

**PUBLIC BUILDING COMMISSION OF CHICAGO**

**ADDENDUM NO. 1 TO JOC Task Order 05810-C1505D-001-000  
FOR  
Mt. Greenwood Annex Site Preparation**

**DATE:** November 09, 2010

**NOTICE OF CHANGES IN CONTRACT DOCUMENTS**

The following changes are hereby made in the Contract Documents.

**CHANGES TO 100% CONSTRUCTION DOCUMENT DRAWINGS:**

<b>Change 1:</b>	Include re-routing of existing downspout, connection to existing line, selective removal of existing exterior drain piping and structure, patching of wall and associated work as outlined in CSK-SP1, CSK-SP2, CSK-SP3, and PSK-SP1, four pages, attached.
<b>Change 2:</b>	Add environmental drawing ENV1.0.
<b>Change 3:</b>	Add re-routing of existing downspout piping at northeast corner of school (building interior) to run outside of new building and foundation footprint, patch wall where existing line is removed, demo structure, re-connect new plumbing piping outside bldg. to west of existing structure, seal wall at new pipe penetration, selectively remove existing exterior piping and structure to east of new connection. Refer to PSK-SP1, 1-page and CSK-SP2 (page 2 of 3).
<b>Change 4:</b>	Revise demolition notes 10 and 13 on sheet C-SP-0.0 as outlined on CSK-SP1 (pg. 1 of 3) and as summarized below: 10. EXISTING ASPHALT PAVEMENT THICKNESS IS APPROXIMATELY 2 INCHES PER GEOTECHNICAL REPORT DATED OCTOBER 21, 2010 BY EPI. CONTRACTOR TO VERIFY EXISTING CONDITIONS. FOR ALL BASE BIDS, CONTRACTOR SHALL ESTIMATE AN EXCAVATION & REMOVAL AND ALL ASSOCIATED EARTHWORK WORK TO AN EXCAVATION ELEVATION OF 40.09 CCD. EXCAVATION LIMITS SHALL BE FOR THE AREA ENCOMPASSING 12 INCHES BEYOND THE BUILDING ANNEX FOOTPRINT. BACKFILL WITH APPROVED CA-6 MATERIAL (COMPACT TO 95%, 8" LIFTS) TO PROPOSED ELEVATIONS AS INDICATED.  13. CONTRACTOR TO FURNISH AND INSTALL CAISSON SHAFT PROTECTION FOR EACH CAISSON INSTALLED. SHAFT PROTECTION SHALL BE ADEQUATELY SIZED TO PROTECT AND IDENTIFY THE CONSTRUCTED SHAFT AND PROTRUDING REINFORCING BARS. PROTECTION SHALL ACCOMMODATE SUBJECTED EARTH PRESSURE FROM ADJACENT BACKFILL. PROVIDE CANOPY TO PREVENT ACCUMULATION OF RAINFALL ONTO SUBJECT CAISSON AND RE-BAR. SUBMIT PROTECTION DEVICE INFORMATION/CUT.
<b>Change 5:</b>	Revise grading plan on sheet C-SP-2.0 as outlined on CSK-SP3 (page 2 of 3).
<b>Change 6:</b>	Infill existing wall opening beneath existing stair with reinforced concrete prior to backfill as shown on ASK-SP1. Additional clarification provided regarding anticipated demolition requirements, remove all foundations, footings, and all associated elements of existing stairs and ramps.
<b>Change 7:</b>	Add an additional permanent casing for drilled pier located on column E-1.9 as indicated on SSK-SP-1, 1-page.

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**CHANGES TO 100% CONSTRUCTION DOCUMENT SPECIFICATIONS:**

<b>Change 8:</b>	Add Specification Section 02131, Asbestos Abatement for Interiors, 18-pages, attached.
<b>Change 9:</b>	Add Specification Section 02132, Asbestos Abatement for Exteriors, 12-pages, attached.
<b>Change 10:</b>	Add Specification Section 02133, Lead Based Paint Mitigation, 15-pages, attached.
<b>Change 11:</b>	Add Specification Section 02135, Asbestos Abatement for Pre-Demolition, 10-pages, attached.
<b>Change 12:</b>	For reference only, add Environmental Report Phase I Environmental Assessment dated November 8, 2010, 252-pages, attached.
<b>Change 13:</b>	For reference only, add Hazardous Material Inspection Report dated November 8, 2010, 2-pages, attached.
<b>Change 14:</b>	For reference only, add Asbestos Sampling Report dated November 8, 2010, 21-pages, attached.
<b>Change 15:</b>	For reference only, add Limited Lead-Based Paint Survey dated November 8, 2010, 33-pages, attached.
<b>Change 16:</b>	Specification 01014 Erosion and Sedimentation Control, under sub-section 1.1(B) add referenced section: "2. Section 02119 Special, Nonhazardous Special and Hazardous Waste Soil Removal and Disposal"
<b>Change 17:</b>	Specification 01524 Construction Waste Management, under sub-section 3.6(C), Revise sentence as follows "Disposal: Transport waste materials that cannot be recycled and used on site to a permitted Subtitle D Landfill site in accordance with Section 02316."
<b>Change 18:</b>	Specification 01014 Erosion and Sedimentation Control, under sub-section 3.1(F), add reference to Section 02119.
<b>Change 19:</b>	Specification section 02070 Selective Demolition, delete sub-section 1.1(B)(1) and replace with: "Removal of asbestos containing materials and other potentially hazardous materials. Do not start demolition until environmental hazards have been remedied in accordance with Section 02116, 02119, 02131, 02132, 02133, 02135, 02316 and 02317 as applicable.
<b>Change 20:</b>	Specification 02231 Tree Protection and Trimming, under sub-sections 2.1(A) and 2.1(B), add requirement for sections to comply with specification section 02318 for drainage fill and topsoil (respectively).
<b>Change 21:</b>	Specification section 02300(1.2)(A)(2), revise last sentence to read "The contractor is responsible for payment for collection of all backfill samples and associated analytical fees."
<b>Change 22:</b>	Specification section 02300(1.3)(B)(3), correct typographical error, delete "val;ues" and replace with "values".

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<b>Change 23:</b>	Specification section 02300(1.4)(A)(1), last sentence correct typographical error, delete “there” and replace with “their”.
<b>Change 24:</b>	Specification Section 02511, under sub-section 2.1 add reference to specification section 02318 as a related section.
<b>Change 25:</b>	Specification Section 02513, under sub-section 3.1(B) add “complying with specification section 02318.”
<b>Change 26:</b>	Specification Section 02700, under sub-section 3.1(A) backfill materials shall comply with section 02318.

**ATTACHMENTS:**

1	Specification Section 02131, Asbestos Abatement for Interiors, Project Rev: A_October 25, 2010, 18-pages, attached.
2	Specification Section 02132, Asbestos Abatement for Exteriors, Project Rev B_ 10/29/10, 12-pages, attached.
3	Specification Section 02133, Lead Based Paint Mitigation, Project Rev B_10/25/10, 15-pages, attached.
4	Specification Section 02135, Asbestos Abatement for Pre-Demolition, 10-pages, Project Rev: A_10/25/10, attached.
5	Environmental Report Phase I Environmental Assessment dated November 8, 2010, 252-pages, attached. (For reference only)
6	Hazardous Material Inspection Report dated November 8, 2010, 2-pages, attached. (For reference only)
7	Asbestos Sampling Report dated November 8, 2010, 21-pages, attached. (For reference only)
8	Limited Lead-Based Paint Survey dated November 8, 2010, 33-pages, attached. (For reference only)
9	ENV1.0., 1-page dated 11.08.10
10	PSK-SP1, 1-page dated 11.09.10
11	CSK-SP1, CSK-SP2, CSK-SP3, dated 11.09.10
12	SSK-SP-1, 1-page, dated 11.03.10
13	ASK-SP1, dated 11.09.10

**END OF ADDENDUM NO.1**

## SECTION 02131 - ASBESTOS ABATEMENT FOR INTERIORS

### PART 1 - GENERAL

- 1.1 Introduction: Asbestos abatement in interior building spaces, covered walkways or porticos connecting buildings, and on outdoor mechanical systems which condition indoor air (such as air handling units, air conditioners, cooling towers, etc.) is governed by rules established by the Illinois Department of Public Health (IDPH). This specification section addresses or references the requirements for complying with IDPH, OSHA, and EPA NESHAP asbestos rules. Each and every rule requirement may not be restated in detail since trained, accredited, and licensed contractors and individuals are required for this work and are presumed to be familiar with the relevant laws and rules. Full regulatory compliance is required, and is a part of the contract, whether specifically stated herein or not.

