 2 - PRODUCTS (Not Applicable).

PART 3 - 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
__ Performance Bond: Certificate of Coverage
__ Labor and Material Bond: Certificate of Coverage

01920 Summary of Work – Lead Containing Materials

__ Plan of Action
__ Pre-construction Inspection
__ Alternate Methods

01921 Coordination – Lead Containing Materials

__ Contingency Plans
__ Telephone Numbers
__ Notification sent to entities at the work site
__ Notifications sent to emergency service agencies
__ Valid Accreditation: of general superintendent, foreman and workers
__ Valid Texas Department of State Health Services Certification/Licensing and EPA licensing and certification: of firm, general superintendent, foreman and workers, as applicable
__ Texas Department of State Health Services Notification, if applicable
__ Staff Names
__ Name and Address of recycling facility that will be accepting the recyclable waste

01922 Reference Standards and Definitions - Lead Containing Materials

__ Refer to Section

01923 Codes, Regulations, and Standards - Lead Containing Materials

__ Copy of State Regulations
__ Copy of Local Regulations
__ Valid Accreditation: of general superintendent, foreman and workers
__ Valid Texas Department of State Health Services Certification/Licensing and EPA licensing and accreditation: of firm, general superintendent, foreman and workers, as applicable
__ Permits

01924 Submittals - Lead Containing Materials

__ Submittal Schedule
__ Contractor's Remediation Schedule

01927 Remediation Facilities and Temporary Controls - Lead Containing Materials

__ Scaffolding (including Shop Drawing)
__ Hot Water Heaters: Product data
__ Decontamination Unit Sub-panel: Product data and Shop drawing
__ Ground Fault Circuit Interrupters (GFCI): Product data
__ Lamps and Light Fixtures: Product data
__ Temporary Heating Units: Product data
__ Temporary Cooling Units: Product data and installation instructions
__ Self-contained Toilet Units: Product data and name of sub-contractor
__ First Aid Supplies: Provide list of contents
__ Fire Extinguisher: Product data, location schedule

01929 Work Area Containment - Lead Containing Materials

__ Schedule of locked doors
__ Polyethylene: Product data (including fire ratings)
__ Construction plan
__ Lumber (including fire ratings)
__ Spray Cement: Product data

01931 Worker Protection - Lead Containing Materials

__ Valid Accreditation: of general superintendent, foreman and workers
__ Valid Texas Department of State Health Services Certification/Licensing and EPA licensing and certification: of firm, general superintendent, foreman and workers, as applicable
__ Certificate Worker Acknowledgement for each worker and supervisor
__ Training Program course outline
__ Report of Medical Examination of each worker and supervisor including pre-project biological medical monitoring report
__ Compliance Program in compliance with 1926.62
__ Exposure Assessment in compliance with 1926.62
__ Notarized Certifications

01932 Respiratory Protection - Lead Containing Materials

__ Respiratory Protection Program written manual
__ Respirator Product Data
__ Historic Sample Data
__ Fit Test Documentation

01933 Materials and Equipment - Lead Containing Materials

__ Product List Schedule

01936 Removal of Lead Containing Material Substrates

__ HEPA Vacuums: Product data
__ Wet Detergent Wash
__ Material Safety Data Sheet

01938 Disposal of Waste Materials - Lead Containing Materials

__ Valid Waste Hauler State License
__ Valid Waste Hauler Local License, if applicable
__ 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

01921 Coordination - Lead Containing Materials

__ Daily Logs
__ Event Reports
__ Accident Reports
__ Discovered Condition Reports

01924 Submittals - Lead Containing Materials

__ Record Documents

01929 Work Area Containment - Lead Containing Materials

__ Photograph of existing damage prior to applying coatings.

01931 Worker Protection - Lead Containing Materials

__ Updated information on workers

01932 Respiratory Protection - Lead Containing Materials

__ Update information on new equipment

01934 Project Closeout - Lead Containing Materials

__ Refer to section

01938 Disposal of Waste Material - Lead Containing Materials

__ Copies of manifests and disposal site receipts.

PROJECT CLOSEOUT

01921 Coordination - Lead Containing Materials

__ Daily Log

01931 Worker Protection - Lead Containing Materials

__ Report of Medical Examination of each worker and supervisor including pre-project biological medical monitoring report

01934 Project Closeout - Lead Containing Materials

__ Record Documents
__ Record Product Data

01935 Project Decontamination - Lead Containing Materials

__ Certificate of Visual Inspection

END OF SECTION 01924

SECTION 01925 - TEST LABORATORY SERVICES – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

B. Surface lead (Pb) dust wipe sampling and soil sampling during work area clearance are described in Section 01926 - Project Clearance- Lead Containing Materials.

1.2 DESCRIPTION OF THE WORK

A. Not in Contract Sum: This section describes work being performed by the Owner or Owner's Representative. This work is not in the Contract Sum.

B. This section describes air, soil and surface lead (Pb) dust wipe sampling carried out by the Owner's Representative to verify that the work area and outside environment remains uncontaminated. This section also sets forth baseline levels that the Remediation Contractor must comply with and describes the action required if the levels are exceeded. In addition, the Owner's Representative shall collect representative waste stream samples for analysis by Toxic Characteristic Leachate Procedures (TCLP) for RCRA 8 Metals as required by RCRA and specified by EPA Method 1311. Analyze paint, air, dust and soil samples using a laboratory recognized by EPA pursuant to Section 405(b) of the Toxic Substances Control Act (TSCA) as being capable of performing preparation and analyses for lead compounds in paint chip, dust and soil samples using NIOSH Method 7082, issue 2 or EPA 3050B and EPA Method SW 846 6010C (ICP) or EPA SW 846 7000B (FAA). Laboratory must be currently recognized in the National Lead Laboratory Accreditation Program (NLLAP). Also, the laboratory must be a successful participant in the Environmental Lead Proficiency Analytical Testing Program (ELPAT).

C. **Owner's representative must submit at least one field blank and one "lot" blank with each set of wipe or air samples submitted for lab analysis. Field blanks are handled like other collected samples but are unexposed. "Lot" blanks are clean, unused sampling media from a manufacturer's production lot. All field blank samples should be handled in the same manner as other collected samples except no air is drawn through the blank filters and blank wipes are clean and unused.**

D. Corrective Work triggered by this section is part of the contract sum and is to be performed by the Remediation Contractor at no additional cost to the Owner.

E. Additional air monitoring required by OSHA and Section 01932 is work of the Remediation Contractor and is not covered in this section.

1.3 ANALYTICAL METHODS:

A. Flame Atomic Absorption Spectroscopy (NIOSH Method 7082) or Inductively Coupled Plasma Emission Spectroscopy (NIOSH Method 6010C) will be used for analysis of:

1. **Surface lead (Pb) dust wipe samples**

2. **Air Samples** that will be collected by the Owner's Representative before and during the course of the project to establish area airborne lead (Pb) dust levels.

3. **Soil Samples** shall be collected by the Owner's Representative to establish a baseline lead (Pb) content to assess the existing condition of the area soil before work efforts under this contract are started. In addition, the Owner's Representative shall collect soil samples to assess the existing condition of the area soil **after** all work efforts under this contract are completed.

1.4 ESTABLISH BASELINE LEAD (Pb) CONCENTRATION:

A. Before start of work the Owner's Representative will secure the following air, dust and soil samples to establish a baseline level.

1. **Dust Samples:** Total of two (2) samples; one sample from the floor of the subject work area and one sample from the floor at entrance outside the work area in the scheduled work area.

2. **Air Samples:** One (1) sample outside and down wind of work area.

3. **Soil Samples:** One (1) composite sample per building side/ work area.

1.5 AIR AND SURFACE LEAD (PB) DUST MONITORING

The purpose of the Owner's air and surface lead (Pb) dust monitoring will be to detect faults in the work area isolation which may cause contamination of the building or exterior open space with lead (Pb) dust.

A. Should any of the above occur, cease Hazard Reduction activities. Correct fault in work area isolation or work procedures at no cost to the Owner.

1.6 AIRBORNE LEAD (Pb) CONCENTRATIONS DURING REMEDIATION WORK

The Owner may monitor airborne lead (Pb) concentrations inside and outside the work area.

A. **Inside Work Area:** Maintain lead (Pb) concentrations at lowest possible levels, not to exceed 50-micrograms/cubic meter. If concentrations rise above this, figure revise work procedures to lower lead (Pb) levels.

B. **Outside Work Area:** Maintain lead (Pb) concentrations at lowest possible levels, not to exceed baseline levels. If concentrations rise above baseline levels, stop hazard reduction work and institute corrective actions, Owner's Representative will

determine source of the high reading.

1.7 SURFACE LEAD (Pb) DUST CONCENTRATIONS

A. **Outside Work Area:** Maintain lead (Pb) concentrations at lowest possible levels, not to exceed baseline levels. The Owner prior to the start of work will determine baseline levels. If baseline levels are exceeded, stop all hazard reduction activities, and institute corrective actions. Owner's Representative will determine source of the high reading.

1.8 SOIL LEAD (Pb) CONCENTRATIONS

A. **Outside Work Area:** Maintain lead (Pb) concentrations at lowest possible levels, not to exceed baseline levels. If concentrations rise above baseline levels, institute corrective actions. Owner's Representative will determine source of the high reading.

1.9 CORRECTIVE ACTIONS

A. If the high reading above is outside work area and was result of failure of work area isolation measures, initiate the following action:

1. Decontaminate affected area in accordance with Section 01935 - Project Decontamination – Lead Containing Materials at no cost to the Owner.

B. If the high reading above is soil outside building and/or open space and was result of failure of work area isolation measures, initiate the following action:

1. Remediate soil in accordance with Section 01937 – Remediation of Lead Contaminated Soil at no cost to the Owner.

1.10 SCHEDULE OF SAMPLES

From start of work of Section 01928 Exterior Regulated Areas – Lead Containing Materials through the work of Section 01935 Project Decontamination – Lead Containing Materials, the Owner may take the following samples on a daily basis. Blanks shall be submitted by Owner's Representative as required in part 1.2 of this section.

Location Sampled	Number of Samples	Type Of Sample	Remarks
Each Work Area	1	Air	
Outside Each Work Area, (exterior remediation)	1	Air	Downwind
Outside Work area , inside the building	1	Dust	Within building adjacent to critical barrier or entrance to work area
Outside each work area (exterior remediation)	1	Soil	Outside regulated area within 10' of barrier fence or tape

1.11 PERSONAL MONITORING

A. Owner's Representative will not perform air monitoring to meet Remediation Contractor's OSHA requirements for personnel sampling.

1.12 EFFECT ON CONTRACT SUM

A. Complete corrective work with no change in contract sum if high concentrations were caused by Remediation Contractor's activities. The contract sum will be adjusted for additional work caused by high concentrations beyond the Remediation Contractor's control.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION - 01925

SECTION 01926 PROJECT CLEARANCE – LEAD CONTAINING MATERIALS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1. **Visual Inspection:** Required as a prerequisite of sampling is set forth in Section 01935 Project Decontamination – Lead Containing Materials.

1.2 DESCRIPTION OF THE WORK

A. **Not in Contract Sum:** This section describes work being performed by the Owner's Representative. This work is not in the Contract Sum.

B. This section sets forth required clearance surface lead (Pb) dust concentrations in the work area and describes testing procedures the Owner will use to measure these levels.

C. **Soil Testing**: This section sets forth required soil lead (Pb) content measurements conducted on exterior remediation projects which will be used to:

1. Support pre-and post-abatement comparisons; and

2. Determine if statistically significant changes in soil lead (Pb) content exist following the completion of remediation actions.

1.3 ANALYTICAL METHODS

A. **Flame Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP)** will be used for sample analysis. Analyze paint, air, dust and soil samples using a laboratory recognized by EPA pursuant to Section 405(b) of the Toxic Substances Control Act (TSCA) as being capable of performing analyses for lead compounds in samples using NIOSH Method 7082, issue 2, EPA SW 846 7000B (for FAA) and/or EPA SW 846 6010C (for ICP). Laboratory must be a successful participant in the National Lead Laboratory Accreditation Program. Sample matrixes include:

1. **Surface lead (Pb) dust wipe samples**
2. **Air Samples**
3. **Soil Samples**

B. **Toxic Characteristic Leachate Procedure (TCLP) for RCRA 8 Metals** will be used for analysis of the following for waste disposal (Analyze soil and remediation waste samples using a laboratory recognized by EPA pursuant to Section 405(b) of TSCA as being capable of performing analyses for lead compounds in soil and paint using EPA Method 1311):

1. **Remediation/Demolition wastes**
2. **Lead Contaminated Soil for disposal**

C. **Synthetic Precipitation Leachate Procedure** will be used for soils intended for reuse to determine total leachable Lead and compared to the Maximum Contaminant Level (MCL) and total lead compared to the appropriate critical residential (500ppm) or commercial/industrial Protective Concentration Level (PCL) (1600ppm), using the Texas Risk Reduction Program (TRRP) guidelines for reuse. (Note: The TRRP guidelines for soil reuse can be found at 30TAC350.36 http://info.sos.state.tx.us/pls/pub/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=30&pt=1&ch=350&rl=36

1. Contaminated Soil intended for reuse

1.4 VISUAL INSPECTION

A. Work of this section will not begin until the visual inspection described in Section 01935 Project Decontamination – Lead Containing Materials has been completed and certified by the Owner's Representative.

1.5 CLEARANCE CRITERIA

A. **On-site Hand/Manual Demolition and Remediation Work Areas**: Wipe sampling, clearance will be conducted on two (2) surfaces from each side of the structure or component. One (1) wipe sample from the horizontal surfaces in the immediate work area beneath the affected equipment/component and one (1) wipe sample outside the immediate work area.

B. **On site paint removal, and interim controls**: Clearance will be conducted by wipe sampling on three surfaces in each room or area. One each from the floor, remediated surface, window sill and window trough, as applicable.

C. **Wipe Sampling Clearance:** Decontamination is complete when every sample is at or below the following levels. If clearance levels are not satisfactory, the decontamination is incomplete and re-cleaning per Section 01935 - Project Decontamination – Lead Containing Materials is required at no additional cost to the Owner.