Exterior building spaces are not subject to IDPH rules unless the abatement procedures involve interior spaces of the building. Roofing, window replacement, exterior transite sheeting, asbestos siding, asbestos-containing paint, caulking, glazing, flashings, cements, or other products installed on the building exterior are subject to OSHA and NESHAP rules which, in many cases are less rigorous than IDPH requirements. Abatement of these items is specified in separate, related specification sections.

- 1.2 Definitions: In addition to the terms listed below, all definitions in the laws and regulations listed in Section 1.5 are incorporated by reference, whether or not restated herein.
- A. Abatement Contractor (AC) means the entity responsible for performing the work in this section and has the training and accreditation to competently perform the work. This entity will obtain and maintain licenses required for the indoor work in this section.
  - B. Architect of Record (AOR) means the entity that assembles the overall project bid documents and bid package, and approves the completed construction work.
  - C. Asbestos Abatement Supervisor, hereinafter referred to as “supervisor” means a person retained by the AC, who supervises asbestos abatement workers. This person must be trained, accredited, and licensed as required, and must also meet OSHA “competent person” criteria for asbestos abatement.
  - D. Asbestos Project Manager (APM) is the individual that performs asbestos abatement project monitoring, acts on behalf of PBC or its agents on the project, and performs “Project Manager” duties as defined by IDPH asbestos regulations. The APM may be a subcontractor to the Managing Environmental Consultant (MEC).
  - E. Chicago Public Schools (CPS) means the owner of the property.
  - F. General Contractor (GC) means the entity responsible for performing the complete scope of work in the Documents. If the GC self-performs any portion of the ACM abatement work, the GC must have the same credentials, training, accreditations and licenses required by the AC.

- G. HEPA Filter means a High Efficiency Particulate Air filter capable of trapping 99.97% percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- H. IDPH means the Illinois Department of Public Health.
- I. Managing Environmental Consultant (MEC) means the entity with overall responsibility for the environmental aspects of the project, including design, organization, direction, and control as well as investigations, assessments, and supervision of project managers.
- J. MSDS means Material Safety Data Sheet, required by OSHA for any chemicals in the workplace that that could be expected to cause an exposure to workers during normal use or in emergency situations.
- K. Owners Representative means the entity responsible for overall project coordination and completion.
- L. Plasticize means to apply plastic sheeting over surfaces or objects to protect them from contamination or water damage.
- M. PPE (Personal Protection Equipment) means the protective suits, head and foot covers, gloves, respirators and other items used to protect persons from asbestos or other hazards.
- N. RCRA means the Resource Conservation and Recovery Act and associated regulations.
- O. TCLP means the Toxicity Characteristic Leaching Procedure as specified in EPA 530/SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods 3rd edition, November 1986.
- P. Work Area means the area or areas where asbestos abatement is being conducted.

1.3 Scope of Work: Refer to Drawings.

#### 1.4 Work Included

- A. The work includes all labor, equipment, materials, and supplies necessary to perform the Scope of work in the Documents by the procedures described herein. The contractor, by submitting a bid for the work, represents itself as knowledgeable and expert in the performance of the work, and includes all things usually and customarily necessary to provide a complete and finished job, whether specifically mentioned or not. Related work may be shown in other related documents, prepared by others, if applicable, and as listed below:
  - 1. 01010 - Summary of Work
  - 2. 01300 - Submittals
  - 3. 01720 - Project Record Documents
  - 4. 02133 - Lead-Based Paint Abatement
  - 5. 02132 - Exterior Asbestos Abatement

- B. Removal of friable and non-friable asbestos-containing materials listed in the Documents, including pre-cleaning, moving of furnishings, establishing regulated areas, isolating the work areas, protection of adjacent areas, containment when required, cleanup and decontamination to the specified clearance levels, proper packaging and disposal of wastes, and all other steps necessary to complete the scope of work.
- C. Repair or replacement of damaged surfaces, fixtures, or furnishings to restore them to their pre-existing condition to the satisfaction of the Architect of Record and the Project Manager.
- D. When the Documents include lead and asbestos abatement items in the same spaces, they should be performed in the sequence and combinations that produce the most efficient results, minimize concentrated lead waste volume, and produce the least amount of total waste. That sequence will generally be:
  - 1. Cleanup of lead dust, flakes, chips, and residues most likely to fail a TCLP test. If both lead and asbestos debris are present and mixed together, they may be cleaned up and disposed together.
  - 2. Cleanup and removal of failed or delaminated friable asbestos-containing debris, if any.
  - 3. Removal of friable asbestos materials and cleanup of visible residues.
  - 4. Removal of lead-bearing architectural components.
  - 5. Removal of non-friable asbestos items. If both asbestos and lead are on the same components, for example lead paint and asbestos-containing glazing compound, the components may be removed and disposed with both the lead and asbestos-bearing items intact.
  - 6. Removal of lead-based paint, coatings, or surfacing material.
  - 7. Final cleanup and decontamination of the work space. Final air clearance (asbestos) and wipe samples (lead) may be performed concurrently.
  - 8. When lead and asbestos final decontamination processes are combined, the more stringent cleanup procedures will apply for both.
  - 9. Waste disposal.
    - a. Hazardous waste: loose paint flakes, chips, and dust; lead-specific cleaning supplies; contaminated soil; combined final decontamination supplies; disposable suits, gloves, head covers, and foot covers; other items that fail a TCLP or other RCRA test.
    - b. Special waste: friable asbestos-containing waste materials and lead-contaminated waste that has passed TCLP or other RCRA tests.
    - c. Construction and demolition (C&D) debris: lead-bearing architectural components; concrete and lumber with or without tile or mastic attached; demolition debris, and other general wastes.
    - d. All asbestos-containing or lead-bearing wastes, regardless of classification, shall be disposed in a landfill approved by the IEPA to accept asbestos-containing or lead-bearing waste materials.
- E. Compliance with all applicable laws, regulations, standards, and these specifications. In the case of a conflict, the contractor will comply with the most stringent.
- F. Contractor is required to fully comply with IDPH rules and these specifications unless a variance is granted by IDPH. Any variances obtained by the MEC will be listed in the Documents.

- G. All licenses, accreditations, permits, fees, notifications, reports, or other documents required by law, regulation, this specification, or the Documents.
- H. Provide project closeout documentation to the APM within thirty (30) days after final clearance. This documentation shall include, but is not limited to, items listed in paragraph 1-7, Submittals.

#### 1.5 Laws, Regulations and Standards

- A. The following laws, regulations, and standards are incorporated by reference:
  - 1. 105 ILCS 105: Illinois Asbestos Abatement Act
  - 2. 77 Ill. Adm. Code 855: Asbestos Abatement for Public and Private Schools and Commercial and Private Buildings in Illinois
  - 3. 29 CFR 1910: US OSHA General Industry Standards
  - 4. 29 CFR 1926: US OSHA Construction Standards
  - 5. 29 CFR 1926.1101: US OSHA Asbestos Construction Standards
  - 6. ASHARA: US EPA Asbestos School Hazard Abatement Reauthorization Act
  - 7. 40 CFR Part 61: US EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP), 11/90 revision
  - 8. 40 CFR 763 Subpart E: US EPA Asbestos Hazard Emergency Response Act (AHERA) Rules
  - 9. 40 CFR 763 Subpart E: US EPA Asbestos Model Accreditation Plan (MAP): Appendix C-Interim Final Rule

#### 1.6 Assessment, Monitoring, Testing and Analysis

- A. The MEC will perform inspection, testing and design services prior to the start of work, and during the project, and will perform testing, inspection, and monitoring services during the work and upon its completion:
  - 1. Prior to the start of the work
    - a. The MEC shall identify suspect materials and confirm their asbestos content through review of the school's management plan or by testing.
    - b. The MEC will design the project and address any design changes if requested by the AOR/OR.
    - c. The MEC shall collect background air samples before conditions are disturbed. Background samples will be analyzed by PCM.
    - d. Review and approve the pre-abatement submittals submitted by the AC.
  - 2. During the work, the MEC shall:
    - a. Enter the work area at least every two hours to inspect the work procedures and work area integrity.
    - b. Maintain a daily log to record the day's events, problems, corrective actions.
    - c. Collect air samples inside and outside the work area, and in the breathing zone of representative persons.
    - d. The MEC will stop the work if airborne asbestos concentrations outside the work area exceed 0.01 f/cc or the background sample levels, whichever is

- higher. The work may restart when the source of fiber release has been identified and corrected. Contractor will be responsible for cleaning and decontaminating the outside area if caused by the asbestos abatement activities.
- e. Observe/document smoke testing of the containment by the contractor.
  - f. Review original worker licenses and maintain weekly submittals from the AC.
  - g. Notify the MEC's project designer if design changes are needed before execution.
3. Upon completion of the work, the MEC shall:
- a. Inspect for visible debris. Contractor shall be required to re-clean the area or portions of areas until no visible debris remains and the work area is dry.
  - b. Perform aggressive clearance testing by Transmission Electron Microscopy (TEM) when the ACM in a work area is 260 linear feet, 160 square feet, or 35 cubic feet of volume or more, as required by AHERA and IDPH Section 855.170. The sample set shall include at least 5 inside samples, 5 outside samples, 2 field blanks and 1 sealed blank. **Note:** Large complicated, or multi-floor contiguous work areas connected by corridors, stairways, or other connections shall be tested using additional inside the work area samples. For clearance of multiple mini containments containing a total removal quantity greater than 160 square feet or 260 linear feet, a combined PCM/TEM final clearance procedure may be used. The first part of the procedure shall involve the collection and analysis of one PCM sample from within each mini containment. The second part shall involve the collection and analysis of five (5) TEM samples within the mini containments having the highest PCM analysis results. If there are five or fewer mini containments to be sampled, then only TEM sampling shall be conducted. A minimum of five (5) TEM samples shall be collected. All requirements of 40 CFR 763 Subpart E, Appendix A shall apply.
  - c. Perform aggressive clearance testing by Phase Contrast Microscopy (PCM) when the ACM in a work area is less than 260 linear feet, 160 square feet, or 35 cubic feet of volume.
  - d. Collect and analyze samples in accordance with AHERA Appendix A procedures and IDPH rule section 855.470.
  - e. Prepare and submit the IDPH "Project Manager's Summary Report Form" within 10 days of final clearance.
  - f. Prepare and submit the Project Manager Report to the IDPH within 60 working days of clearance testing. The final Project Manager is responsible for completion of the project report.
- B. The Contractor shall provide OSHA compliance air monitoring to determine exposures to its employees in accordance with OSHA 29 CFR 1926.1101. Frequency of testing will comply with OSHA requirements for the anticipated and actual exposure levels.
1. A written Exposure Assessment may be provided prior to the start of the work to determine the requirements for respiratory protection and frequency of OSHA monitoring for each type of activity. The contractor should note that a Negative Exposure Assessment (NEA) may be possible for many tasks. For interior work, this would allow reduced OSHA monitoring frequency.



2. Analysis may be performed on site.
- C. Credentials required for testing and analysis of PCM final clearance air samples:
1. Accreditation by AIHA or AAR; or
  2. Participation in the Proficiency Analytical Testing (PAT) program.
  3. Certification of individual qualification to read samples on site when on site analysis is performed.
- 1.7 Submittals by the Contractor
- A. To IDPH, IEPA, MEC and AOR at least 10 working days before commencement of work:
1. IDPH Asbestos Notification on current form, including inspector license number and landfill permit number.
  2. Written permission from building owner authorizing contractor to commence abatement.
  3. Building owner asbestos abatement notification to building occupants and users.
  4. School Floor Tile Project Notice, when applicable.
- B. To MEC and AOR at least five days prior to commencement of Work:
1. Documentation of arrangements of transport and disposal, landfill name and location, handling procedures and PPE at the landfill, prepared and signed by the landfill.
  2. Drawings or sketches for layout and construction of isolation barriers and decontamination units.
  3. Respirators: NIOSH approvals and manufacturer certification of HEPA filtration for cartridges
  4. Manufacturers' certifications that all HEPA vacuums, negative air pressure equipment, and other local exhaust ventilation equipment conform to ANSI Z9.2-79
  5. Written notifications to rental companies for any rental equipment used.
  6. Results of any performance tests for encapsulants, if applicable.
  7. OSHA Exposure Assessment, if available.
  8. Laboratory and analyst credentials for contractor OSHA samples.
  9. Material Safety Data Sheets (MSDS) for chemicals used on site.
  10. Work Plan and Schedule.
- C. To MEC and AOR on the first day of abatement work:
1. Original contractor, supervisor, and worker licenses along with a copy each.
  2. Initial Course Accreditation and current refresher accreditation for each supervisor and worker.
  2. Physician's Written Opinions for workers and supervisors.
  3. Fit test documentation for all employees, agents.
- D. To MEC and AOR weekly during the abatement work:
1. Job progress reports detailing abatement activities, progress compared to schedule, problems and actions taken, injury reports, and equipment breakdowns.
  2. Waste Shipment Records.
  3. Work site Entry logs.

4. Manometer readable tape for negative pressure differentials for each negative pressure worker enclosure or a log of digital readout.
  5. Filter Change logs for respirators, HEPA vacuums, negative air machines, and other engineering controls.
  6. OSHA compliance air monitoring data.
  7. Worker license and certification log.
- E. Prior to beginning work, the AC shall submit required notifications to applicable regulatory agencies and receive an Owners Authorization and Notice to Occupants from Chicago Public Schools for buildings where asbestos abatement will take place. The AC will provide copies of all regulatory notices to the CPS Environmental Services Manager and the EPM within 24 hours of sending such notices to the regulatory authority. The AC shall not begin a project until such notices are provided to CPS and the EPM.

## PART 2 - PRODUCTS

2.1 Tools and Equipment: All tools and equipment shall at least conform to minimum industry standards and IDPH regulations.

A. Equipment:

1. Negative Air Machines shall provide HEPA filtration and conform to ANSI Z9.2 fabrication criteria.
2. Respirators shall be NIOSH approved for use with lead, asbestos, or other contaminants anticipated in the work.
3. Contractor is fully responsible for complying with OSHA rules for other Safety equipment, such as hard hats, safety harnesses, eye protection, gloves, footwear, and any other safety devices used on the site.
4. Pressure differential manometer with readable tape shall be provided by the contractor, including calibration documentation.

B. Tools:

1. Shovels and scoops shall be rubber or plastic, suitable for use in a plasticized containment. Metal shovels are not permitted.
2. Scrapers, brushes, utility knives and other hand tools shall be of good quality and suitable for the intended uses. The contractor shall keep an ample supply on hand for the completion of the work.
3. Power tools such as, but not limited to saws, pneumatic chisels, brushes, sanders, and needle guns shall be equipped with shrouds and HEPA-filtered local exhaust systems to capture released particles.
4. Buffers are not permitted.

2.2 Materials: All materials shall at least conform to minimum industry standards and IDPH regulations.

- A. Installed materials which become a part of the work such as, but not limited to, encapsulants shall be of good quality, non-lead-bearing, free of asbestos, and conform to the respective reinstallation specification sections prepared by others.

1. Contractor shall ensure that encapsulants and sealants used as primers, basecoats, or covering existing materials are compatible with the respective existing or reinstallation materials and their manufacturers' warranties.
  2. Encapsulants for surfaces to which fireproofing will be applied (beams, columns, floor or roof decks, other structural members) shall be tested and rated as a component of the fireproofing system and listed in the UL Fire Resistance Directory with the specific fireproofing material to be installed.
- B. Abatement materials
1. Fire-retardant Poly sheeting for all applications shall be 6 mil nominal thickness for critical seals, floors, ceilings and drop cloths, and 4 mil for walls.
  2. Tape shall be 2" or 3" duct tape or other waterproof tape suitable for joining poly seams and attaching poly sheeting to surfaces.
  3. Spray adhesives shall be non-flammable and free of methylene chloride solvents.
  4. Disposal bags shall be 6 mil.
  5. Disposable suits, hoods, and foot coverings shall be TYVEK or similar.
  6. Solvents shall be compatible with any primers, mastics, adhesives, paints, coatings, or other surfacing materials to be installed following their use.

### PART 3 - EXECUTION

#### 3.1 Employee Training, Qualification and Medical Screening

- A. Supervisors and Workers shall be trained, accredited, and licensed in accordance with IDPH rules.
1. Contractor shall keep copies of licenses and most recent annual refresher training certificate at the jobsite at all times for all contractor personnel.
  2. An IDPH- licensed supervisor (competent person) shall be present at the worksite at all times when work under this section is being conducted.
  3. Current fit testing documentation.
- B. Medical Screening. All contractor personnel shall have a current medical examination in accordance with OSHA requirements. Copies of the Physician's Written Opinions shall be kept on site.

#### 3.2 Permissible Exposure Limits

- A. The OSHA permissible exposure limit (PEL) for worker exposure to airborne asbestos is 0.1 f/cc as an 8-hour time-weighted average (TWA).
- B. The OSHA short term excursion limit for worker exposure to airborne asbestos is 1.0 f/cc for a 30 minute sample.
- C. The permissible level of airborne fibers in areas adjacent to the work area is 0.01 f/cc or

background level, whichever is higher, as determined by phase contrast microscopy (PCM).