1. Floors/carpets:	<40 micrograms per square foot ($\mu g/ft^2$)
2. Window sills:	<250 micrograms per square foot ($\mu g/ft^2$)
3. Window troughs:	< 400 micrograms per square foot ($\mu g/ft^2$)
4. Exterior:	< 400 micrograms per square foot ($\mu g/ft^2$)

D. **Soil Sampling Clearance for lead (Pb) containing paint remediation:** Lead paint remediation is complete when every sample is at or below the following levels. If clearance levels are not satisfactory, the remediation is incomplete and additional remediation per Section 01937 Remediation of Lead Contaminated Soil is required at no additional cost to the Owner.

1. **Soil (bare soil):** < 400 parts per million (ppm)

PART 2 - PRODUCT (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 01926

SECTION 01927 - REMEDIATION FACILITIES AND TEMPORARY CONTROLS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF REQUIREMENTS

A. **General:** Provide temporary connection to existing building utilities or provide temporary facilities as required herein or as necessary to carry out the work.

1.3 SUBMITTALS

A. **Before the Start of Work:** Submit the following to the Owner's Representative for review. Begin no work until these submittals are returned with Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use or final-but-restricted use.

B. **Scaffolding:** Submit list of rolling and fixed scaffolding intended for use on the project. Submit sufficient detail to indicate compliance with applicable worker safety regulations or other requirements.

C. **Hot water heater:** Submit manufacturer's name, model number, size in gallons, heating capacity, power requirements.

D. **Decontamination Unit Sub-panel:** Submit product data.

E. **Ground Fault Circuit Interrupters (GFCI):** Submit product data.

F. **Temporary Heating Units:** Provide product data.

G. **Temporary Cooling Units:** Provide product data and installation instructions.

H. **Self-contained Toilet Units**: Provide product data and name of sub-contractor used for servicing self contained toilets. Submit method to be used for servicing.

I. **First Aid Supplies:** Provide list of contents of first aid kit. Submit in form of checklist.

J. **Fire Extinguishers:** Provide product data. Submit schedule indicating location at job site.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. **General:** Provide new or used materials and equipment that are undamaged and in serviceable condition. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

2.2 SCAFFOLDING

A. Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. Scaffolding may be of suspension type; or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.

B. Equip rungs of all metal ladders, etc. with an abrasive non-slip surface.

C. Provide a nonskid surface on all scaffold surfaces subject to foot traffic.

2.3 WATER SERVICE

A. **Temporary Water Service Connection:** All connections to the Owner's water system shall include backflow protection. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.

B. **Water Hoses:** Employ heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each work area and to each Decontamination Unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.

C. **Water Heater:** Provide UL rated 40-gallon electric water heater to supply hot water for the Decontamination Unit shower. Activate from 30-amp circuit breaker located within the Decontamination Unit sub-panel. Provide with relief valve compatible with water heater operation; pipe relief valve down to drip pan on floor with type L copper. Drip pans shall consist of a 12" X 12" X 6" (30 cm x 30 cm x 15 cm) deep pan, made of 19 gauge galvanized steel, with handles. A 3-quart (3 L) kitchen saucepan may be substituted for this purpose. Drip pan shall be securely fastened to the water heater with bailing wire or similar material. Wiring of the water heater shall be in compliance with NEMA, NECA, and UL standards.

D. **Hot Water:** ***may not be secured*** from the building hot water system.

2.4 ELECTRICAL SERVICE

A. **General:** Comply with applicable NEMA, NECA and UL standards and governing regulations for materials and layout of temporary electric service. Provide equipment that is compatible with existing electrical characteristics and available power. If existing power is either incompatible or inadequate for performance of the Work, provide auxiliary generators(s) located outside of the building.

B. **Temporary Power:** Provide service to Decontamination Unit subpanel with minimum 60 amp, 2-pole circuit breaker or fused disconnect connected to the buildings main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.

C. **Voltage Differences:** Provide identification warning signs at power outlets that are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.

D. **Ground Fault Protection:** Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate GFCI's exterior to Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in work area, decontamination units, exterior, or as otherwise required by national electrical code, OSHA or other authority. Locate in panel exterior to Work Area.

2.5 ELECTRICAL EQUIPMENT

A. **Electrical Power Cords:** Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas of work.

B. **Lamps and Light Fixtures:** Provide sealed quartz halogen construction lights, general service incandescent lamps or fluorescent lamps of wattage indicated or required for adequate illumination as required by the work or this section. Protect lamps with guard cages where fixtures are exposed to breakage by construction operations. Provide lighting with a secure base to insure that they will not be knocked over. Keep lights away from combustible materials.

2.6 TEMPORARY HEAT

A. **Heating Units:** Provide temporary heating units that have been tested and labeled by UL, FM or another recognized trade association related to the fuel being consumed. Use steam or hot water radiant heat where available, and where not available use electric resistant fin radiation supplied from a branch circuit with ground fault circuit interrupter.

2.7 TEMPORARY COOLING

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

2.8 SELF-CONTAINED TOILETS

A. **Self-contained Toilet Units:** Provide single-occupant self-contained toilet units of the chemical type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar non-absorbent material.

2.9 FIRST AID

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

2.10 FIRE EXTINGUISHERS

A. **Fire Extinguishers:** Provide Type "A" fire extinguishers for temporary offices and similar spaces where there is minimal danger of electrical or grease-oil-flammable liquid fires. In other locations provide type "ABC" dry chemical extinguishers, or a combination of several extinguishers of NFPA recommended types for the exposures in each case.

PART 3 - EXECUTION

3.1 SCAFFOLDING

A. Require that a Competent Person supervise the erection, movement, and dismantling of scaffolding in accordance with OSHA 29 CFR 1926.451.

B. During the erection and/or moving of scaffolding, care must be exercised so that the polyethylene floor covering is not damaged.

C. Clean as necessary debris from non-slip surfaces.

D. At the completion of remediation work clean all construction aids within the work area, wrap in one layer of 6-mil polyethylene sheet and seal before removal from the work area.

3.2 GENERAL INSTALLATION

A. **General:** Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

1. Require that tradesmen accomplishing this work be licensed as required by local authority for the work performed.

B. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the project.

3.3 WATER SERVICE

A. **General:** Water connection (without charge) to Owner's existing potable water system is limited to one 3/4" pipe-size connection, and a maximum flow of 10 gpm cold water supply. Install using vacuum breakers or other backflow preventer as required by local authority.

B. Maintain hose connections and outlet valves in leak-proof condition. Where spillage or leakage might damage finish work below an outlet, provide a drip pan of suitable size to minimize the possibility of water damage. Drain water promptly from pans as it accumulates.

3.4 TEMPORARY POWER - REGULATED AREAS

A. **General:** Use existing power available in Work Area.

B. **Circuit Protection:** Protect each tool or extension cord with a ground fault circuit interrupter (GFCI) of proper size. GFCI can be type that plugs into existing duplex outlets. Insure that outlet is properly grounded before installation of GFCI.

3.5 ELECTRICAL SERVICE

A. **General:** Provide a weatherproof, grounded temporary electric power service and distribution system of sufficient size, capacity, and power characteristics to accommodate performance of work during the construction period. Install temporary lighting adequate to provide sufficient illumination for safe work and traffic conditions in every area of work.

B. **Lockout:** Lockout all existing power to or through the work area as described below. Unless specifically noted otherwise existing power and lighting circuits to the work area are not to be used. All power and lighting to the Work Area is to be provided from temporary electrical panel described below.

1. Lockout power to work area by switching off all breakers serving power or lighting circuits in work area. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Lock panel and have all keys under control of Remediation Contractor's superintendent or owner's designated representative.

2. Lockout power to circuits running through work area wherever possible by switching off all breakers serving these circuits. Label breakers with tape over breaker with notation "DANGER circuit being worked on". Sign and date danger tag. Lock panel and supply keys to Remediation Contractor, Owner and Designer. If circuits cannot be shut down for any reason, label at 4'-0" on center with tags reading, "DANGER live electric circuit. Electrocution hazard."

C. **Temporary Electrical Panel:** Provide temporary electrical panel sized and equipped to accommodate all electrical equipment and lighting required by the work. Connect temporary panel to existing building electrical. Protect with circuit breaker or fused disconnect. Locate temporary panel as directed by Owner or Owner's Representative. Power may be obtained from adjacent apartments if authorized in writing by the Owner.

D. **Power Distribution System:** Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead and rise vertically where wiring will be least exposed to damage from construction operations.

E. **Circuit Protection:** Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel. Do not use outlet type GFCI devices.

F. **Temporary Wiring:** in the work area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide liquid tight enclosures or boxes for wiring devices.

G. **Number of Branch Circuits:** Provide sufficient branch circuits as required by the work. All branch circuits are to originate at temporary electrical panel. At minimum provide the following:

1. For power tools and task lighting, provide one temporary 4-gang outlet in the following locations. Provide a separate 110-120 Volt, 20 Amp circuit for each 4-gang outlet (4 outlets per circuit).

   a. One outlet in the work area for each 2500 square feet of work area.

   b. One outlet at each decontamination unit, located in equipment room.

2. 110-120 volt 20 amp branch circuits with 4-gang outlet for Owner's exclusive use while conducting air sampling during the work as follows:

   a. One in each work area.

   b. One at clean side of each Decontamination Unit.

3.6 TEMPORARY LIGHTING - REGULATED AREAS

A. **General:** Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

B. **Circuit Protection:** Protect each light with a ground fault circuit interrupter (GFCI) of proper size. GFCI can be type that plugs into existing duplex outlets. Insure that outlet is properly grounded before installation of GFCI.

3.7 TEMPORARY LIGHTING - CONTAINMENT

A. **Lockout:** Lockout all existing power to lighting circuits in work area. Unless specifically noted otherwise existing lighting circuits to the work area are not to be used. All lighting to the Work Area is to be provided from temporary electrical panel described above.

B. **Lighting levels:** Provide the following or equivalent where natural lighting or existing building lighting does not meet the required light level:

1. One 200-watt incandescent lamp per 1000 square feet of floor area, uniformly distributed, for general construction lighting, or equivalent illumination of a similar nature. In corridors and similar traffic areas, provide one 100-watt incandescent lamp every 50 feet. In stairways and at ladder runs, provide one lamp minimum per story, located to illuminate each landing and flight. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.

2. Provide lighting in areas where work is being performed as required to supply a 100 foot candle minimum light level.

3. Provide lighting in any area being subjected to a visual inspection as required to supply a 100 foot candle minimum light level.

4. Provide lighting in the Decontamination Unit as required to supply a 50 foot candle minimum light level.

C. **Number of Lighting Circuits:** Provide sufficient lighting circuits as required by the work. All lighting circuits are to originate at temporary electrical panel.

D. **Circuit Protection:** Protect each circuit with a ground fault circuit interrupter (GFCI) of proper size located in the temporary panel.

3.8 TEMPORARY HEAT

A. **General:** Provide temporary heat where indicated or needed for performance of the Work.

B. **Temperature:** Maintain a minimum temperature of 70 degrees F. where finished work has been installed.

C. **Temperature in shower:** Maintain a minimum temperature of 75 degrees F. in

D. **Temperature:** Maintain a minimum temperature of 70 degrees F. in the Work Area at all times that work is going on. At all other times and at completion of removal work, but before start of reconstruction work, maintain a minimum temperature of 50 degrees F.

E. **Temperature:** Maintain a minimum temperature of 50 degrees F. in the Work Area at all times during and after removal work.

3.9 TEMPORARY COOLING

A. **Required Cooling:** Provide units sufficient to supply 20,000 BTU's of cooling per 8,000 cubic feet of work area.

3.10 SANITARY FACILITIES

A. **Toilets:** *Use of the Owner's existing toilet facilities will be not permitted.* Provide one self-contained chemical toilet unit in the Work Area for each 30 workers. Facilities shall be maintained throughout the Work. At the end of the job, facilities shall be decontaminated in accordance with these specifications.

3.11 FIRE EXTINGUISHERS

A. **Fire Extinguishers:** Comply with the applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers". Locate the appropriate class of fire extinguishers where they are most convenient and effective for their intended purpose.

3.12 STORAGE FACILITIES

A. **Storage:** The Remediation Contractor shall provide a temporary construction trailer as a storage area for tools, equipment and supplies. Waste generated during abatement shall be stored in a construction trailer or other secure location in addition to above.

END OF SECTION - 01927

SECTION 01928 EXTERIOR REGULATED AREAS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.01 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.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. **Remediation Facilities & Temporary Controls:** is specified in Section 01927.

B. **Worker Protection:** is specified in Section 01931.

C. **Respiratory Protection:** is specified in Section 01932.

1.03 DESCRIPTION OF WORK

A. Work of this section consists of preparing a Regulated Area for exterior work delineated of the following specification sections:

1. **Section 01920** Summary of Work – Lead (Pb) Containing Materials
2. **Section 01937** Remediation of Lead (Pb) Contaminated Soil

PART 2 - PRODUCTS

2.01 HEPA Filtered Vacuum Cleaners

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

2.03 Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

2.04 Plastic Sheeting: Single 6-mil reinforced polyethylene sheeting in the largest sheet size possible to minimize seams.

2.05 Barricade Fence: Standard safety fencing.

PART 3 - EXECUTION

3.01 SECURING WORK AREA

A. Secure work area from access by occupants, staff or users of the building and general public. However, the Contractor shall provide access to the Owner and Owner's Representative.

3.02 DEMARCATION OF REGULATED AREA

A. Demarcate each exterior Regulated Area with a sheet plastic drop sheet as described below.

B. At a minimum, standard orange safety fencing shall be utilized along the entire perimeter of the work area. Provide barrier warning tape at perimeter with the following legend "Caution Lead Hazard - Do not enter work area unless authorized." Barricade fence shall be securely fastened and no closer than twelve-(12) feet (12') (3.66m) radius from the work.

3.03 EXTERIOR REMEDIATION GENERAL PROCEDURES

A. The following precautions and procedures have application to the work of this section. Workers must exercise caution to avoid the release of lead (Pb) dust into the air and to contain lead (Pb) dust and debris on drop sheet.

B. Before start of work, comply with requirement for Worker Protection in Section 01931 and Respiratory Protection in Section 01932.

C. Do not allow eating, drinking, smoking, chewing tobacco or gum, or applying cosmetics in the regulated area.

D. Provide barricade fencing and signage. Maintain egress from exits.

E. The CONTRACTOR shall use plastic sheeting at least 6 mil thick for lining of all trucks, transport vehicles, soil stockpiles, and roll-off boxes.

F. Plastic sheeting shall be used and/or applied in a manner to prevent migration of soils and contaminants from soils. Soil stockpiles must be placed on, and covered by, plastic sheeting. Under no circumstances will leakage of fluids from soil stockpiles, roll-off boxes or transport trucks be allowed.

G. Erect vertical shrouds or suspend work if constant wind speed exceeds 15 mph or there is visible movement of debris beyond ground sheeting. Do not initiate work activities if constant wind speed is above 15 mph.

H. On a daily basis, collect dust and debris by HEPA vacuuming the horizontal surfaces or by wet sweeping. On a daily basis, any remaining debris and/or building structure shall be encapsulated prior to leaving the work site.

I. On a daily basis and during final cleanup, visually examine the immediate area to ensure that no debris has escaped containment. Wet sweep or rake up any debris found and place in 6-mil disposal bags or in poly-lined dumpsters. Securely store with other waste.

J. Suspend work activities during inclement weather; including but not limited to high wind, rain, snow ice, and hail.

END OF SECTION - 01928

SECTION 01929 - WORK AREA CONTAINMENT – LEAD CONTAINING MATERIALS

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 RELATED WORK SPECIFIED ELSEWHERE

A. **Temporary Facilities:** is specified in Section 01927.

B. **Worker Protection**: is specified in Section 01931.

C. **Respiratory Protection**: is specified in Section 01932.

D. **Exterior Abatement:** is specified in Section 01928.

1.3 DESCRIPTION OF WORK

A. Work of this section consists of preparing a work area for interior work of the following specification sections.

1. **Section 01935** Project Decontamination – Lead Containing Materials
2. **Section 01936** Removal of Lead Containing Material Substrates
3. **Section 01939** Cleaning and Decontamination – Lead Containing Materials
4. **Section 01943** Carpentry and Trim Work - Lead Containing Materials
5. **Section 01948** Chemical Stripping of Lead Containing Materials
6. **Section 01949** Mechanical Removal of Lead Containing Materials
7. **Section 01950** Surface Preparation - Paint Stabilization - Lead Containing Materials
8. **Section 01951** Painting - Lead Containing Materials

PART 2 - PRODUCTS

2.1 **HEPA Filtered Vacuum Cleaners ;** Use only industrial Quality Devices.

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

2.3 **Wet Detergent Wash:** Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

2.4 **Plastic Sheet:** A single polyethylene film in the largest sheet size possible to minimize seams, 6-mils thick.

PART 3 - EXECUTION

3.1 SECURING WORK AREA

A. Secure work area from access by public, occupants, staff or users of the building. Accomplish this where possible, by locking doors, windows, or other means of access to the area.

3.2 DEMARCATION OF WORK AREA:

A. Demarcate each Work Area as described below.

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

WARNING

LEAD WORK AREA

POISON

NO SMOKING OR EATING

3.3 SCHEDULING

A. Work may be carried out during normal working hours in those areas that can be completely secured by lockable doors from access by building occupants, the public, and staff. Isolate the work area and contiguous areas so that only trained workers can enter and exit through a controlled entrance. **Owner's representative will review any change in building exiting to insure it does not violate local building codes or the ANSI Life Safety Code.**

3.4 INTERIOR REMEDIATION 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 01931, and Respiratory Protection in section 01932.

2. Do not allow eating, drinking, smoking, chewing tobacco or gum, applying cosmetics or cell phone use in the Work Area

3. Shut down any air handling equipment bringing air into or out of the Work Area.

4. 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. Except for egress to change room, seal all openings, doorways, supply and exhaust vents, and convectors within the work area with 6-mil polyethylene sheeting secured and completely sealed with duct tape. Cover all cabinetry to remain with one (1) sheet of 6-mil polyethylene sheeting. Seal windows if not part of hazard reduction. Replace broken glass or cover window openings with 1/2" (13mm) CDX plywood.

8. Provide an approximately 3'-0" by 3'-0" (1m x 1m) Change Room, with additional space as required for storage, attached to work area. 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 3.2.

12. 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 01938 Disposal of Waste Materials – Lead Containing Materials.

Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

13. Complete requirements of the following:

a. **Section 01931** Worker Protection – Lead Containing Materials

b. **Section 01932** Respiratory Protection - Lead Containing Materials

14. At end of work shift, remove any paint chips, dust and debris which collects on the sheeting either by using a HEPA vacuum or by spraying with wet wash solution and wet wiping, collect debris with wet paper towels, place in disposal bag while still wet, and clean surface of plastic sheet with wet paper towels. Change **top layer** of floor polyethylene daily and replace with new, clean 6-mil polyethylene sheeting.

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.

c. Shower facilities to be used by all workers.

16. Perform a thorough cleanup of the entire work area daily during active Hazard Reduction Activities.

a. **Large Debris**: Large debris (e.g. doors, trim, casing, etc.) shall be wrapped in 6-mil polyethylene sheeting and moved to the area designated for waste storage or a lockable trailer or dumpster.

b. **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 moving to the next work area in the same secured area, worker on the drop sheet must don clean foot covers, placing each foot, in turn, off the sheet as the foot cover is put on. Remove clean foot covers at the next Work Area while standing on the sheet. Dispose of the used foot covers at completion of work in that area. Do not reuse foot covers to move off the sheet.

19. If workday is complete or if next work area is in another secured area: Follow decontamination procedures in Section 01931 - Worker Protection.

END OF SECTION - 01929

SECTION 01931 WORKER PROTECTION – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

This section describes the equipment and procedures required for protecting workers against lead (Pb) exposure or contamination and other potential workplace hazards.

Prior to commencing all work, all workers shall be instructed in all aspects of personnel protection, work procedures, emergency evacuation procedures and use of equipment including procedures unique to this project. Respiratory protection shall meet the requirements of OSHA as presented in 29 CFR 1910.134 titled "Respiratory Protection" and 29 CFR 1926.62 titled "Lead in Construction" (and conformant with OSHA Lead(Pb) work classifications as delineated in part 1.10 of Section 01931).The protection factors shown in 29 CFR 1926.62 shall be used for work under this contract. The contractor shall select respirators from among those jointly approved as being acceptable for protection by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) under the provisions of 30 CFR Part 11. Contractor shall have adequate supply of HEPA filter elements or other necessary filter elements and spare parts on site for respirators in use. The contractor shall provide information to assure that the above respiratory protection is sufficient in accordance with 29 CFR 1926.62. In addition, the contractor's personnel shall wear required safety equipment including eye protection and appropriate gloves during any encapsulation and demolition activities. Contractor shall provide respirators and all necessary maintenance materials at no cost to the employees.

1.3 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 sections are brought to the Remediation 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.

1.4 RELATED WORK SPECIFIED ELSEWHERE

A. **Respiratory Protection**: is specified in Section 01932 – Respiratory Protection – Lead Containing Materials.

1.5 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.

1.6 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 (Pb) and breathing or ingesting lead (Pb) 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 (Pb)
3. Health effects associated with lead (Pb) exposure
4. Medical removal protection program
5. The importance of good personal hygiene
6. Nature of operations that could result in exposure to lead (Pb)
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 (Pb) 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. **Texas Department of State Health Services Certification/Licensing Requirements:** Training by a Texas Department of State Health Services Certified training provider 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 24 hours of EPA training, with a minimum of 8 hours devoted to hands-on training

   b. Instruction in regulatory background; Federal, state and local

2. **For supervisors:**

   a. A minimum of 32 hours of EPA training, with a minimum of 8 hours devoted to hands-on training

   b. Instruction in legal insurance issues

   c. Development of pre-abatement 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

l. Recordkeeping

In addition, all Contractor's personnel shall hold valid, current and appropriate Texas Department of State Health Services (DSHS) Lead(Pb) licensing.

1.7 MEDICAL SURVEILLANCE

A. Provide full medical examinations for all workers performing Lead (Pb) abatement at first use of air purifying respirators and for each worker exposed to lead (Pb) for more than thirty (30) days a year and/or who have blood lead (Pb) levels over 25 micrograms/deciliter. Provide initial medical examinations for each worker exposed to lead (Pb) for more than one (1) day per year. Provide medical examination for any employee who has signs and symptoms of lead (Pb) 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 (Pb) 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

C. The medical evaluation must be provided prior to the start of the lead (Pb) hazard reduction project or assignment requiring the use of air purifying respirators.

D. Blood testing (blood lead (Pb) and zinc protoporphyrin) shall be performed prior to Start of Work and at least every two (2) months during the first six (6) months of the project and every two (2) months thereafter. ***An additional blood test shall be performed at the completion of the project*** and upon termination of employment.

The employer must make available the following:

1. Biological monitoring for blood lead (Pb) level and zinc protoporphyrin level at least every two (2) months during the first six months and every two (2) months thereafter.

2. When an employee's blood lead (Pb) level is at or above 40 µg/dl, biological monitoring at least every two (2) months until two (2) consecutive blood lead (Pb) level results are below 40 µg/dl.

3. Monthly blood lead (Pb) level testing during removal period or any employee medically removed due to an elevated blood lead (Pb) level.

4. When an employee's blood lead (Pb) level meet the criterion for medical removal (at or above 50 µg/dl), follow-up blood testing within two (2) weeks.

1.8 MEDICAL REMOVAL

A. Employers must remove employees with lead (Pb) 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 (Pb) level at or above 50 µg/dl; and

2. A final medical determination indicates a detectable medical condition that increases health risks from lead (Pb) exposure.

1.9 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 (Pb) at or below the Permissible Exposure Limit (PEL). This program must include:

1. Description of activities that produce lead (Pb) 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 (Pb) exposure.

6. Specific work practice procedures which will be employed on the project.

7. A schedule 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 (Pb) project.

1.10 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 (Pb) 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 (Pb) (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 (Pb) 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 $\mu g/m^3$ - 500 $\mu g/m^3$ until exposure assessment proves otherwise. Minimum required respirator is half-face dual cartridge respirator with high efficiency filters. 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 $\mu g/m^3$ - 2500 $\mu g/m^3$ until exposure assessment proves otherwise. Minimum required respirator is full face powered air purifying respirators (PAPRs) with high efficiency respirators. Examples include:

1. Using lead (Pb) containing mortar
2. Burning lead (Pb)
3. Rivet busting on lead (Pb) 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 $\mu g/m^3$ until exposure assessment proves otherwise. Minimum required respirator is pressure demand, full face supplied air respirators. 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 (Pb) levels equal to or greater than 30 $\mu g/m^3$.

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 01932 Respiratory Protection – Lead Containing Materials.

1.11 SUBMITTALS

A. **Before Start of Work:** Submit the following to the Owner's Representative for review. **Do not start work until the submittals listed below are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use;**

1. **Certifications/Licenses:** Submit evidence that all workers and supervisors have been trained and accredited, then certified/licensed by Texas Department of State Health Services.

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. **Training Program:** Submit a course outline of the worker and supervisor training courses. Include date and time course was given, name and title of teacher.

4. **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. Physician's Written Opinion from examining physician including at a minimum the following:

i. Whether worker has any detected medical conditions that would

place the worker at an increased risk of material health impairment from lead (Pb) exposure.

ii. Any recommended limitations on the worker or on the use of personal protective equipment such as respirators.

iii. Results of blood lead (Pb) determinations and any actions taken as a result of recommendations.

iv. 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 specified for the project, and is able to work safely in an environment capable of producing heat stress in the worker.

e. Compliance Program: Submit program in compliance with 1926.62.

f. Exposure Assessment: Submit assessment in compliance with 1926.62.

g. Results of biological monitoring including blood testing (blood lead (Pb) level and zinc protoporphyrin level)

h. Notarized Certifications: Submit certification signed by an officer of the contracting firm and notarized that exposure assessment measurements, medical surveillance, and worker training records are being kept as required in this specification.

PART 2 - EQUIPMENT

2.1 PROTECTIVE CLOTHING:

A. **Coveralls:** Provide disposable full-body coveralls and disposable head covers, and require that all workers in the Work Area wear them. 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. **Shoe Covers**: Provide disposable shoe covers and require that all workers in the Work Area wear them. Shoe covers must be replaced each time a worker leaves the work area. Shoe covers are disposed as clothing waste in the equipment section of the Change Room.

C. **Boots**: Provide work boots with non-skid soles, and where required by OSHA, foot protectives, 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 (Pb) 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.

D. **Hard Hats:** Provide head protection (hard hats) as required by OSHA for all workers, and provide 4 spares for use by Owner and Owner's Representative. Require hard hats to be worn at all times that work is in progress that may potentially cause head injury. Provide hard hats of type with plastic strap type suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean and decontaminate hats before removing them from Work Area at the end of the project.

E. **Goggles and Face Shields:** Provide eye and face protection (goggles or face shields) as required by OSHA for all workers involved in scraping, spraying, stripping or any other activity which may potentially cause eye or face injury. Thoroughly clean and decontaminate goggles or face shields before removing them from Work Area at the end of the project.

F. **Gloves:** Provide work gloves to all workers and require that they be worn at all times in the Work Area. Chemical resistant gloves must be provided when using chemical strippers to remove lead (Pb) based paint. 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.

2.2 ADDITIONAL PROTECTIVE EQUIPMENT:

A. Respirators, disposable coveralls, head covers, and footwear covers shall be provided by the Remediation Contractor for the Owner, Owner's Representative, and other authorized representatives who may inspect the job site.

2.3 SHOWER FACILITIES

A. Provide hand and face washing facilities to be used by all workers potentially exposed to any lead (Pb) containing dusts.

B. Provide shower facilities to be used by all workers when air sampling for any work activity shows employee exposure above the PEL and as required by OSHA regulations.

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 through at least a 5.0 micron filter and dispose of all filtered water and used filters in accordance with Section 01938 Disposal of Waste Materials – Lead(Pb) Containing Materials.

2. Supply a sufficient quantity of soap and towels for the workers and authorized visitors.

2.4 EYEWASH STATION

A. Where the eyes of employees may be exposed to lead (Pb) containing dusts or injurious corrosive materials, suitable and sufficient facilities for flushing of the eyes

shall be provided within the work area for immediate emergency use.