1. Work shall immediately cease in any work area where the airborne fiber concentrations exceed this level.
2. The source of outside contamination shall be determined, and corrective measures (e.g. wet cleaning, changes in work practices, negative pressure containment) will be implemented to prevent recurrence.
3. The contractor shall be responsible for cleanup of contamination in adjacent areas caused by the asbestos abatement activities at no additional cost to the building owner.

### 3.3 Exposure Assessment and Monitoring

- A. The Contractor shall make an assessment of the airborne exposures. Assessment shall conform to OSHA requirements and may be based upon:
  1. Initial monitoring of representative workers who the contractor believes are exposed to the greatest airborne concentrations of asbestos, or
  2. Past monitoring (within the past 12 months) or objective data for conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions to be used for this project, or
  3. In the absence of an exposure assessment, the contractor shall perform the work in full negative pressure containment with Type C pressure-demand respirator with auxiliary SCBA escape bottle.
- B. The contractor shall perform personal monitoring in accordance with the following requirements:
  1. Initially, to establish an exposure assessment when past monitoring or objective data are not available for an initial determination.
  2. Periodically if the exposures are, or are expected to be, below the PEL.
    - a. Whenever there has been a change of equipment, process, control, personnel, or a new task has been initiated that may affect employee exposures, the exposure assessment shall be updated, and monitoring shall be reinstated if exposures are unknown or are expected to exceed the PEL.
  3. Daily, if exposures are above the PEL.

### 3.4 Respiratory Protection

- A. Respiratory protection shall be worn by all persons potentially exposed to airborne asbestos fibers from the start of the abatement project until all areas have passed clearance air monitoring, in accordance with all applicable regulations incorporated by reference in 1.5 A.
- B. Contractors must have a respiratory protection program in compliance with all applicable regulations incorporated by reference in 1.5 A.

### 3.5 Hygiene Practices

- A. Eating, drinking, smoking, chewing gum or tobacco, and applying of cosmetics are not allowed in the work area.
- B. All persons entering the work area are required to wear appropriate PPE, and follow the entry and exit procedures posted in the Personnel Decontamination Enclosure System.
- C. Personal Protection Equipment (PPE) shall include:
  - 1. Full body disposable suits, headgear, and footwear.
  - 2. Gloves.
  - 3. Safety glasses
  - 4. Hardhats.
  - 5. Non-disposable footwear and clothing shall remain in the work area and shall be disposed of as contaminated waste when the job is completed.
  - 6. Authorized visitors shall be provided with suitable PPE.

### 3.6 Prohibited Activities

- A. Dry removal or dry sweeping.
- B. Use of compressed air for cleaning.
- C. Use of high speed power tools not equipped with a HEPA-filtered local exhaust system.
- D. The abatement contractor shall not execute abatement activities without asbestos abatement design drawings that have been signed by an IDPH licensed Asbestos Designer are on the job site. Any and all changes to containment layout and placement shall not be executed until revised design drawings that have been approved and signed by an IDPH licensed Asbestos Designer are on the job site.
- E. Buffers cannot be used to remove mastic.

### 3.7 Work Area Isolation and Preparation

- A. General Preparation. Contractor shall:
  - 1. Post:
    - a. Caution signs meeting the specifications of OSHA 29 CFR 1926.1101 (k)(6) at any location and approaches to a location where airborne concentrations of asbestos may exceed ambient background levels.
    - b. Decontamination and work procedures in equipment rooms and clean rooms.
    - c. EPA NESHAP asbestos rules (40 CFR Part 61, subparts A & M) in the clean room.
    - d. OSHA Asbestos Construction Standards (29 CFR 1926.1101) in the clean room.
    - e. Entry and Exit Log
    - f. List of telephone numbers in the clean room for:
      - 1) local hospital and/or local emergency squad.

- 2) school security office (if applicable).
  - 3) owner representative reachable 24 hours per day.
  - 4) contractor's headquarters.
  - 5) architects or consultants directly involved in the project.
2. Secure the work area from entry by unauthorized persons.
  3. Separate Work Areas from Occupied Areas
    - a. Seal off all doorways and corridors which will not be used for passage during work.
    - b. Install IDPH required separation barriers per section 855.430 (a) in all openings larger than 4 ft by 8 ft, consisting of wood or metal framing, a sheathing material such as plywood or drywall at least 5/8" thick on the work side, and double-layer 6-mil poly, both sides. Edges shall be caulked at the floor, ceiling, walls, and fixtures to form an air-tight seal.
    - c. If the school is not totally occupied (see Section 855.430), the sheathing material may be omitted.
  4. Separate Occupied areas from secured areas
    - a. Install IDPH barriers per section 855.430 (b)

B. Interior Preparation.

1. Shut down and lock out electric power to all work areas. Provide temporary power from an outside source with ground-fault circuit interrupter (GFCI) at the source.
2. Shut down and isolate heating, cooling, and ventilating air systems. Remove HVAC filters, package and dispose as asbestos waste. (Need to discuss filter removal and disposal in light of replacement costs and clarify that this applies when work happens in a mech system and not in classrooms)
3. Pre-clean movable objects with HEPA vacuums or wet cleaning and remove from the work area to a location designated by the MEC *where friable ACBM is involved*.
4. Pre-clean fixed items which must remain in the work area with HEPA vacuums or wet cleaning where friable ACBM is involved.
5. Wrap all fixed objects and equipment which will remain in the work area with a minimum of one layer of six mil poly.
6. Remove/protect carpeting per environmental scope sheets.
7. Pre-clean the work area with HEPA vacuums or wet cleaning.
8. Seal off all windows, corridors, doorways, skylights, ducts, grilles, diffusers, and other penetrations or openings in walls, ceilings and floors with 6-mil poly and tape.
9. Cover floors with two layers of fire-retardant 6-mil poly with seams staggered and taped, and extending 12" up walls. Cover walls with two layers of 4-mil poly, with each wall poly overlapping each floor poly layers by 12".
10. Asbestos materials shall not be disturbed during the preparation phase.
11. Suspended ceilings shall remain in place until preparation phase is complete. Remove/protect ceiling tile per environmental scope sheets.
12. Maintain emergency and fire exits.
13. Install a five chamber Worker Decontamination Enclosure System, consisting of clean room, shower room, and dirty room separated by airlocks at least 3' wide, all with curtained doorways, of sufficient size to serve the size of the crew, and with all features required by IDPH rules.
  - a. Where a remote decon unit is used (i.e. non-friable ACBM and TSI glovebag

operations), the AC shall:

- 1) set up the decon unit within the work area barriers
  - 2) establish a negative pressure of at least 0.02" water column (wc) between the dirty room and adjacent spaces, including the clean room
  - 3) provide at least 4 air changes per hour within the decon unit
  - 4) use a double suiting procedure where the workers proceed to the work area exit, HEPA-vacuum gross debris from their persons using a "buddy system" put on a clean suit (either over their dirty suit or after removing the dirty suit), assure that their footwear are free of ACM contamination, and follow a designated path to the remote decon unit.
  - 5) Once in the decon unit, follow normal decontamination procedures.
14. Install an Equipment Decontamination Enclosure System, consisting of a washing station and a holding area, with curtained doorways and a lockable door.
  15. Maintain a negative pressure of at least 0.02" water column (wc) between each contained area and adjacent spaces 24 hours a day using negative air machines vented to the outside, from the start of abatement work to final clearance. Backup negative air machines shall be available onsite in case of machine failure.
  16. Once operational, the system shall be inspected daily with smoke tubes by the contractor. Damages and defects will be repaired immediately upon discovery.

C. Exterior Preparation (for areas that interface with interior work)

1. 6 mil plastic sheeting shall be placed over the ground, foundation, or other surfaces below the abatement area.
2. Unauthorized entry shall be prevented by using appropriate barriers, such as warning tape, fencing, or other suitable barriers.
3. Nearby air intakes, grilles, and other openings into the building interior shall be sealed off with poly and tape.
4. The contractor shall be responsible for cleanup of any adjacent areas that become contaminated as a result of the abatement activities at no additional cost to the building owner.

3.8 Abatement Procedures

A. Removal:

1. Asbestos materials shall be adequately wetted and kept adequately wet during removal.
2. ACM waste shall be bagged or containerized as it is removed.
3. Work areas shall be kept wet until visible material is cleaned up.

B. Encapsulation:

1. Damaged or missing areas of existing materials shall be repaired with non-asbestos substitutes, where appropriate.
2. Loose or hanging ACM shall be removed using appropriate removal procedures.
3. Bridging encapsulants shall be applied in accordance with manufacturer's instructions.
4. Penetrating encapsulants shall be applied to penetrate existing materials to the substrate.
5. Encapsulants shall be applied with airless spray equipment.
6. Encapsulated ACM shall be labeled as asbestos to prevent future unprotected

disturbance.