PART 3 - EXECUTION

3.1 GENERAL:

A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. The following procedures are minimums to be adhered to regardless of lead (Pb) 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 abatement 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.

3.2 DECONTAMINATION PROCEDURES:

A. Require all workers to adhere to the following personal decontamination procedures whenever they leave the Work Area:

1. **Air Purifying Negative Pressure Respirators:** Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a half or full face cartridge type respirator:

   a. 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:

      i. HEPA vacuum heavily contaminated protective work clothing.

      ii. 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.

   b. Remove respirator and set aside.

   c. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.

   d. Remove respirator cartridges from face piece and either seal with duct tape or discard.

   e. Carefully wash face piece of respirator inside and out.

   f. Thoroughly wash hands with soap and water.

2. **Powered Air Purifying Respirators (PAPR):** Require that all workers use the following decontamination procedure as a minimum requirement whenever leaving the Work Area with a PAPR:

a. 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 (Pb) dust. The following procedure is required as a minimum:

i. HEPA vacuum heavily contaminated protective work clothing.

ii. 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 (Pb) dust.

b. Remove respirator; cap filter cartridges; shut blower unit off and set aside.

c. Thoroughly wash hands and face with soap and water. If shower facilities are available, proceed to shower and shower completely with soap and water.

d. Carefully wash face piece of respirator inside and out. Wet wipe blower unit, hose and battery pack. Do not allow battery pack terminals to get wet. Do not remove respiratory cartridges unless wet. If wet, remove respirator cartridges from blower unit and discard.

e. Thoroughly wash hands with soap and water.

B. Within Work Area:

1. Require that workers DO NOT eat, drink, smoke, chew tobacco or gum, use a cell phone or apply cosmetics in the Work Area. To eat, chew, drink, use a cell phone or smoke, workers shall follow the procedure described above before entering the Non-Work Areas of the building or exterior.

3.3 CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT:

A. Following this section is a Certificate of Worker Training. After each worker has been included in the Remediation Contractor's Respiratory Protection Program, completed the training program and medical examination, secure a fully executed copy of this form.

END OF SECTION - 01931

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME_____ DATE_____

PROJECT ADDRESS_____

REMEDIATION CONTRACTOR'S NAME_____

WORKING WITH LEAD (PB) CAN BE DANGEROUS. INHALING AND INGESTING LEAD (PB) DUST CAN CAUSE AN INCREASE IN BLOOD LEAD (PB) 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 the following are provided at no cost to you: 1) you are supplied with the proper respirator and trained in its use; 2) you are trained in safe work practices and in the use of the equipment found on the job; and 3) you receive a medical examination.

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 (Pb) and breathing and ingesting lead (Pb) 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 (Pb)
Health hazards associated with lead (Pb)
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 (Pb).

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 Remediation Contractor.

Signature_____ Social Security No_____

Printed Name_____ Witness_____

CERTIFICADO DE RECONOCIMIENTO PARA LOS TRABAJADORES

NOMBRE DEL PROYECTO _____ FECHA _____

DIRECCION DEL PROYECTO _____

NOMBRE DEL CONTRATISTA _____

TRABAJAR CON PLOMO PUEDE SER PELIGROSO. INHALAR O INGERIR POLVO DE PLOMO PUEDE CAUSAR UN INCREMENTO DEL NIVEL DE PLOMO EN LA SANGRE, LO CUAL PUEDE OCACIONAR EFECTOS ADVERSOS A LA SALUD, TALES COMO DANOS A LOS RINONES, ALTA PRESION SANGUINEA, O INFERTILIDAD.

El contrato del empleador con el Propietario del proyecto arriba mencionado, requiere que: (1) Ud. debe ser proveido con la mascarilla apropiada, y le van a entrenar para usarla; (2) Ud. debe de ser entrenado en las practicas para un trabajo seguro, y en el uso del equipo existente en el trabajo; y (3) Ud. debe recibir un examen medico. Estos elementos le deben de ser proporcionados a Ud. sin ningun costo.

PROTECCION RESPIRATORIA: Ud. debe de ser entrenado para el uso apropiado de mascarillas, y tambien debe de ser informado del tipo de mascarilla a usar en el proyecto arriba mencionado. A Ud. se le debe dar una copia del manual de la mascarilla, entregado por el empleador. Ud. debe de ser proveido, sin ningun costo, de esta mascarilla a usarse en el proyecto arriba mencionado.

CURSO DE ENTRENAMIENTO: Ud. debe de ser entrenado en los riesgos inherentes de manejar, inhalar y respirar el polvo de plomo, y en los procedimientos de trabajo apropiado, asi como en las medidas de proteccion personal y del area de trabajo. Los temas a cubrir en este curso deben de incluir lo siguiente:

Probables rutas de exposicion de plomo
Riesgos para la salud relacionados con el plomo
Proteccion respiratoria
Uso del equipo de proteccion
Practica de trabajo, incluyendo el entrenamiento para el trabajo
Procedimentos para desinfeccion personal
Consideraciones con respecto a salud y seguridad

EXAMEN MEDICO: Ud debe haber recibido un examen medico sin ningun costo, durante los ultimos 12 meses. Este examen debe de incluir: historia de salud, examen fisico, medicion de la presion sanguinea, examen de la funcion pulmonar, y muestra de sangre para el analisis del contenido de plomo.

Al firmar este documento, Ud. esta reconociendo que el Propietario del edificio para el cual Ud. va a trabajar, le a avisado de sus derechos de proteccion y entrenamiento relativo con su empleador, el Constratista.

Firma _____ No. de Seguro Social_____

Nombre_____ Testigo_____

SECTION 01932 RESPIRATORY PROTECTION - LEAD-BASED PAINT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK:

Unless the Contractor can provide an exposure assessment that reveals otherwise, the assumed minimum exposure for work under this contract shall be **at less** 50 $\mu g/m^3$ - 500 $\mu g/m^3$. Required respiratory protection as specified by OSHA and presented in 29 CFR 1910.134 titled "Respiratory Protection" and 29 CFR 1926.62 titled "Lead in Construction" shall be used. The protection factors shown in 29 CFR 1926.62 shall be used for work under this contract. In addition, the contractor's personnel shall wear eye protection during all encapsulation and demolition activities.

A. Instruct and train each worker involved in lead abatement or lead based paint hazard reduction 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 as specified for the lead levels encountered in the work place or as required for other toxic or oxygen deficient situations encountered.

1.3 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.

1. **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.

2. **ANSI** American National Standards Institute, American National Standard Practices for Respiratory Protection, ANSI Z88.2-1992.

3. **HUD** U.S. Department of Housing and Urban Development, Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing.

4. **NIOSH** National Institute for Occupational Safety and Health, Guide to Respiratory Protection, 1987, 87-116.

5. **MSHA** Mine Safety and Health Administration

1.4 SUBMITTALS

A. Before Start of Work, submit the following to the Owner's Representative for review. Do not begin work until these submittals are returned with the Owner's Representative's action stamp indicating that the submittal is returned for unrestricted use.

1. **Written Respiratory Protection Program:** Submit written respiratory protection program in accordance with the OSHA Respiratory Protection Standard 29 CFR 1926.103, 29 CFR 1910.134 and OSHA Lead Construction Standard 1926.62.

2. **Product Data:** Submit manufacturer's product information for each component used, including NIOSH and MSHA Certifications for each component in an assembly and/or for entire assembly.

3. **Respiratory Protection Schedule:** Submit level of respiratory protection intended for each operation required by the project. Submit this information on the "Respiratory Protection schedule" on the form included at the end of this Section.

4. **Historic Sampling Data:** Submit air sampling data from previous projects to substantiate selection of respiratory protection proposed. Data submitted shall include at least the following for each procedure required by the work

   a. Date of measurements

   b. Operation monitored

   c. Sampling and analytical methods used and evidence of their accuracy

   d. Number, duration, and results of samples taken

   e. Workers name, social security number and job classification

   f. Type of respirator worn by workers

   g. Type of material

   h. Control Methods

   i. Work Practices

j. Training and experience level of workers and supervisors

5. **Fit Test Documentation:** Submit fit test documentation for all worker and supervisory personnel.

PART 2 - PRODUCTS

2.1 AIR PURIFYING RESPIRATORS

A. **Respirator Bodies:** Provide half face or full face type respirators. Equip full face respirators with a nose cup or other anti-fogging device as would be appropriate for use in air temperatures less than 32 degrees Fahrenheit.

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 3 - EXECUTION

3.1 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 based paint or dust, until the area has met the requirements of Section 01935 Project Decontamination – Lead(Pb) Containing Materials or Section 01926 Project Clearance – Lead(Pb) Containing Materials.

D. Regardless of Airborne Lead Levels or Surface Dust Contamination: Require that the minimum level of respiratory protection used be negative pressure air purifying respirators with high efficiency filter cartridges.

E. Do not allow the use of single use, disposable, or quarter-face respirators for any purpose.

F. Due to the temperature expected to occur during paint removal with a heat gun some fumes are likely to be emitted during use. **Respiratory protection is required during the use of any heat gun or similar device.** Heat guns should not be operated in excess of 700 degrees Fahrenheit.

3.2 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.

3.3 PERMISSIBLE EXPOSURE LIMIT (PEL)

A. **Permissible Exposure Limit** (PEL-TWA) - 50 micrograms/cubic meter

B. **Action Level** (TWA) - 30 micrograms/cubic meter

3.4 TYPE OF RESPIRATORY PROTECTION REQUIRED

A. Respiratory Protection Factors as indicated in paragraph below are for information purposes only. Respiratory protection shall be as described in 3.1(D) above.

3.5 RESPIRATORY PROTECTION FACTOR:

Table I. - Respiratory Protection for Lead Aerosols

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

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 face piece air purifying respirator with high efficiency filters.{3} Tight fitting powered air purifying respirator with high efficiency filters.{3} Full face piece supplied air respirator operated in demand mode. 1/2 mask or full face piece supplied air respirator operated in a continuous flow mode. Full face piece 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 face piece 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 concentration	Full face piece SCBA operated in pressure demand or other positive-pressure mode.

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

{2} Full face piece 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.

3.6 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 - 01932

SECTION 01934 - PROJECT CLOSEOUT – LEAD CONTAINING MATERIALS

PART 1- GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of the Contract, and other Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS:

Definitions: Project closeout is the term used to describe certain collective project requirements indicating completion of the work that are to be fulfilled near the end of the contract time in preparation for final acceptance and occupancy of the work by the Owner, as well as final payment to the Contractor and the normal termination of the contract.

Specific requirements for individual units of work are included in the appropriate sections in Division 1.

Time of closeout is directly related to "Substantial Completion", therefore, the time of closeout may be either single time period for the entire work or a series of time periods for individual elements of the work that have been certified as substantially complete at different dates. This time variation, if any, shall be applicable to the other provisions of this section.

1.03 SUBSTANTIAL COMPLETION:

Inspection Procedures: Upon receipt of Contractor's request for inspection, the Owner's Representative will either proceed with inspection or advise Contractor of unfulfilled prerequisites.

Following initial inspection, Owner's Representative will either prepare the certificate of substantial completion, or will advise Contractor of work which must be performed before the certificate will be issued. The Owner's Representative will repeat the inspection when requested and when assured that the work has been substantially completed.

Results of the completed inspection will form the initial "punch-list" for final acceptance.

1.04 PREREQUISITES TO FINAL ACCEPTANCE:

General: Complete the following before requesting the Owner's Representative's final inspection for clearance of final acceptance, and final payment as required by the general conditions. List known exceptions, if any, in request:

Submit the payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

Submit an updated final statement accounting for final additional changes to the contract sum.

Submit a certified copy of the Owner's Representative's final punch-list of itemized work to be completed or corrected stating that each item has been completed or otherwise resolved for acceptance and has been endorsed and dated by the Owner's Representative and Owner.

Submit evidence of final continuing insurance coverage complying with insurance requirements.

Reinspection Procedure: The Owner's Representative will reinspect the work upon receipt of the Contractor's notice that the work, including punch-list items resulting from earlier inspections, has been completed except for these items whose completion has been delayed because of circumstances that are acceptable to the Owner's Representative.

Upon completion of reinspection, the Owner's Representative will either prepare a certificate of final acceptance or will advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

If necessary, the reinspection procedure will be repeated.

1.05 RECORD DOCUMENT SUBMITTALS:

General: Specific requirements for record documents are indicated in the individual sections of these specifications. Other requirements are indicated in the general conditions. General submittal requirements are indicated in "submittals" sections.

Do not use record documents for construction purposes. Protect from deterioration and loss in a secure fire-resistive location. Provide access to record documents for the Architect/Engineer's reference during normal working hours.

Note related change-order number where applicable.

Record Specifications: Maintain one complete copy of the project manual, including specifications and addenda, and one copy of other written construction documents such as change orders and similar modifications issued in printed form during construction. Mark these documents to show substantial variations in the actual work performed in comparison with the text of the specifications and modifications as issued. Give particular attention to substitutions, selection of options and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation. Note related record drawing information and product data where applicable.

Upon completion of the work, submit record specifications to the Owner's Representative for the Owner's records.

Record Sample Submittal: Immediately prior to date or dates of substantial completion, the Contractor will meet at the site with the Owner's Representative and the Owner's Personnel, if desired, to determine which, if any, of the submitted samples that have been maintained by the Contractor during progress of the work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's sample storage space.

Miscellaneous Record Submittals: Refer to other sections of these specifications for requirements of miscellaneous record-keeping and submittals in connection with the actual performance of the work. **Evidence of post-project biological medical monitoring of supervisory and worker personnel must be submitted prior to final application for payment.** Immediately prior to the date or dates of substantial completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Owner's Representative for the Owner's records.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 FINAL CLEANING:

General: Special cleaning requirements for specific units of work are included in the appropriate sections of Division 1. General cleaning during the regular progress of the work is required by the General Conditions and is included under Section 01927 - Remedation Facilities & Temporary Controls.

Removal of Protection: Except as otherwise indicated or requested by the Owner's Representative remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

Compliance's: Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile or other harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

Where extra materials of value remaining after completion of associated work have become the Owner's property, dispose of these to the Owner's best advantage as directed.