C. Enclosure:

1. Locations where openings for hangers, supports, framing, or other attachments must be made in the ACM must be misted with water and kept damp to reduce airborne fiber release. Tools used to drill, cut, or otherwise disturb the ACM during attachment installation shall be equipped with a HEPA-filtered local exhaust system.
2. Loose or hanging ACM shall be removed using removal procedures.
3. Damaged areas shall be repaired with non-asbestos materials.
4. Utilities or other items requiring access shall be relocated outside of the enclosure area. Once enclosures are installed, they shall not be opened or disturbed.
5. Enclosure materials shall be impact resistant and provide an airtight barrier.
6. Enclosures shall be labeled that they contain asbestos materials to prevent future unprotected disturbance.

3.9 Cleaning and Decontamination: Cleaning and decontamination of abatement areas, excluding glovebag areas, are as follows:

A. All visible accumulations of ACM, debris, tools, and unnecessary equipment shall be removed from the work area.

B. First clean:

1. Wet clean all surfaces and remove excess water.
2. Wait 12 hours before proceeding further to allow dust and fibers to settle.
3. Remove outer layer of poly and dispose as ACM waste.
4. Completion of First Clean shall be determined and documented by the MEC.

C. Second clean:

1. Wet clean all surfaces and remove excess water.
2. Wait 12 hours before proceeding further to allow dust and fibers to settle.
3. Remove inner layer of poly and dispose as ACM waste.
4. Critical barriers on windows, doors, penetrations, and other openings shall remain in place and negative air system shall remain in continuous operation until final clearance tests have passed.
5. Completion of Second Clean shall be determined and documented by the MEC.

D. Third clean:

1. Wet clean all surfaces and remove excess water.
2. Wait 12 hours before proceeding further to allow dust and fibers to settle.
3. Remove all tools, cleaning materials, remaining wastes from the work area. Tools and equipment shall be cleaned before removal.
4. Third Clean shall be determined and documented by the MEC.

E. Visual inspection: MEC and contractor shall jointly inspect the work area for visible residue and excess water and, if observed, repeat the clean/12 hour wait cycle until residues are not detected and work area is dry.



- F. Apply lock-down encapsulants where specified in the Documents.
- G. MEC will inform AC if the work area is ready for final clearance testing.

### 3.10 Final Clearance

- A. Final clearance testing (aggressive methods) shall be performed after 12 hours have lapsed since the final cleaning, and when visual inspection has been completed and no visible water or condensation remains.
- B. Work areas with 260 linear feet or 160 square feet or more of ACM shall be tested using aggressive sample collection methods and Transmission Electron Microscopy (TEM) analysis, as required by AHERA and IDPH Section 855.170. The sample set must include at least 5 inside samples, 5 outside samples, 2 field blanks, and 1 sealed blank. NOTE: Large, complicated, or multi-floor contiguous work areas connected by corridors, stairways, or other connections may be tested with a larger “inside” sample set rather than full, multiple TEM tests, so long as the inside sample distribution is reasonably representative of the work area conditions.
- C. Work areas with less than 260 linear feet or 160 square feet may be tested using aggressive sample collection methods and analyzed by Phase Contrast Microscopy (PCM).
- D. If final clearance test(s) fail, the AC is responsible for repeating the cleaning sequence as necessary until final clearance tests are successful. All expenses associated with the collection and analysis of additional final clearance tests are the responsibility of the AC.

### 3.11 Special Procedures: Less stringent requirements may apply in a number of cases.

- A. Variances from IDPH Regulations. Variances may be requested and approved by the IDPH. These less stringent procedures may only be used when they have been requested by the Project Designer and approved by the IDPH on a case-by-case basis.
  - 1. Variances that have been applied for the project will be listed in the Documents. These variances may or may not be approved by the IDPH.
  - 2. The contractor is encouraged to request additional variances it believes will be beneficial to the project. Such requests shall be submitted to the Project Designer (MEC) as a value engineering proposal which references the IDPH regulation section, describes the procedure variations, includes information which supports the efficacy and benefits of the alternative procedures, and offers appropriate cost savings.
  - 3. Otherwise the contractor is required to fully adhere to the requirements of this specification. Failure to obtain a variance shall not constitute a change in the requirements of these documents.
- B. Operations and Maintenance Procedures where minor areas of ACM must be disturbed for building repairs, such as drilling holes in walls or floors, cleaning small areas to allow installation of fixtures, smoke detectors, etc. The Documents will state if these procedures are allowed for a particular project or task.
  - 1. Submit an asbestos notification to the IDPH for quantities over 3 linear or square feet.

2. Licensed abatement workers are required, but a licensed abatement contractor is not mandatory for work less than 3 linear or square feet.
3. Shut down heating, cooling, or ventilating air systems to prevent fiber dispersal to other areas.
4. Seal off openings in the work area, including windows, doorways, vents, and other openings with 6 mil poly sheeting and tape.
5. Lay an impermeable drop cloth under the work.
6. Wear appropriate PPE and at least a 1/2 mask APR respirator. Note that OSHA still requires an exposure assessment and respirators that are appropriate for the expected airborne fiber concentrations.
7. Use wet removal methods.
8. Wet clean work area, leaving no visible residue.
9. Package and dispose of asbestos-containing waste as specified in the waste disposal section.

C. Glovebag Procedure. Glovebags may be used to remove pipe and duct insulation.

1. Normal IDPH Notification requirements apply to quantities of more than 3 linear or square feet.
2. Glovebag removal will require a single layer, 6 mil poly tent containment (mini-containment) with negative pressure air filtration.
3. Monitoring will be performed for each contained area by the MEC:
  - a. 1 personal sample
  - b. 1 area sample
  - c. 1 area sample at each negative pressure machine exhaust
4. Glovebag construction shall be 6 mil poly with seamless bottom, suitable for the intended use (straight runs, fittings, elbows, vertical pipes, etc.) without modification.
5. At least two licensed workers shall perform glovebag operations.
6. Workers shall wear full body PPE and at least a 1/2 mask APR respirator. Note here, too, that OSHA still requires an exposure assessment and respirators that are appropriate for the expected airborne fiber concentrations.
7. Prior to use, all loose or damaged material adjacent to the operation shall be wrapped in two layers of 6 mil poly or otherwise be rendered intact.
8. Work Practices shall include:
  - a. installation to completely cover the circumference of pipe or other structure. Pipe insulation diameter shall not exceed 1/2 the bag working length above the glove sleeves.
  - b. smoke test for leaks and seal any leaks prior to use.
  - c. glove bag shall be single use and not moved once it is placed.
  - d. wet removal methods on the materials to be removed and wet cleaning to remove all visible ACM from the pipe or structure surfaces.
  - e. not to be used on surfaces having temperatures greater than 150<sup>0</sup>F.
  - f. spray down the interior surfaces of the bag, substrate, and removed ACM.
  - g. first and second cleaning, waiting at least 12 hours following each cleaning.
  - h. wet down remaining ACM surfaces or seal with encapsulant.
  - i. seal off the lower portion of the bag containing the ACM waste by twisting several times and sealing with tape.
  - j. collapse glovebag with a HEPA vacuum.
  - k. slip a 6 mil poly waste disposal bag over the glovebag, detach the bag from the

1. pipe, and gooseneck-seal it in the waste disposal bag.
  1. dispose in accordance with this specification.
- D. Resilient Floor Covering. Removal of resilient floor covering will be performed by, as a minimum, those trained in accordance with OSHA Class 2 requirements, using heat guns, infrared heat machines or other methods that remove the floor covering in whole pieces. Buffing machines may not be used for removal of mastic. The contractor shall insure that no damage is caused to the area or equipment below the floor. Abatement procedures are as follows:
1. Submit the Floor Tile Project Notice at least 10 working days prior to the beginning of all asbestos resilient floor covering abatement projects.
  2. Post signs so that the work area cannot be entered from any direction without observing a sign.
  3. Isolate the work area from areas to remain occupied.
  4. Install barriers of six mil plastic sheeting sealed with duct tape at all openings in the work area.
  5. Install a curtained doorway at the entry to the work area, lock out electrical power to the room and supply required power with ground fault interruption protected circuits.
  6. Wear, as a minimum, half-faced dual cartridge NIOSH-approved respirators and double disposable suits.
  7. Remove floor covering without causing excessive breakage. Work will stop and appropriate IDPH design, project management and air sampling will be put in place if excessive breakage occurs (>10% of the removed floor tiles).
  8. Dispose of floor covering and debris as asbestos waste.
  9. HEPA vacuum the work area thoroughly following completion of the removal.
  10. HEPA vacuum surface of protective clothing and dispose of clothing as asbestos waste.
  11. Personal air monitoring will be performed by the contractor in accordance with OSHA.

### 3.12 Waste Disposal and Equipment Load-out

- A. Preparing equipment for load-out.
1. Seal openings to prevent escape of internal contamination; or open up equipment, remove filters, and make equipment interiors accessible for cleaning and decontamination.
  2. HEPA vacuum and wet wipe all equipment before removal
- B. Packaging asbestos wastes:
1. All asbestos-containing wastes, including removed ACM and debris, containment poly, critical barrier materials, suits, respirator filters, vacuum and negative air machine HEPA filters, water filters, and other asbestos-containing items shall be properly packaged for disposal.
  2. Use double 6 mil plastic bags with "gooseneck" seal, or other impermeable containers.
  3. Wrap large or irregular items in 2 layers of 6 mil poly sheeting, seal with tape, and affix required labeling.
  4. Sharp, jagged, or other items (floor tiles, screws, nails, metal debris, wood etc.) that may

puncture poly shall be packaged in rigid impermeable containers such as drums or boxes, or wrapped in burlap or other protective covering before sealing in double bags or double layers of 6 mil poly.

5. Label containers:
  - a. OSHA warning label.
  - b. DOT performance-oriented hazardous material label.
  - c. Name and address of generator and abatement location.
  
- C. Removing items from the work area:
  1. Packaged asbestos wastes, non-porous debris (such as ceiling grid, doors, hardware, and other items that can be decontaminated), and equipment shall be wet cleaned, moved into the equipment decontamination enclosure system, cleaned a second time, and moved into the holding area.
  2. Containers and equipment shall be removed from the holding area by workers in clean PPE and respirators who enter from the uncontaminated side (outside). The equipment decontamination enclosure system shall not be used to enter or exit the work area.
  3. Waste shall be placed in a cart and covered. A plastic runner shall be placed on the floor to the waste storage area. The loaded cart shall be carefully taken to and unloaded into the enclosed waste storage container.
  
- D. Storage of packaged asbestos wastes shall be in a completely enclosed dumpster or other suitable container that can be secured. The secured area shall be kept locked at all times to prevent unauthorized access.
  
- E. Shipment of items from the project.
  1. Decontaminated tools and equipment may be shipped by normal carrier to warehouse, another jobsite, or other destination.
  2. For asbestos wastes:
    - a. Line shipping container with 6 mil poly prior to loading packaged asbestos wastes.
    - b. Post NESHAP placards during loading.
    - c. Persons performing loading operations shall wear PPE and respirators.
    - d. Containers and packages shall be tightly packed together to prevent shifting during transport. Large components or heavy items shall be secured to prevent shifting, and shall not be stacked on top of bags.
    - e. Execute the NESHAP-required Waste Shipment Record (WSR) to be signed by the generator, transporter, and landfill. All WSRs shall be returned to the MEC within 30 days of shipment.
    - f. ACBM waste shall be transported from the work site directly to the landfill.
  
- F. Disposal of packaged asbestos wastes.
  1. Only landfills approved and permitted by Illinois for accepting asbestos wastes may be used for disposal.

### 3.13 Demobilization

- A. MEC shall inspect the work area for evidence of visible debris prior to releasing the area for tear-down. Detection of contamination will require additional cleaning and re-testing of the work area.
- B. Remove critical barriers and seals.
- C. Restore previously-removed items, if specified in the Documents:
  - 1. Re-mount fixtures and other previously dismantled objects.
  - 2. Return moveable objects to their original locations.
  - 3. Install new filters in HVAC systems where filters were previously removed.
  - 4. Re-establish electric systems and other utilities that were shut down or locked out.
- D. A punch list walk-through shall be conducted for each cleared work area within two working days of clearance testing by the MEC, contractor, school engineer, PBC, principal, and AOR. All punch list items shall be completed within five working days of walk through.

END OF SECTION

## SECTION 02132 - ASBESTOS ABATEMENT FOR EXTERIORS

### PART 1 - GENERAL

#### 1.1 Introduction

Exterior building spaces are not covered by Illinois Department of Public Health (IDPH) rules, except for covered hallways or porticos connecting buildings and outdoor mechanical systems which condition indoor air (such as air handling units, air conditioners, cooling towers, etc.), or when interior building spaces are involved.

Roofing, window replacement, exterior transite sheeting, asbestos siding, asbestos-containing paint, caulking, glazing, flashings, cements, or other products installed on the building exterior are subject to Occupational Safety and Health Administration (OSHA) and National Emission Standards for Hazardous Air Pollutants (NESHAP) rules which, in many cases are less rigorous than IDPH requirements. All exterior asbestos abatement activities shall be conducted from the exterior of the building. At no time shall any work activity be staged from the interior of the building. Abatement of roofing materials requires supervision by a competent person that can be employed by the roofing contractor (refer to definition of competent person below). Abatement of these items is specified in this section. Related paragraphs in the Interior Abatement section may be referenced or included where relevant.

#### 1.2 Definitions - In addition to the terms listed below, all definitions in the laws and regulations listed in Section 1.5 are incorporated by reference, whether or not restated herein.

- A. Abatement Contractor (AC) means the entity responsible for performing the work in this section and has the training and accreditation to competently perform the work. This entity will obtain and maintain licenses required for the indoor work in this section.
- B. Architect of Record (AOR) means the entity that assembles the overall documents and bid package, and approves the work.
- C. Asbestos Abatement Supervisor, hereinafter referred to as Supervisor means any person who supervises asbestos abatement workers. This person must be trained, accredited, and meet OSHA competent person criteria for asbestos abatement.
- D. PBC means the entity responsible for overall project coordination and completion.
- E. Chicago Public Schools (CPS) means the owner of the property.
- F. CDOE means Chicago Department of Environment.
- G. Competent person means one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in addition, for roofing materials (considered Class II work) who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent.

- H. Environmental Project Manager (EPM) is the project manager selected by the MEC to perform environmental monitoring and act on behalf of the MEC for PBC or its agents on the project.
- I. General Contractor (GC) means the entity responsible for performing the complete scope of work in the Documents. The GC may elect to self-perform or subcontract out any portion of the work.
- J. HEPA Filter means a High Efficiency Particulate Air filter capable of trapping 99.97% percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- K. IDPH means the Illinois Department of Public Health.
- L. Managing Environmental Consultant (MEC) means the entity with overall responsibility for the environmental aspects of the project, including design, organization, direction, and control as well as investigations, assessments and on-site supervision of project managers.
- M. MSDS means Material Safety Data Sheet, required by OSHA for any chemical in the workplace that that could be expected to cause an exposure to workers during normal use or in emergency situations.
- N. Plasticize means to apply plastic sheeting over surfaces or objects to protect them from contamination or water damage.
- O. PPE (Personal Protection Equipment) means the protective suits, head and foot covers, gloves, respirators and other items used to protect persons from asbestos or other hazards.
- P. RCRA means the Resource Conservation and Recovery Act and associated regulations.
- Q. TCLP means the Toxicity Characteristic Leaching Procedure as specified in EPA 530/SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods 3rd edition, November 1986.
- R. Work Area means the area or areas where asbestos abatement is being conducted.

1.3 Scope of Work - See Drawings.

1.4 Work Included

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

- 1. 01010 - Summary of Work
- 2. 01300 - Submittals

3. 01720 - Project Record Documents
  4. 02131 - Interior Asbestos Abatement
  5. 02133 - Lead-Based Paint Abatement
  6. 07070 - Roofing Removal
- B. Removal of friable and non-friable asbestos-containing materials listed in the Documents, including isolating the work areas, protection of adjacent areas, cleanup, proper packaging and disposal of wastes, and all other steps necessary to complete the scope of work.
- C. Repair or replacement of damaged surfaces, fixtures, or furnishings to restore them to like new condition to the satisfaction of the Architect or PBC or MEC.
- D. When the Documents include lead and asbestos abatement items in the same spaces, typically windows, painted-over transite sheeting, and flashings, the work should be performed in the sequence and combinations that produce the most efficient results, minimize concentrated lead waste volume, and produce the least amount of total waste. That sequence will generally be:
1. Cleanup and removal of lead dust, flakes, chips, peeling paint, and residues most likely to fail a TCLP test.
  2. Removal of asbestos materials and cleanup of visible residues.
  3. Removal of lead-bearing architectural components.
  4. Removal of non-friable asbestos items. If both asbestos and lead are on the same components, for example lead paint and asbestos-containing glazing compound, the components may be removed and disposed with both the lead and asbestos-bearing items intact.
  5. Final cleanup and decontamination of the work space. Final air clearance (asbestos) and wipe samples (lead) may be performed concurrently.
  6. When lead and asbestos final decontamination processes are combined, the more stringent cleanup procedures will apply for both.
  7. Waste disposal.
    - a. Classified waste: loose paint flakes, chips, and dust; lead-specific cleaning supplies; contaminated soil; combined final decontamination supplies; disposable suits, gloves, headcovers, and footcovers; other items that fail a TCLP test.
    - b. Special waste: friable asbestos-containing waste materials and lead-contaminated waste that has passed TCLP or other RCRA tests.
    - c. Construction and demolition (C&D) debris: non-friable asbestos-containing waste materials (such as, but not limited to intact transite, mastics, packing, caulking); lead-bearing architectural components; demolition debris, and other general wastes.
    - d. All asbestos-containing or lead-bearing wastes, regardless of classification, shall be disposed in an IEPA-approved landfill within the State of Illinois to accept asbestos-containing or lead-bearing waste materials.
- E. Compliance with all applicable laws, regulations, standards, and these specifications. In the case of a conflict, the contractor will comply with the most stringent.
- F. All licenses, accreditations, permits, fees, notifications, reports, or other documents required by law, regulation, this specification, or the Documents.