END OF SECTION 01934

SECTION 01935 - PROJECT DECONTAMINATION – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF REQUIREMENTS

A. **General:** Decontamination of the Work Area following Lead-Containing Paint Hazard Reduction.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Removal of Gross Debris is integral with the performance of Lead Hazard reduction work and as such is specified in the appropriate work section(s) of these specifications:

1. **Section 01936** Removal of Lead Painted Components
2. **Section 01943** Carpentry & Trim Work - Lead Containing Materials
3. **Section 01948** Chemical Stripping of Lead Containing Materials
4. **Section 01949** Mechanical Removal of Lead Containing Materials
5. **Section 01950** Surface Preparation and Paint Stabilization- Lead Containing Materials
6. **Section 01951** Painting - Lead Containing Materials

B. **Work Area Clearance:** Wipe sample testing and other requirements which must be met before release of Contractor and re-occupancy of the work area are specified in Section 01926 Project Clearance – Lead Containing Materials.

PART 2 - PRODUCTS

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

2.2 Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 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 Hazard Reduction 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 Hazard Reduction work, including:

1. Floor Sheeting and Critical barriers erected by work of Section 01929 Work Area Containment – Lead Containing Materials.

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.

3.2 START OF WORK

A. **Previous Work:** During completion of the Lead Hazard reduction 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.

3.3 PRELIMINARY FIRST CLEANING

A. **Preliminary Cleaning:** Clean tools, scaffolding, 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 if in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.

3.4 FINAL CLEANING

A. **HEPA Vacuum:** All surfaces in work area. Start at point farthest from main entrance and finish vacuuming back at that point. 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 minimum after each room. Filter all waste water or dispose of in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.

E. **Wiping Work Area**

1. The work area should be cleaned using a three (3) container method. Fill two (2) 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 (2) 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 (2) 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 Owner's Representative.

J. **Painting of substrates:** Perform painting/sealing of substrates at this time.

K. Perform final clearance sampling in accordance with sub-section 3.6 final clearance sampling.

3.5 EXTERIOR ABATEMENT DECONTAMINATION

A. **First Cleaning:** Carry out a first cleaning of all surfaces affected by the work including remaining sheeting, ladders, scaffolding and exterior of building in a ten feet (10') radius from the work by use of a High Efficiency Particulate Air (HEPA) filtered vacuum. Immediately following the first cleaning remove polyethylene sheeting and dispose of properly. Remove any remaining paint chips on soil or surrounding walkways, porches, etc.

B. **Final Cleaning:** Carry out a final cleaning of all surfaces in the same manner as the first cleaning. Comply with requirements of visual inspection.

3.6 FINAL CLEARANCE SAMPLING

A. **Wipe Sampling** by Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP): After the work area is found to be visually clean, wipe samples will be obtained and analyzed in accordance with the procedure set forth in Section 01926 Project Clearance – Lead Containing Materials.

1. If Release Criteria are not met, repeat HEPA vacuuming, wet wash, HEPA vacuuming until satisfactory clearance results are obtained.

2. If Release Criteria are met, remove work area isolation. Remove all equipment, materials from the site.

B. **Soil Sampling** by Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP): After the work area is found to be visually clean, soil samples will be obtained and analyzed in accordance with the procedure set forth in Section 01926 Project Clearance-Lead Containing Materials.

3.7 SUBSTANTIAL COMPLETION OF HAZARD REDUCTION:

A. Hazard Reduction Work is Substantially Complete upon meeting the requirements of this section, Section 01926 Project Clearance – Lead Containing Materials, including the submission of:

1. Certificate of Visual Inspection

2. Receipts Documenting proper disposal as required by Section 01938 Disposal of Waste Material – Lead Containing Materials.

3. Punch list detailing repairs to be made and incomplete items.

3.8 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 Owner's Representative. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

END OF SECTION - 01935

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section 01935 Project Decontamination – Lead Containing Materials, 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: (Signature_____ Date_____

(Print Name)_____

(Print Title)_____

OWNER'S REPRESENTATIVE CERTIFICATION

The Owner's Representative 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: (Signature_____ Date_____

(Print Name)_____

(Print Title)_____

WORK AREA

Location:

Room:

Hazard Reduction Performed:

SECTION 01936 - REMOVAL OF LEAD PAINTED COMPONENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 **Summary of Work**: Work of this section includes the manual demolition, removal, off site disposal and/or recycling of the following Lead containing paint coated components:

A. Painted building components

B. Interior and exterior painted wood components

C. Painted Metal and Mechanical components

D. Painted wrought iron railings, gutters, roofs

1.3. RELATED WORK SPECIFIED ELSEWHERE

Removal of Lead containing paint coated windows, related trim, cabinets and other millwork items are specified in Section 01943-Carpentry and Trim Work – Lead Containing Materials.

PART 2 - PRODUCTS

2.1 **DISPOSAL BAGS/PLASTIC SHEETING**: Provide 6-mil polyethylene disposal bags or wrap components to be disposed of in 6-mil polyethylene, sealed with duct tape.

2.2 **Wet Detergent Wash:** Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 BEFORE STARTING WORK OF THIS SECTION, COMPLETE THE FOLLOWING

A. **Section 01926** – Project Clearance – Lead Containing Materials

B. **Section 01927** –Remediation Facilities and Temporary Controls – Lead Containing Materials

C. **Section 01928** - Exterior Regulated Areas - – Lead Containing Materials

D. **Section 01929** - Work Area Containment - – Lead Containing Materials

E. **Section 01931** - Worker Protection - – Lead Containing Materials

F. **Section 01932 -** Respiratory Protection - – Lead Containing Materials

G. **Section 01935** -Project Decontamination – Lead Containing Materials

3.2 GENERAL

A. Place plastic drop cloth below area of work activities. Keep surface of drop cloth wetted and damp throughout the removal process. At the end of removal activities fold drop cloth to avoid loss of any surface debris and include in waste stream for disposal characterization. Work that will generate large amounts of dust may require additional plastic enclosures for dust control.

B. Remove component by first scoring paint at edges, corners etc. to reduce chipping of paint. Carefully remove, by wet scraping, any loose and flaking paint prior to removal of component in accordance with the following procedure:

1. Fine mist surface with wet wash detergent or water using plant mister or garden sprayer.

2. Carefully scrape loose and flaking material.

3. Clean up paint chips and flakes by wet sweeping or pick up with wet towels

C. Care shall be taken to avoid damage to adjacent areas during the removal of components. Dispose of any contaminated towels, rags, etc as lead containing waste.

D. Carefully remove the lead coated components to minimize the disturbance of the lead containing material and the generation of lead dust.

E. HEPA vacuum and/or wet wipe to remove all paint chips, debris and dust generated during the work. Do not allow dust or debris to accumulate. During work activities mist drop cloth surface to control any dust and debris.

F. Components that are removed with lead paint adhered shall be wrapped , labeled, characterized and disposed of in accordance with section 01938 - Disposal of Waste Materials – Lead Containing Materials.

G. Lead painted metal components shall be recycled in accordance with section 01938 – Disposal of Waste Materials- Lead Containing Materials

H. Interior removal of painted surfaces that generate excessive dust, i.e., gypboard walls, should be removed inside plastic containments to control resulting dust. Misting with water and HEPA filtered air devices may be used to control interior dust levels of subject containments.

I. Remove drop cloth and add to waste stream. Visually inspect the work area to confirm that no visible debris or dust remains. Conduct clearance sampling in occupied areas in conformance with section 01926 - Project Clearance- Lead Containing Materials

3.3 DAMAGES: Protect areas and equipment adjacent to components that are being

removed in order to avoid unnecessary decontamination or replacement from damage caused by this work. Damages to non-protected areas or from lack of care shall be decontaminated, repaired and/or replaced at the Contractor's expense.

END OF SECTION 01936

SECTION 01937 - REMEDIATION OF LEAD CONTAMINATED SOIL

PART 1 - GENERAL

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

1.02 Summary Of Work

The soil lead concentration of 400 parts per million (ppm) indicated below is a "screening level" not a cleanup goal. Screening levels are defined by EPA as a level of contamination above which there may be enough concern to warrant site specific study of risks. For bare soil above 400 ppm and up to 1,999, EPA recommends that some form of risk reduction must take place if there is child contact. At a minimum this may include moving child play areas or constructing barriers such as sod or other ground cover. Bare soil with lead content of 2,000 ppm and up to 4,999 ppm EPA recommends some manner of risk reduction with or without child contact. This can include soil removal, plantings and installation or brick pavers, etc. Sod is preferred in high traffic areas where the public cannot be controlled and creates an instant ground cover.

A. Bare soil with child contact, lead concentration - 400 PPM up to 1,999 PPM.

1. Install Sod over bare soil
2. Install six inches of ground cover. The non-permanent cover material shall be tested and confirmed to have a lead concentration less than 400 ppm.

B. Bare soil with or without child contact, lead concentration - 2,000 PPM up to 4,999PM.

1. Install sod over bare soil.
2. Install six inches of ground cover. The non-permanent cover material shall be tested and confirmed to have a lead concentration less than 400 ppm.
3. Remove soil to a depth of six (6) inches and replace with non–lead containing soils (contain <15 ppm Lead (Pb)) that have been tested for lead content.

C. Bare soil lead concentration greater than 5,000 PPM,

1. Remove soil to a depth of six (6) inches and replace with non–lead containing soils that have been tested for lead content (contain <15 ppm).
2. Install asphalt paving, any excavated soils will be characterized and disposed of in accordance with section 01938- Disposal of Waste Materials – Lead Containing Materials
3. Install concrete paving, any excavated soils will be characterized and disposed of in accordance with section 01938- Disposal of Waste Materials – Lead Containing Materials

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 SOIL REMOVAL

A. Prior to excavation activities the contractor needs to perform applicable utility coordination efforts.

B. Use hand held spray equipment to dampen soil. Do not over saturate and cause water to run-off to adjacent areas. Keep soils damp to avoid air borne dusts. Erect vertical shrouds or suspend work if constant wind speed exceeds 15 mph or if there is visible movement of debris beyond ground sheeting. Do not initiate work activities if constant wind speed is above 15 mph.

C. Remove soil starting at the point farthest from load out area. Excavation to a depth of six inches will take place within the area defined by the Owner's representative.

D. Load soil unto six mil reinforced polyethylene roll sheeting and cover with same or into polyethylene lined containers, trucks or dumpsters. Do not track through areas where soil has been removed. Cover temporary staged soil piles with polyethylene to protect from wind/rain and line transport containers, trucks or dumpsters with polyethylene prior for soil transport. Dispose of soil in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.

E. Proper protective measures will be taken to prevent human exposure to excavated soils. At the end of each shift or during winds which may disturb and spread soil contamination, cover contaminated sections of soil with 6-mil reinforced polyethylene sheeting.

F. Wash tools, and equipment that came in contact with contaminated soil. Collect debris and filter wash water. Dispose of in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.

3.02 EXCAVATION

A. The contractor shall make attempts to minimize the volume of soil intended for removal and disposal. The Owner's Representative shall conduct all sampling performed for the purpose of characterizing soils for off site disposal.

B. Any soils intended for disposal shall be evaluated by the consultant or owner's representative using the Toxicity Characteristic Leachate Procedure (TCLP) for RCRA 8 metals prior to removal from the site and subsequently disposed of in accordance with RCRA hazardous waste management regulations as required. TCLP sampling and analysis must be in accordance with section 01926- Project Clearance- Lead containing materials

C. If the excavation fills with water such that the CONTRACTOR cannot perform construction activities in accordance with the construction specifications, the OWNER shall determine, if the water is potentially contaminated with Lead(Pb). The CONTRACTOR shall collect water that is found to be potentially contaminated in a

clean temporary storage tank, filter and dispose of filtered water and filter in accordance with section 01926- Project Clearance- Lead containing materials

3.03 COLLECTION OF SAMPLES

A. The OWNER or OWNER'S REPRESENTATIVE will collect any required soil samples for confirmation/characterization .The OWNER shall pay for any testing undertaken for soil that is suspected of contamination due to existing conditions. The OWNER or OWNER'S REPRESENTATIVE will perform waste characterization (testing) of the waste soils and any filtered water, and the CONTRACTOR shall abide by the waste characterization decisions of the OWNER. Soils that are thought to be contaminated must remain in the staging area and protected from rainfall and contact by the CONTRACTOR until the OWNER determines how the soil is to be disposed of in accordance with Section 01938 –Disposal of Waste Materials– Lead containing Materials

3.04 CLEARANCE CRITERIA

A. Complete Soil Sampling in accordance with Section 01926 Project Clearance – Lead Containing Materials following soil removal.

1. If release criteria is not met, continue Soil Remediation from that point.

END OF SECTION 01937

SECTION 01938 DISPOSAL OF WASTE MATERIALS – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.01 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.

B. Section 01923 Codes, Regulations and Standards – Lead Containing Materials describes applicable federal, state and local regulations.

1.02 DESCRIPTION OF THE WORK

A. This section describes the disposal of Lead(Pb) containing or Lead(Pb contaminated waste materials. The contractor shall make attempts to minimize the volume of wastes intended for disposal. The Owner's Representative shall conduct all sampling performed for the purpose of characterizing all wastes requiring off site disposal. Disposal includes packaging of all waste materials. Disposal of all non-metal debris shall be accomplished by landfilling. All Lead (Pb) containing metal debris, if any, shall be transported to a recycling facility by the Remediation Contractor. The Remediation Contractor shall also provide adequate documentation (Chain of Custody) detailing the delivery of the materials to the reclamation facility and the acceptance of the material by the reclamation facility. The transporter and reclamation/salvaging facility shall have all applicable licenses, insurance, and permits necessary to perform the work required under this contract. .Approval by Owner is required prior to all disposal activities.

Disposal of all debris generated shall be accomplished by land filling. All Lead (Pb) contaminated debris this is generated shall be promptly placed into Department of Transportation (DOT) approved containers. As appropriate and in accordance with the waste classification, the waste containers shall be labeled as "lead (Pb) contaminated waste" and placarded with Universal Waste labels. The containers shall be securely stored on site until the Owner approves the waste disposal site then to an approved permitted landfill.

Testing of all debris shall be conducted prior to removal of materials from the work site. The Owner's Representative shall collect all samples for testing. The Remediation Contractor shall be responsible for any TCLP analyses charges obtained at the site for his specific use.