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

#### 1.5 Laws, Regulations and Standards

- A. The following laws, regulations, and standards are incorporated by reference:
  1. 29 CFR 1910 - US OSHA General Industry Standards
  2. 29 CFR 1926 - US OSHA Construction Standards
  3. 29 CFR 1926.1101 - US OSHA Asbestos Construction Standards
  4. 40 CFR Part 61 - US EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP), 11/90 revision
  5. 40 CFR Part 763 Subpart E - US EPA Asbestos Model Accreditation Plan (MAP): Appendix C Interim Final Rule

#### 1.6 Assessment, Monitoring, Testing and Analysis

- A. The MEC will perform inspection, testing and design services prior to the start of work, and during the project, if necessary. The MEC will also perform testing, inspection, and monitoring services during the work and upon its completion:
  1. Prior to the start of the work, the MEC shall
    - a. Identify suspect materials and confirm their asbestos content through review of the school's documentation or by testing;
    - b. Design the project and address any design changes as requested. Approved changes shall be submitted to the IDPH, when necessary.
  2. During the work, the MEC shall:
    - a. Observe the work periodically, with sufficient frequency to ensure contractor compliance.
    - b. Collect area air samples in and around the work area, as needed, to verify exposure conditions.
    - c. Stop the work if airborne asbestos concentrations at the work area perimeter exceed 0.01 f/cc. Contractor will be responsible for taking corrective action to reduce exposure levels and prevent recurrence; cleaning adjacent areas that become contaminated by the asbestos abatement activities.
    - d. Make copies of contractor licenses from the originals.
    - e. Complete design changes that are needed.
  3. Upon completion of the work, the MEC shall:
    - a. Visually inspect for visible dust and debris, and verify the full completion of the work.
    - b. Require contractor to re-clean the area or portions of areas until no visible debris remains.
    - c. Perform clearance air sampling at the completion of the work activities, when

necessary.

- B. The abatement contractor shall provide OSHA compliance air monitoring to determine exposures to its employees in accordance with OSHA 29 CFR 1926.1101. Frequency of monitoring will comply with OSHA requirements for the anticipated and actual exposure levels.
  - 1. A written Exposure Assessment with air sampling and analysis conducted 6 months or less prior to the start of the work to determine the requirements for respiratory protection and frequency of OSHA monitoring for each type of activity. The contractor should note that a Negative Exposure Assessment (NEA) may be possible for these tasks.
  - 2. Analysis may be performed on site.
- C. Credentials required for testing and analysis of PCM air samples:
  - 1. Air sampling shall be conducted by an IDPH licensed Air Sampling Professional.
  - 2. Accreditation by AIHA or AAR; or
  - 3. Participation in the Proficiency Analytical Testing (PAT) program.

1.7 Submittals by the Contractor (submitted to AOR and MEC):

The following shall be submitted to the MEC no less than 10 days prior to the start of the asbestos abatement work activities.

- A. Ten (10) day NESHAP notification to the Illinois EPA and the Chicago Department of Environment when the asbestos quantities reach or exceed 260 linear feet or 160 square feet. Two (2) day IDPH notification with a copy to CDOE for asbestos abatement quantities less than 260 linear feet or 160 square feet.
  - 1. Ten (10) day IEPA Asbestos Notification on revised form, including inspector licensenumber and landfill permit number.
  - 2. Evidence that all abatement contractor employees in the work areas are trained and accredited in accordance with OSHA, NESHAP, and EPA MAP requirements:
    - a. Current Annual refresher training certificate.
    - b. Current IDPH asbestos license
    - c. Current physician's written opinion
    - d. Current respirator fit test for negative pressure respirators when respirators are used.
  - 3. Copy of OSHA Exposure Assessment, with air sampling and analysis conducted 6 months or less prior to the start date of the abatement project.
  - 4. OSHA compliance air monitoring records generated during the project.
  - 5. Waste Shipment Records.
  - 6. Worker license and certification log.
  - 7. Material Safety Data Sheets (MSDS) for chemicals used on site.
  - 8. Work Plan and Schedule.
- B. Prior to beginning work, the AC shall submit required notifications to applicable regulatory agencies and receive an Owners Authorization and Notice to Occupants from Chicago Public Schools for buildings where asbestos abatement will take place. The AC will provide copies

of all regulatory notices to the CPS Environmental Services Manager and the EPM within 24 hours of sending such notices to the regulatory authority. The AC shall not begin a project until such notices are provided to CPS and the EPM.

## PART 2 - PRODUCTS

### 2.1 Tools and Equipment - All equipment shall at least conform to minimum industry standards:

#### A. Equipment:

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

#### B. Tools:

1. Ladders, scaffolding and all other rigging devices shall be constructed in a safe manor meeting all regulatory and permitting requirements.
2. Power tools such as, but not limited to saws, pneumatic chisels, brushes, sanders, and needle guns shall be equipped with shrouds and HEPA-filtered local exhaust systems to capture released particles. Power tools shall also be grounded using a ground fault Circuit Interrupter (GFI) breaker or outlet.

### 2.2 Materials

#### A. Installed materials which become a part of the work such as, but not limited to, encapsulants foam sealants and permanent enclosures shall be of good quality, non-lead-bearing, free of asbestos, and conform to the respective reinstallation specification sections.

1. Contractor shall ensure that encapsulants and sealants used as primers, basecoats, fillers or covering existing materials are compatible with the respective existing or reinstallation materials and their manufacturers' warranties.

#### B. Abatement materials

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

## PART 3 - EXECUTION

### 3.1 Employee Training, Qualification and Medical Screening

- A. Supervisors and Workers shall be trained, accredited, and licensed in accordance with IDPH rules and regulations:
  - 1. Contractor shall keep copies of licenses, initial training course certificate, and most recent annual refresher training certificate at the jobsite at all times for all contractor personnel.
  - 2. A Supervisor (competent person) shall be present at the work site at all times when work under this section is being conducted.
- B. Medical Screening. All contractor personnel shall have a current medical examination in accordance with OSHA requirements. Copies of the Physician's Written Opinions shall be kept on site along with a current fit test certificate.

### 3.2 Permissible Exposure Limits

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

### 3.3 Exposure Assessment and Monitoring

- A. The abatement contractor shall make an assessment of the airborne exposures. Assessment shall conform to OSHA requirements and may be based upon:
  - 1. Initial monitoring of representative workers who the contractor believes are exposed to the greatest airborne concentrations of asbestos, or
  - 2. Past monitoring (within the past 12 months) or objective data for conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions to be used for this Documents, or
  - 3. In the absence of an exposure assessment the contractor shall perform the work in full negative pressure containment with Type C pressure-demand respirator with auxiliary SCBA escape bottle.
- B. The contractor shall perform personal monitoring in accordance with the following requirements:
  - 1. Initially, to establish an exposure assessment when past monitoring or objective data are not available for an initial determination.
  - 2. Daily, if the exposures are, or are expected to be, above the PEL of 0.1 f/cc.
  - 3. Periodically if the exposures are, or are expected to be, below the PEL.
  - 4. Whenever there has been a change of equipment, process, control, personnel, or a new task has been initiated that may affect employee exposures, the exposure assessment

shall be updated, and monitoring shall be reinstated if exposures are unknown or are expected to exceed the PEL.

5. Area Monitoring is required at the perimeter of the work area to verify that exposures to adjacent areas are below the PEL.

### 3.4 Respiratory Protection

Respiratory protection shall be worn by all persons potentially exposed to airborne asbestos fibers from the start of the abatement project until air monitoring analysis results prove otherwise.