1.03 SUBMITTALS

A. Before Start of Work: Submit the following to the Owner's Representative for review. Contractor shall not start work until the following submittals are returned with Owner's Representative action stamp indicating that the submittal is returned for unrestricted use.

1. Contractor must ascertain that the facility 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 Representative.

PART 2 - PRODUCTS

2.01 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:"

B. For wrapped materials, provide stick-on labels.

PART 3 - EXECUTION

3.01 GENERAL

A. Contact DOT, EPA, TCEQ and other state and local authorities to determine lead (Pb) containing material disposal and waste transportation requirements. Disposal procedures must comply with the Resource Conservation and Recovery Act (RCRA) Subtitles C and D.

B. Testing of waste shall be performed to determine disposal requirements. Prior to disposal wastes must be evaluated for Toxicity, Corrosivity, Ignitibility and Reactivity per RCRA requirements. Most Lead containing building material wastes typically do not exhibit Reactivity traits. However, some wastes resulting from abatement projects using certain paint strippers that are either highly alkaline or acidic and/or contain solvents with low flash points (below 60 degrees centigrade) may be classified as hazardous. Waste Toxicity is measured by using the Toxicity Characteristic Leaching Procedure (TCLP)(40 CFR 261.24). Wastes that are above the Toxicity Characteristic threshold for Lead (5ppm Lead) are classified as hazardous wastes. The Owner's Representative shall verify that all waste has been properly segregated, containerized, and classified into the proper disposal categories.

C. Place all waste generated during the project in 6-mil disposal bags or wrap in 6-mil polyethylene sheeting, store in the designated storage area, enclosed dumpsters or trucks. Separate waste materials into the following categories and label all disposal bags and wrapped packages.

1. **Non-Hazardous Solid Waste:**

   a. *After thorough cleaning, any plastic sheeting and duct tape used during abatement*

   b. *Plaster*

2. **Hazardous Solid Waste** (as determined by testing)**:**

   a. *Paint chips, dusts and debris, if any*

   b. *Rags, sponges, mops, sandpaper, HEPA Vacuum filters and contents, respirator cartridges, protective clothing, shower water filter(s) and other materials used during abatement*

   c. *Painted Wood Components*

   d. *Soil*

3. **Hazardous Solid Waste to be Recycled:**

   a. *Metal debris and painted metal components*

4. **Hazardous Liquid Waste** (as determined by testing) :

   a. *Waste Water*
   b. *Caustic pastes*
   c. *Neutralizers*
   d. *Paints and solvents*

D. Properly store, label and secure waste at all times. Do not leave debris in the yard or in uncovered or unlocked trucks or dumpsters. Do not incinerate debris or use an unauthorized dumpster. Do not introduce lead (Pb)-contaminated water into storm or sanitary sewers. Do not permit recycling of non-metal building components coated with Lead-Based Paint.

E. All waste shall be handled, labeled, transported and disposed of according to local, city, state, and federal regulations. All drums shall be permanently marked as to specific contents and dated. In addition, each drum shall be marked with the standard EPA label, shown on the following page.

CAUTION
CONTAINS
LEAD

A toxic environmental contaminant requiring special handling and disposal in accordance with US Environmental Protection Agency Regulations 40 CFR 761 - For Disposal Information contact the nearest US EPA Office

In case of accident or spill call toll free the US Coast Guard National Response Center
800 424-8802
Also Contact:
Tel. No.:

3.02 DISPOSAL OF NON-HAZARDOUS SOLID WASTE (As determined by testing)

A. Materials are to remain in 6-mil disposal bags or wrapped in polyethylene sheeting. Label all packages. Substrates removed with paint in good condition which is adhered to the substrate may be placed directly in dumpsters then covered.

B. Transport wastes in covered or enclosed trucks or dumpsters.

3.03 DISPOSAL OF NON-HAZARDOUS LIQUID WASTE (As determined by testing)

A. Dispose of liquid waste by pouring into sanitary sewage system if permission is received from publicly owned treatment works facility (POTW). Do not dispose of liquid waste by pouring onto ground or into storm drain. If the liquid waste contains phosphates or other chemicals advise treatment facility of quantity of liquid and that it likely will contain phosphates.

B. Properly filtered shower water shall be disposed of as non-hazardous liquid waste. All filters shall be characterized and disposed of in accordance with all applicable regulations.

3.04 DISPOSAL OF HAZARDOUS LIQUID OR SOLID WASTES (As determined by testing)

A. Comply with RCRA, DOT, TCEQ and other applicable state and local regulations.

B. Comply with DOT and state regulations for containers. **All liquids** generated as a result of clean-up activities shall be disposed of in DOT 17E closed-top drums. The most stringent regulation shall apply. All drums containing hazardous waste shall be marked with the label (properly completed) shown below.

HAZARDOUS
WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION

NAME_____.

ADDRESS_____. PHONE_____.

CITY_____ STATE_____ ZIP_____.

EPA MANIFEST
ID NO./DOCUMENT NO_____./

ACCUMULATION
START DATE_____ EPA
WASTE NO_____.

_____.

_____.

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

C. All waste is to be hauled by a licensed waste hauler with all required licenses from all state and local authorities with jurisdiction.

D. Load all waste material into properly labeled disposal bags, polyethylene sheeting, or leak-tight drums. All materials are to be contained in one of the following:

1. One (1) 6-mil layer of sheet polyethylene, duct tape all seams or
One (1) 6-mil disposal bag; or

2. Two (2) 4-mil disposal bags; or

3. Sealed steel drum with no bag

E. Protect interior of truck or dumpster with two (2) 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 may be carefully unloaded from the truck. If bags are broken or damaged, return to work site for rebagging. Clean entire truck and contents using procedures set forth in Section 01935 Project Decontamination – Lead Containing Materials.

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 Representative.

3.05 CLASSIFICATION OF SOILS AND WATER (As determined by testing)

A. The Owner or Owner's Representative will determine the waste classification of soils and contaminated water and/or groundwater for the purpose of proper disposal per RCRA.

B. Representative waste stream samples shall be collected by the Owner or Owner's Representative for waste classification and waste disposal purposes. The samples collected shall be tested utilizing Toxicity Characteristic Leachate Procedures (TCLP) for the RCRA 8 Metals which will confirm the quantity of hazardous materials present in the debris that will be disposed of by land filling. The RCRA 8 Metals are Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver. Waste Classification shall comply with Title 30 of the **Texas Administrative Code (TAC), Chapter 335, Subchapter R (Waste Classification)** as an industrial waste.

3.06 TRANSPORTATION

A. The Remediation Contractor shall perform transport operations in a manner that precludes the spread of contamination. The Remediation Contractor shall remediate waste spillage in transport in accordance with applicable requirements of 30 TAC 335.93, 30 TAC 330.34, and other applicable Federal, State, and local regulations at no additional cost to the Owner. For transportation of Lead

containing materials identified for recycling the Remediation Contractor shall complete and submit to the Owner or Owner's Representative, prior to transportation, the certification form entitled "CERTIFICATION OF TRANSPORTING HAZARDOUS WASTE MATERIALS TO A RECYCLING FACILITY"

B. Open waste transport vehicles shall be covered by the Remediation Contractor prior to leaving the project site. Covers shall be constructed from water-resistant material with sufficient strength to withstand wind loads during transit. Covers shall effectively prevent release of dust from the transport vehicle. Covers shall have tie-downs or other restraint mechanisms necessary to securely fasten them to the transport vehicle.

C. Waste transport vehicles shall not leave the project site until the Owner or OWNER'S REPRESENTATIVE signs the waste manifest as generator of the waste. The Remediation Contractor shall not sign any waste manifest or shipping papers as generator. Payment will not be made for any waste shipment that leaves the site without signatory approval of Owner or Owner's Representative.

D. The Remediation Contractor shall line all trucks transporting known contaminated wastes with plastic liner as described in Section 01927 – Remediation Facilities & Temporary Controls of this Contract Document. The liner shall be secured in such a manner as to prevent the leaking of liquid materials from the truck bed. The Remediation Contractor shall be responsible for ensuring that trucks leaving the site are NOT leaking liquid materials, and shall be responsible for sealing or re-lining any trucks that are leaking liquids. The Remediation Contractor shall also be responsible for clean-up of any releases.

E. The Remediation Contractor shall retain a copy of all waste manifests and load tickets for each waste shipment prior to off-site transportation, for record purposes. The Remediation Contractor shall submit a copy of all waste manifests and load tickets to the Owner within THREE (3) business days of transport. The Remediation Contractor shall notify the OWNER whenever a waste shipment does not arrive at the approved disposal site in a timely manner.

F. The Remediation Contractor will inspect vehicles before they enter or exit the Project site to verify compliance with decontamination criteria provided in Part A of this Section. The Remediation Contractor shall be responsible to remedy deficiencies identified by Owner or Owner's Representatives.

G. All transport vehicles shall be properly licensed, labeled and placarded in a manner consistent with TCEQ and DOT regulations for material being transported.

3.07 DISPOSAL

A. The Remediation Contractor shall submit contact information for off-site hazardous and non-hazardous waste transfer, storage, processing, and disposal facilities prior to the commencement of work to the Owner for approval. The Owner or appointed representative must review and approve of all off-site disposal facilities prior to commencement of work. In the event that the Remediation Contractor does not receive approval from the Owner or the appointed representatives for the selected off-site disposal facility prior to starting work, the Remediation Contractor will be responsible for all costs

incurred in identifying an alternative off-site disposal facility and the cost of staging any contaminated material until a facility acceptable to the Owner is identified.

B. The Remediation Contractor shall retain a copy of all waste manifests, certificates of disposal, and load or weight tickets from disposal facility on-site for the duration of the project and submit copies of the waste manifests, certificates of disposal, and load or weight tickets with the corresponding Application for Progress Payment.

3.08 BACKCHARGES

A. Where Remediation Contractor fails to fulfill packaging, handling, or disposal requirements as outlined herein, Owner will charge back to Remediation Contractor all costs associated with insuring that hazardous wastes are packaged and segregated in accordance with EPA and DOT regulations.

B. Environmental pollution of Owner's property resulting from Remediation Contractor's hazardous waste management activities shall be promptly remediated under Owner direction, to the Owner's sole satisfaction, and at the Remediation Contractor's sole expense.

C. Remediation 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 01938

CERTIFICATION OF TRANSPORTING HAZARDOUS WASTE MATERIALS TO A RECYCLING FACILITY.

CONTRACTOR CERTIFICATION

In accordance with Section 01938 – Disposal of Waste Materials – Lead-Based Paint, the Contractor hereby certifies that the waste material(s) have been prepared for transportation to the following recycling facility:

Recycling Facility Name: _____

Address: _____

Phone: _____

Facility Contact: _____

by: (Signature)_____ Date_____

(Print Name)_____

OWNER'S REPRESENTATIVE CERTIFICATION

The Owner's Representative hereby certifies that the Contractor has prepared the waste material(s) for transportation to the above referenced recycling facility. The Owner's Representative has witnessed the loading of the waste materials for transport from the job site by the Contractor and to the best of his knowledge and belief, the Contractor's certification above is a true and honest one.

by: (Signature)_____ Date_____

(Print Name)_____ (Print Title)_____

RECYCLING FACILITY

The Recycling Facility Representative hereby certifies receipt of the following waste material(s) from the Project Job Site via the Contractor mentioned above.

by: (Signature)_____ Date_____

(Print Name)_____ (Print Title)_____

PROJECT JOB SITE: _____

Quantity	Waste Material(s):

SECTION 01939 - CLEANING AND DECONTAMINATION – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY OF WORK

Work of this section includes cleaning and decontamination of specific areas identified on project drawings and/or in written project specifications.

The extent of cleaning and decontamination work is shown on the drawings.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. **Work Area Clearance:** Wipe sample testing and other requirements which must be met before release of Contractor and re-occupancy of the work area are specified in Section 01926 Project Clearance – Lead Containing Materials.

PART 2 - PRODUCTS

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

2.2 **Wet Detergent Wash:** Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 GENERAL

A. **Work of This Section:** includes the decontamination of surfaces that have been contaminated by lead dust. This may be applicable to either the Work Area or the adjacent areas.

3.2 START OF WORK

A. Start of Work: Work of this section begins with the set up of the work area in accordance with Section 01929 Work Area Containment – Lead Containing Materials. Complete the following before the start of work of this section:

1. **Critical Barrier:** Install critical barrier between the work area and other portions of the building of the outside. Pre-clean surfaces to be covered by critical barriers.

2. **Critical Barrier Sheeting:** Cover lighting fixtures, ventilation, openings, doorways, convectors, and other openings.

3. **Flapped Doorway Sheeting:** Install between the work area and the changing room.

3.3 CLEANING PROCEDURES - ROOMS AND HARD SURFACES

A. **HEPA Vacuum:** All surfaces in work area. Start at point farthest from main entrance and finish vacuuming back at that point. Begin at top of each room and work down. Sequence to avoid passing through rooms already cleaned.

B. **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 minimum after each room. Filter all wastewater or dispose of in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials.

C. **Wiping Work Area**

1. The work area should be cleaned using a three- (3) container method. Fill two (2) 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. Rinse water must be filtered properly prior to disposal.

D. **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 (2) 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. Mop should be disposed of properly following use

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

E. Mist critical barrier sheeting and remove.

F. HEPA Vacuum area previously covered by critical barrier sheeting followed by wet detergent wash.

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, and other openings; look for debris from any sources, 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 Owner's Representative.

J. Perform final clearance sampling in accordance with sub-section 3.4 Final Clearance Sampling.

H. **Painting of substrates:** If required, perform painting/sealing of substrates at this time.

3.4 CLEANING PROCEDURES - CARPETED AREAS

A. **For carpeted areas**, Remove contaminated carpets. Cut carpet and pad into manageable sections, fold sections inward, in effect covering carpet surface with backing and bag/label appropriately for inclusion into the waste stream. Clean remaining bare floor by mopping.

B. Mist critical barrier sheeting and remove.

C. HEPA Vacuum area previously covered by critical barrier sheeting followed by wet

detergent wash.

D. Perform clear water wash of all surfaces in same manner as wet detergent wash.

E. After all surfaces in work area are allowed to dry, complete final HEPA vacuuming of all surfaces in same manner as first HEPA vacuuming.

F. After Final Cleaning Perform a Complete Visual Inspection of the entire work area including: all surfaces, ceiling, walls, floor, doorways, windows, and other openings; look for debris from any sources, 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 Owner's Representative.

3.4 FINAL CLEARANCE SAMPLING

A. Wipe Sampling By Atomic Absorption Spectroscopy (AAS) or Inductively Coupled Plasma Emission Spectroscopy (ICP): After the work area is found to be visually clean, wipe samples will be obtained and analyzed in accordance with the procedure set forth in Section 01926 Project Clearance – Lead Containing Materials.

1. If Release Criteria are not met, repeat HEPA vacuuming, wet wash, HEPA vacuuming procedure until satisfactory clearance results are obtained.

2. If Release Criteria are met, remove work area isolation. Remove all equipment, materials from the site.

3.5 SUBSTANTIAL COMPLETION OF HAZARD REDUCTION

A. Hazard Reduction Work is Substantially Complete upon meeting the requirements of this section, in Section 01926 Project Clearance – Lead Containing Materials including submission of:

1. Certificate of Visual Inspection

2. Receipts Documenting proper disposal as required by Section 01938 Disposal of Waste Material - Lead Containing Materials.

3. Punch list detailing repairs to be made and incomplete items.

3.6 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 Owner's Representative. Submit completed certificate with application for final payment. Final payment will not be made until this certification is executed.

END OF SECTION 01939

CERTIFICATION OF VISUAL INSPECTION

In accordance with Section 01939 Cleaning and Decontamination – Lead Containing Materials, the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, counters, ledges, walls, ceiling and floor, sheet plastic, etc.) and has found no dust, debris or residue.

by: (Signature_____ Date_____

(Print Name)_____

OWNER'S REPRESENTATIVE CERTIFICATION

The Owner's Representative 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: (Signature)_____ Date_____

(Print Name)_____

(Print Title)_____

WORK AREA

Location:

Room:

Hazard Reduction Performed:

SECTION 01943 CARPENTRY AND TRIM WORK – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY OF WORK

A. This Section includes the following:

1. Replacement of standing and running trim and rails

2. Removal and replacement of lead-based painted windows

3. Removal and replacement of lead-based painted doors

4. Removal and replacement of cabinetry

5. Removal and replacement of stair components

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. **Section 01928** - Exterior Regulated Areas – Lead Containing Materials

B. **Section 01929** - Work Area Containment - Lead Containing Materials

C. **Section 01931** - Worker Protection - Lead Containing Materials

D. **Section 01932** - Respiratory Protection - Lead Containing Materials

E. **Section 01938** - Disposal Of Waste Materials - Lead Containing Materials

F. **Section 01948** - Chemical Stripping of Lead Containing Materials

G. **Section 01951** - Painting - Lead Containing Materials

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Arrange for installation of finish carpentry by a firm that can demonstrate successful experience in installing finish carpentry items similar in type and quality to those required for this Project.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber, plywood and other panels. Provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

B. Do not deliver interior finish carpentry materials until environmental conditions meet requirements specified for installation areas. If finish carpentry must be stored in other than installation areas, store only in areas where environmental conditions meet requirements specified for installation areas. Complete cleaning and decontamination requirements of Section 01935 Project Decontamination – Lead Containing Materials prior to delivery of materials.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting installation and performance of finish carpentry. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A Clean substrates of projections and substances detrimental to application.

B. Condition finish carpentry to average prevailing humidity conditions in installation areas before installation for a minimum of 24 hours unless longer conditioning recommended by manufacturer.

C. Back prime lumber for painted finish exposed on the exterior. Comply with requirements for surface preparation and application appropriate sections.

3.3 GENERAL INSTALLATION

A. Do not use finish carpentry materials that are unsound, warped, bowed, twisted, improperly treated or finished, not adequately seasoned, or too small to fabricate with proper jointing arrangements.

1. Do not use manufactured units with defective surfaces, sizes, or patterns.

B. Install finish carpentry plumb, level, true, and aligned with adjacent materials. Use concealed shims where required for alignment.

1. Scribe and cut finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

2. Install to tolerance of 1/8 inch in 8 feet for plumb and level. Install adjoining finish carpentry with 1/16 inch maximum offset for flush installation and 1/8 inch maximum offset for reveal installation.

3. Coordinate finish carpentry with materials and systems that may be in or adjacent to standing and running trim and rails. Provide cutouts for mechanical and electrical items that penetrate exposed surfaces of trim and rails.

C. Finish in accordance with specified requirements.

3.4 STANDING AND RUNNING TRIM AND RAILS

A. Install with minimum number of joints practical, using full length pieces from maximum lengths of lumber available. Stagger joints in adjacent and related standing and running trim and rails. Cope at returns and miter at corners to produce tight-fitting joints with full surface contact throughout length of joint. Use scarf joints for end-to-end joints. Plane back of casings to provide uniform thickness across joints if required.

1. Match color and grain pattern across joints.

2. Install trim after drywall joint finishing operations are completed.

3. Drill pilot holes in hardwood prior to nailing or fastening to prevent splitting. Fasten to prevent movement or warping. Countersink nail heads on exposed carpentry work and fill holes.

4. Fit exterior joints to exclude water. Apply flat grain lumber with bark side exposed to weather.

3.5 WINDOWS: Replacement/repair options for typical double-hung wooden window units.

A. Remove, package in 6-mil plastic, and dispose of sash, stop and parting beads, jamb, interior sill (stool), apron and casing. Provide and install new jamb and window unit to match original. Install new trim to match original for sill, apron and casing. Caulk the edges to seal. Apply one coat of primer in accordance with Section 01951 - Painting – Lead Containing Materials, or

B. Remove, package in 6-mil plastic, and dispose of inside stop and parting beads, sill (stool), and lower sash; replace with comparable components. Fix upper sash in place by nailing into jamb or attaching corner braces beneath sash and attached to jamb. Stabilize remaining deteriorated paint inside and out with wet scraping; clean and de-gloss surface with wet detergent wash solution; re-glaze as necessary; spot prime bare wood with primer, in preparation for final finish painting.

3.6 DOORS: Replacement

A. Remove, package in 6-mil plastic, and dispose of door stop, jamb and casing. Hardware shall be removed and set aside or disposed of prior to packaging. Provide and install new jamb, stop, door and casing to match original. Prep for paint. Apply one coat of primer in accordance with Section 01951 Painting – Lead Containing Materials. Install new or saved hardware, or

B. Check door for all friction points. Remove, package in 6-mil plastic, and dispose of door stop. Rework hardware as needed, plane friction points and repair existing components as needed to minimize friction. Stabilize all deteriorated paint with wet scraping; clean and de-gloss surface with wet detergent wash solution; replace door stop with comparable component; prep for paint, spot prime bare wood with primer in accordance with Section 01951 Painting – Lead Containing Materials.

3.7 CABINETRY:

A. Remove, package in 6-mil plastic, and dispose of cabinets in accordance with Section 01938 Disposal of Waste Materials – Lead Containing Materials. Install new lead free cabinets, or

B. For cabinet to remain, check doors/drawers for all friction points. Plane friction points and repair existing components to minimize friction. Stabilize all deteriorated paint with wet scraping; clean and de-gloss surface with wet detergent wash solution; prep for paint; spot prime with oil based paint. Apply one coat of primer in accordance with Section 01951 Painting – Lead Containing Materials.

3.8 STAIR SYSTEMS

A. **Tread and Riser:** Wet scrape any loose or flaking paint. Remove foreign material by washing down substrate with wet detergent wash solution. Laminate treads with 1/8" (3 mm) vinyl composition tile secured with manufacturer's recommended adhesive. Install metal bullnose and fasten. Laminate riser with 1/4" (6 mm) luan or equivalent, secure with finish nails. Caulk all edges to seal. Apply one coat primer to riser in accordance with Section 01951 Painting – Lead Containing Materials.

B. **Posts/Bannister/Spindles:** Remove, package in 6-mil plastic, and dispose of components per Section 01938 Disposal of Waste Materials – Lead Containing Materials. Install new components. Prep for paint. Apply one coat of primer in accordance with Section 01951 Painting – Lead Containing Materials.

C. **Entire system except treads and risers**: Stabilize deteriorated paint with wet scraping. Remove foreign material and degloss with wet wash solution. Prep for paint. Prime bare wood with primer in accordance with Section 01951 Painting – Lead Containing Materials

3.9 ADJUSTING

A. Repair damaged or defective finish carpentry where possible to eliminate

functional or visual defects. Where not possible to repair, replace finish carpentry. Adjust joinery for uniform appearance.

3.10 CLEANING

A. Clean finish carpentry on exposed and semi-exposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.11 PROTECTION

A. Provide final protection and maintain conditions that ensure finish carpentry is without damage or deterioration at time of Substantial Completion.

END OF SECTION 06402

SECTION 01948 - CHEMICAL STRIPPING OF LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 SUMMARY OF WORK: Work of this section may include removal and disposal of lead-based paint

A. **The following substrates *may* require on-site paint removal:**

1. *Existing metal structural components as necessary to accommodate the installation of new electrical, hydraulic, HVAC or plumbing systems.*

2. *Existing metal roof.*

3. *Painted wood interior or exterior components.*

4. *Wrought iron rails.*

5. *Masonry components or structures.*

B. **The following substrates *may* require off-site paint removal:**

1. *Metal structural or mechanical components as necessary to accommodate the refurbishment of existing electrical, hydraulic, HVAC or plumbing systems.*

1.3 GENERAL: prohibited lead hazard removal methods.

A. Open flame burning;

B. Chemical stripping with methylene chloride based paint strippers;

C. Uncontained abrasive blasting;

D. Uncontained power washing;

E. Dry sanding or scraping;

F. Power sanding without HEPA attachment;

G. Sanding of wood after chemical stripping.

1.4 **SUBMITTALS:** Before start of work: Submit the following to the Owner's Representative for review. **Do not start work until these submittals are returned with Owner's Representative action stamp and/or written approval indicating that the submittal is returned for unrestricted use.**

A. **Chemical Stripping Removers And Neutralizers:** Submit product data, use instructions and recommendations from manufacturer for use intended. Include data substantiating that material complies with requirements.

B. **Material Safety Data Sheet:** Submit material safety data sheet, or equivalent, in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) for each chemical stripper and neutralizer, include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated.

C. **Off-Site Removal:** Submit name, location, materials and methods to be used to remove paint off-site.

PART 2 - PRODUCTS

A. **Chemical Stripping Removers:** Shall contain no methylene chloride products. Do not use strippers with component solvents that have a flash point below 140 degrees F. Chemical removers shall be compatible with, and not harmful to the substrate that they are applied to. The contractor shall comply with the manufacturer's recommendations for use of the product supplied.

B. **Chemical Stripping Agent Neutralizer:** Provide chemical agent neutralizer in accordance with manufacturer's recommendations, if required. Neutralizers shall be compatible with and not harmful to the substrate. Neutralizers shall also be compatible with the stripping agent used.
Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 **Before starting work of this section, complete the following:**

A. **Section 01927**- Remediation Temporary Facilities –Lead(Pb) Containing Materials

B. **Section 01928** - Exterior Regulated Areas –Lead(Pb) Containing Materials

C. **Section 01929** - Work Area Containment –Lead(Pb) Containing Materials

D. **Section 01931** - Worker Protection–Lead(Pb) Containing Materials

E. **Section 01932** - Respiratory Protection –Lead(Pb) Containing Materials

3.2 CHEMICAL LEAD-BASED PAINT REMOVAL ON-SITE:

A. **Chemical Stripping Agents** and neutralizers shall be applied in accordance with the recommendations of the manufacturer.

B. **Caustic Stripper Neutralization:** Caustic strippers shall be neutralized in accordance with manufacturer's recommendations. Provide workers with proper protective equipment, including but not limited to; protective clothing (non-paper), chemically resistant gloves, eye protection and respiratory protection with filters selected for the hazards to be encountered.

C. **Remove Stripper Sludge:** Place lead containing stripper sludge in corrosion-proof containers and place in a secure waste storage area. The surface from which lead-based paint has been removed shall be thoroughly scrubbed, while still damp from the stripper, in accordance with the manufacturer's recommendation. Monitor pH of the neutralizing solution to ensure it has not become neutralized in the process. If the pH exceeds 6.5, or the solution becomes overly soiled, change solution. Solution may be classified as hazardous waste. Place in 55 gallon drums and test in accordance with Section 01938- Disposal of Waste Materials – Lead Containing Materials. The surface shall be tested with litmus paper following this process. If the litmus paper turns pink, the acid has effectively neutralized the alkali. If litmus turns blue continue scrubbing until satisfactory results are achieved. ***Following neutralization of the alkali, considerable Lead residue will remain on the surface, porous surfaces like wood and masonry, for wood surfaces it is important not to allow the surface to dry before the next step.***

D. **Final Cleaning Of Surfaces:**

Prepare wet detergent wash. Workers must wear eye shields and chemically resistant gloves when working with this solution. Thoroughly scrub stripped surface to remove as much remaining lead residue as possible. The wash solution may also be hazardous waste, treat in accordance with Section 01938- Disposal of Waste Materials – Lead Containing Materials. Following wet detergent wash, perform a final wash with clear water to remove any traces of detergent. Sponges used in the clean-up process may not be reused and must be placed in double 4 mil or single 6 mil plastic bags, which will be sealed, labeled, and placed in the secure waste storage area. Surfaces must be allowed to dry thoroughly before repainting. A grayish film indicates that significant lead residues remain and the cleaning process must be repeated. If a white powder appears, the surface is Alkaline and requires further neutralization.

E. **Complete Project Decontamination and Visual Clearance per** requirements of Section 01935 - Project Decontamination – Lead Containing Materials.

F. **Painting/sealing:** After complete drying, prepare the substrate and seal all surfaces where lead-based paint was removed with a Lead free primer or encapsulant which is compatible with the substrate and any planned final top finish paint coat.

G. **Final clearance sampling:** After complete drying of primer perform in accordance with Section 01926 - Project Clearance - Lead Containing Materials

H. **Disposal:** Place all contaminated rags, sandpaper and Lead containing debris in 6 mil polyethylene disposal bag and dispose of in accordance with section 01938 - Disposal of Waste Materials – Lead Containing Materials.

3.3 CHEMICAL LEAD CONTAINING PAINT REMOVAL OFF SITE: Carefully remove lead-painted components in accordance with Section 01936 - Removal of Lead- Painted Components. Wrap with 6 mil polyethylene sheeting and label with "CAUTION-LEAD DUST". Do not deliver stripped components back to job site until visual inspection requirements of Section 01935 - Project Decontamination - Lead-Based Paint are met.

END OF SECTION 01948

SECTION 01949 - MECHANICAL REMOVAL OF LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

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

1.2 **SUMMARY OF WORK**: Work of this section *may* include removal and disposal of lead-containing paint from the following substrates;

A. **The following substrates require Mechanical paint removal:**

1. ***Metal mechanical equipment***
2. ***Metal door frames***
3. ***Steel columns***
4. ***Concrete walls and floors***
5. ***Wrought iron rails***

1.3 **GENERAL:** Prohibited lead hazard removal methods.

A. Open flame burning;

B. Chemical stripping with methylene chloride based paint strippers;

C. Uncontained abrasive blasting;

D. Uncontained power washing;

E. Dry sanding or scraping;

F. Power sanding without HEPA attachment;

G. Sanding of wood after chemical stripping.

1.4 **SUBMITTALS:** Before start of work: Submit the following to the Owner's Representative for review. **Do not start work until these submittals are returned with Owner's Representative action stamp and/or written approval indicating that the submittal is returned for unrestricted use.**

A. Manufacturer's Product Data on removal equipment to be used.

B. Description of removal methods to be used for each substrate condition including manufacturer's operating instructions and recommendations for equipment usage.

PART 2 - PRODUCTS

2.1. TOOLS AND EQUIPMENT

A. Portable power sanders with HEPA vacuum attachment.

B. Needle gun with HEPA vacuum attachment

C. Vacuum blasting equipment with HEPA vacuum attachment

D. Flameless heat guns and similar devices with maximum temperature setting of 700 degrees Fahrenheit. Respiratory protection is required for use of heat guns or similar devices in accordance with Section 01932- Respiratory Protection- Lead Containing Materials

E. Paint scrapers (wet)

F. Wet sand paper

PART 3 - EXECUTION

3.1 RELATED WORK SPECIFIED ELSEWHERE:

A. **Section 01925** – Lab Testing – Lead(Pb) Containing Materials

B. **Section 01926** – Project Clearance- Lead(Pb) Containing Materials

C. **Section 01927** – Remediation Temporary Facilities–Lead(Pb) Containing Materials

D. **Section 01928** - Exterior Regulated Areas- Lead(Pb) Containing Materials

E. **Section 01929** - Work Area Containment- Lead(Pb) Containing Materials

F. **Section 01931** - Worker Protection- Lead(Pb) Containing Materials

G. **Section 01932** - Respiratory Protection- Lead(Pb) Containing Materials

H. **Section 01935**- Project Decontamination- Lead(Pb) Containing Materials

I. **Section 01938** - Disposal of Waste Materials- Lead(Pb) Containing Materials

3.2 MECHANICAL REMOVAL OF LEAD-BASED PAINT

A. **Portable Power Sanders:** Maintain HEPA vacuum attachment in operation during sanding operations. Sanding surface shall be held flat to surface. Conduct sanding operations on flat surfaces only. Do not allow sanding pad surface to extend beyond surface being sanded. Follow manufacturer's operating instructions for use and instructions for care and maintenance. Use technique only for small limited areas with flat surfaces.

C. **Needle Gun:** Maintain HEPA vacuum attachment in operation during removal operation. Select proper shroud to match the configuration of the surface being treated. To determine compatibility of equipment with substrate, field test paint removal from specified substrates before beginning general removal operations.

Use only for removal of paint from metal or masonry surfaces (field tested), not wood. For use with masonry or concrete surfaces use a depth control mechanism to limit penetration of needles into the substrate.

D. **Vacuum Blasting:** conduct abrasive removal of exterior surfaces only using machine blasting equipment mounted with a fully contained, coaxially mounted local exhaust hood with HEPA-Vacuuming capability and using either recyclable or dry ice (co_2) abrasive media.

1. Conduct blasting on flat surfaces or surfaces compatible with available blast heads as provided by equipment manufacturer.

2. Maintain blast head in contact with surface to provide maximum containment of dust, debris, etc. created by blasting operation.

E. **Flameless Heat Gun/Heat Grid:** Provide proper respiratory and worker protection prior to use. Soften paint surface with heat gun/heat grid. Use putty knife to scrape paint from surface. Collect sludge and properly containerize, characterize and dispose of in accordance with Section 01938 - Disposal of Waste Materials - Lead-Based Paint.

F. **Paint Scrapers:** Use wet scraping methods only. Lightly mist surface to be scraped. Properly containerize, characterize and dispose of waste in accordance with Section 01938 - Disposal of Waste Materials - Lead-Based Paint.

G. **Wet/Dry Sand Paper:** Use wet sanding methods only. Do not allow removed paint to accumulate. Properly containerize, characterize and dispose of waste in accordance with Section 01938 - Disposal of Waste Materials - Lead-Based Paint.

END OF SECTION 01949

SECTION 01950 - SURFACE PREPARATION AND PAINT STABILIZATION – LEAD CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY OF WORK:

A. **Work** of this section includes the stabilization (or interim control) of lead-based painted surfaces to be painted by the following sections:

1. **01951** - Painting - lead-based paint

B. **Prior to any paint stabilization activities** any required corrective work and building envelope repairs must be completed to correct potential for reoccurring paint damage from leaks, moisture control, roofing, trim, inadequate ventilation, surface corrosion, aging, mechanical damage, chemical incompatibility, etc.

PART 2 - PRODUCTS

2.1 Disposal Bags/Plastic Sheeting: Provide 6 mil polyethylene disposal bags.

2.2 Wet Detergent Wash: Provide detergent or cleaning agent formulated to be effective in removing lead dust. Follow dilution ratio recommended by the manufacturer's instructions.

PART 3 - EXECUTION

3.1 Before starting work of this section, complete the following:

A. **Section 01927** - Remediation Facilities and Temporary Controls

B. **Section 01928** - Exterior Regulated Areas

C. **Section 01929** - Work Area Containment

D. **Section 01931** - Worker Protection

E. **Section 01932** - Respiratory Protection

3.2 SURFACE PREPARATION

A. Prior to painting/priming remove loose, flaking and deteriorated paint by wet scraping or wet sanding.

B. Remove loose, unsound or deteriorated substrates. Place in 6 mil polyethylene disposal bags and dispose of in accordance with section 01938 – Disposal of Waste Materials - Lead-Based Paint

C. HEPA vacuum and/or wet wipe to remove all paint chips, debris and dust generated during the work.

3.3 PAINT STABILIZATION

A. SUBSTRATE REPAIRS

1. Prior to stabilizing lead-based paint, correct substrate surface defects and/or perform any required corrective measures. Remove loose, unsound or deteriorated substrates. Place in 6 mil polyethylene disposal bag and dispose of in accordance with section 01938 - Disposal of Waste Materials – Lead Containing Materials.

B. PAINT AND RUST REMOVAL

1. **Wet Scraping:** remove all loose, flaking and deteriorated paint by wet scraping. Continually mist surface with water during scraping.

2. **Wet Sanding:** prepare finish surface by wet sanding. Feather edges lightly. Keep surface wet while sanding. Good surface preparation will remove damaged, oxidized and deteriorated paint, but will also create dust. Wipe surface using acceptable detergent solutions, followed by wet wiping with clean water. After cleaned surface has been allowed to dry, HEPA vacuum surface to collect any remaining dust. **Disposal:** Place all contaminated rags, sandpaper and Lead containing debris in 6 mil polyethylene disposal bag and dispose of in accordance with section 01938 - Disposal of Waste Materials – Lead Containing Materials. **C. SURFACE CLEANING**

1. Dust and chips: HEPA vacuum surface after drying.
2. Chemically treat surface if necessary for good paint adhesion. Follow manufacturer's printed instructions for system used.

3. Test surface for pH. Place LITMUS paper on wet surface. Surface pH should be between 6-8. Re-rinse surfaces that do not meet pH with clear water or weak acid solution.

4. Remove oils, waxes and mold. Remove mold with a 1% to 10% bleach solution. Provide appropriate eye, skin and respiratory protection during mold decontamination procedures. Remove waxes with ammonia and water. Degrease surfaces with suitable cleaner. Rinse thoroughly following cleaning.

3.4 CLEARANCE

A. **Visual Inspection:** Owner's Representative shall conduct a visual inspection of the stabilized surface. Once the surfaces pass the visual inspection and after complete drying, prepare the substrate and seal all surfaces where lead-based paint was removed/stabilized with a Lead free primer or encapsulant which is compatible with the substrate and any planned final top finish paint coat per Section 01951 – Painting - Lead Containing Materials.

B. **Clearance sampling:** Prior to releasing the work area for general occupation and final painting with the finish top coat, the work area primed surfaces must pass final clearance testing using wipe sampling per Section 01926 – Project Clearance – Lead Containing Materials

END OF SECTION 01950

SECTION 01951- PAINTING - LEAD-CONTAINING MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY OF WORK

A. This Section includes surface preparation and painting, exposed interior and exterior items and surfaces.It specifies the sealing and priming of substrates of Lead-containing painted surfaces and from which Lead- containing paints have been stabilized and/or removed. Finish painting is not included.

1. Surface preparation, priming, and finish coats specified in this Section are in addition to surface treatments specified under other Sections.

B. Paint exposed surfaces whether or not colors are designated in schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.

1. Painting includes field-painting lead-based painted surfaces, substrates from which lead-based paint has been removed, and building surfaces which were included in a hazard reduction work area.

C. Painting is not required on pre-finished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

D. Related Sections: The following Sections contain requirements that relate to this Section;

1. **01936** – Removal of Lead Substrates - Lead containing Materials
2. **01943** - Carpentry and Trim Work – Lead containing Materials
3. **01929** - Repair of Lead-Based Painted Substrates – Lead containing Materials
4. **01948** - Chemical Stripping Of Lead-Based Paint – Lead containing Materials
5. **01949** - Mechanical Removal Of Lead-Based Paint – Lead containing materials

6. **01950** - Surface Preparation - Paint Stabilization - Lead containing materials

1.3 SUBMITTALS

A. **General:** Submit the following according to Conditions of the Contract and Division 1 Specification Sections.

B. Product data for each paint system specified, including block fillers and primers.

1. Provide the manufacturer's technical information including instructions for handling, storage, and application of each material proposed for use.

2. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
3. Submit information by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

4. Provide MSDS for any proposed paints or primers. Use only paints or primers with less 90 ppm Lead, or the current CSPC regulations, which ever is less.

C. Samples for initial color selection in the form of manufacturer's color charts.

1. After color selection, the Architect will furnish color chips for surfaces to be coated.

1.4 QUALITY ASSURANCE

A. Field Samples: On wall surfaces and other exterior and interior components, duplicate finishes of prepared samples. Provide full-coat finish samples on at least 100 sq. ft. of surface until required sheen, color, and texture are obtained; simulate finished lighting conditions for review of in-place work.

1. The Architect will select one room or surface to represent surfaces and conditions for each type of coating and substrate to be painted. Apply coatings in this room or surface according to the schedule or as specified.

a. After finishes are accepted, this room or surface will be used to evaluate coating systems of a similar nature.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:

1. Product name or title of material.

2. Product description (generic classification or binder type).

3. Manufacturer's stock number and date of manufacture.

4. Contents by volume, for pigment and vehicle constituents.

5. Thinning instructions.

6. Application instructions.

7. Color name and number.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.6 JOB CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C).

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).

C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. **Available Manufacturers:** Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work may include, *but are not limited to*, the following: Devoe and Raynolds Co. (Devoe), Benjamin Moore and Co. (Moore), PPG Industries, Pittsburgh Paints (PPG), the Glidden Company (Glidden).and the Sherwin-Williams Company (S-W).

2.2 PAINT MATERIALS, GENERAL

A. **Material Compatibility:** Provide block fillers, primers, finish coat materials, and

related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.

B. **Material Quality:** Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.

1. **Proprietary Names:** Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish the manufacturer's material data and certificates of performance for proposed substitutions.

B. **Colors**: Provide custom colors of the finished paint systems to match the Architect's samples.

2.3 MASONRY BLOCK FILLER

A. **Filler Coat Materials:** Provide the manufacturer's recommended factory-formulated, latex-type concrete masonry block fillers that are compatible with the finish materials indicated.

1. **High-Performance Latex Block Filler:** Use only fillers that are recommended by the manufacturers to fill the porous surfaces of concrete masonry block under a variety of primers and finish coats. Only fillers that have been shown the compatible with specified primers and finish coats and that have been approved by the owner's representative shall be used.

2.4 PRIMERS

A. **Primers:** Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated. Only primers that have been approved by the owner's representative shall be used.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which painting will be performed for compliance with paint application requirements. Some finish coat materials may crawl and have poor adhesion when used over certain primers. Coordinate primers with finish coats as specified in other sections to ensure compatibility. Surfaces receiving paint must be thoroughly dry before paint is applied.

1. Do not begin to apply paint until unsatisfactory conditions have been corrected.

2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

3.2 PREPARATION

A. **General:** Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.

B. **Cleaning:** Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. **Surface Preparation:** Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified in section 01950.

1. Provide barrier coats over incompatible primers or remove and re-prime. Notify Architect in writing about anticipated problems using the specified finish-coat material with substrates primed by others.
   a. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

3.3 APPLICATION

A. **General:** ***Apply paint according to manufacturer's directions.*** Use applicators and techniques best suited for substrate and type of material being applied.

B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.

C. **Application Procedures:** Apply paints and coatings by brush, roller, spray, or other applicators according to the manufacturer's directions.

1. **Brushes:** Use brushes best suited for the material applied.

2. **Rollers:** Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

3. **Spray Equipment:** Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required.

D. **Minimum Coating Thickness:** Apply materials no thinner than the manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

3.4 CLEANING

A. **Cleanup:** At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.

1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

END OF SECTION 01951