### 3.5 Hygiene Practices

- A. Eating, drinking, smoking, chewing gum or tobacco, and applying of cosmetics are not allowed in the work area.
- B. All persons entering the work area shall wear appropriate PPE.
- C. When the use of a Personnel Decontamination Enclosure System is deemed necessary by the MEC, the abatement contractor shall follow all entry and exit procedures posted in the Personnel Decontamination Enclosure System.
- C. Personal Protection Equipment (PPE) shall include:
  1. Full body disposable suits, headgear, and footwear.
  2. Gloves.
  3. Hard hats.
  4. Non-disposable footwear and clothing shall remain in the work area and shall be disposed of as contaminated waste when the job is completed.
  5. Authorized visitors shall be provided with suitable PPE when required in the work area.
  6. PPE is required when exposures are, or are expected to be above the PEL.
- D. A Personnel Decontamination (decon) Facility is required when worker exposures are expected to be above the PEL. The Decontamination unit may be remotely located if not feasible to locate adjacent to the work area.
  1. Establish a negative pressure of at least 0.02 inch wc between the dirty equipment room and adjacent spaces, including the clean room. Assume Negative Air Machines (NAM) operate at 80% design capacity.
  2. Provide at least 4 air changes per hour within the decon unit
  3. All personnel shall use a double-suiting procedure for traveling between work areas and decon. Persons shall HEPA-vacuum the exterior of their disposable suits at the entry to the work area, put on a clean suit over the existing suit, and proceed to the decon unit for shower decontamination and change into street clothes.
- E. To exit, persons shall HEPA-vacuum down clothing at the work area entry, and leave the work area. When disposable suits are used, they shall be HEPA-vacuumed, stripped off, and deposited in an asbestos disposal bag. Personnel may then leave the work area.

### 3.6 Prohibited Activities

- A. Dry removal or dry sweeping, except:
  - 1. During freezing weather. In this case, temperature and weather conditions must be recorded at the start, during, and at the end of the shift.
  - 2. On roofs with 3:1 slope or greater. In this case, roofing shall be removed in an intact condition, as much as possible.
  - 3. When equipment damage or other hazard exists. In this case, written permission from IEPA is required prior to performing dry removal.
- B. Use of compressed air for cleaning.
- C. Use of high speed power tools not equipped with a HEPA-filtered local exhaust system.
- D. Eating, drinking, smoking, chewing gum, or applying cosmetics in the work area.
- E. Removing respirators or other PPE in the work area.

### 3.7 Work Area Isolation and Preparation

- A. General Preparation
  - 1. Post caution signs meeting the specifications of OSHA 29 CFR 1926.1101 (k)(6) at any location and approaches to a location where airborne concentrations of asbestos may exceed ambient background levels.
  - 2. Secure the work area from entry by unauthorized persons.
- B. Exterior Preparation
  - 1. 6 mil plastic sheeting shall be placed over the ground, foundation, or other surfaces below the abatement area.
  - 2. Unauthorized entry shall be prevented by using appropriate barriers, such as warning tape, fencing, or other suitable barriers.
  - 3. Nearby air intakes, grilles, windows, and other openings into the building interior above, below, or beside the work area that could be exposed to released airborne dust shall be closed or otherwise sealed off with poly and tape.
  - 4. All electric power in the work area shall be protected with Ground-Fault Circuit Interrupters.

### 3.8 Abatement Procedures

- A. General Removal Requirements:
  - 1. Asbestos materials shall be wetted and kept wet during removal.
  - 2. ACM shall be bagged or containerized as it is removed. Wastes shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it shall be lowered via covered, dust-tight chute, crane, hoist, or other means that prevent the wastes from being dropped or thrown.

3. Appropriate OSHA protection shall be provided when working from exterior access:
  - a. Scaffolding shall be equipped with handrails and midrails designed to provide fall protection, or full-body safety harnesses shall be worn and tied off to a secure anchor point.
  - b. Workers in manlifts shall wear full body harnesses and tie to the tie-off point provided on the manlift basket whenever the basket is elevated from ground level.
  - c. The contractor shall ensure that scaffolding, manlifts and the workers erecting and using the equipment meet all federal, state and local regulations and requirements including the acquisition of all required permits for the erection and use of such equipment.
  
- B. Window Replacements: Asbestos-containing materials are most likely to be found in exterior caulking and glazing putty. Windows may be removed under this section if ACM is handled from the building exterior. If ACM materials must be accessed from inside the building or ACM wastes must be transported through the building interior, then IDPH-regulated Interior Asbestos Abatement for Interiors, Section 02131, requirements will apply at no additional cost to the building owner. For exterior work:
  1. Close windows and seal from the inside by covering with 6 mil poly and tape, or by applying tape directly to window joints and seams.
  2. Any ACM not required to be disturbed for window removal should be left in place (e.g. window pane glazing).
  3. ACM that must be disturbed (e.g. caulking at the edge of the window frame) must be removed completely, including three-dimensional residues.
  4. Collect debris and deposit in asbestos waste bags as the work proceeds. Do not allow wastes to accumulate on surfaces.
  5. Abate ACM and LBP on all window components to remain in place.
  
- C. Roofing
  1. General: Remove ACM roof mastics, cements, underlayments, and flashings in an intact state to the extent feasible. Asbestos-containing shingles may occasionally break even when removed carefully. The fact that otherwise intact roofing materials become separated or broken does not by itself render them non-intact. However, if they become pulverized, reduced to powder or dust, they have become non-intact.
    - a. The contractor shall take care to minimize the amount of roofing material damage, or;
    - b. If the materials are rendered non-intact, the contractor shall employ methods to contain the dust and debris and utilize hygiene practices appropriate for friable (OSHA Class I) ACM, including PPE, decontamination units, and monitoring. Monitoring may include area samples at the work area perimeter to determine that airborne asbestos fibers are not being released in concentrations above the PEL.
  2. Built-up roofing and asphalt shingles:
    - a. Power cutting machines shall be equipped with a HEPA-filtered dust collection system and shall be misted during use.
    - b. Dust generated by the cutting operation shall be collected with HEPA vacuums

or wet cleaning methods.

3. Rigid roofing materials, such as cement asbestos shingles: remove intact and minimize breakage.
- D. Transite, Galbestos sheeting (galvanized metal with a baked-on asbestos paint), Asbestos/Cement pipe, or other rigid panels shall be removed using wet methods.
- E. Other
  1. Non-LBP paint and other coatings, electric cable insulation or joint coverings, and other miscellaneous materials that are to be removed with the substrate or that can be removed without becoming friable may be removed as intact (OSHA Class II, EPA NESHAP Category I or II non-friable) in accordance with procedures described in the General and Roofing Sections 3.8 A. and C.
  2. Non-LBP paint, coatings, and other miscellaneous materials that must be removed from the substrate or that otherwise will become friable must be removed as non-intact (OSHA Class I, EPA NESHAP friable) in accordance with procedures described in General and Roofing Sections 3.8 A. and C.1.b.

### 3.9 Cleaning and Decontamination

- A. All visible accumulations of ACM, debris, tools, and unnecessary equipment shall be removed from the work area.
- B. Protective poly shall be folded in on itself, rolled up, placed in asbestos disposal bags, and disposed as asbestos waste.
- C. Surfaces which have been exposed to friable ACM or its dust shall be HEPA vacuumed
- D. Dry sweeping of surfaces which have been exposed to friable ACM or its dust is not permitted.

### 3.10 Final Clearance

- A. Cleaning may be discontinued when there is no visible debris and area air monitoring verifies that exposures are below the PEL. If any area air monitoring analysis results demonstrate results are at or above the PEL, the abatement contractor is responsible for repeating the cleaning as necessary until tests are satisfactory. All expenses associated with the collection and analysis of additional air monitoring tests are the responsibility of the abatement contractor.

### 3.11 Waste Disposal and Equipment Load-out

- A. Roofing waste may be loaded in bulk into lined enclosed receptacles, such as dumpsters or trailers. Receptacles shall be closeable and lockable to provide security and to prevent air emissions.
- B. Packaged asbestos wastes:



1. Asbestos-containing wastes, including removed ACM and debris, poly, critical barrier materials, suits, respirator filters, vacuum HEPA filters, water filters, and other asbestos-containing items shall be properly packaged for disposal.
  2. Use 6 mil plastic bags with gooseneck seal, or other impermeable containers.
  3. Wrap large or irregular items in 6 mil poly sheeting and seal with tape.
  4. Sharp, jagged, or other items that may puncture poly shall be packaged in rigid impermeable containers such as drums or boxes, or wrapped in burlap or other protective covering before sealing in bags or poly sheeting.
  5. Label containers for friable ACM waste:
    - a. OSHA warning label.
    - b. DOT performance-oriented hazardous material label.
    - c. Name and address of generator and abatement location.
- C. Removing items from the work area:
1. Packaged asbestos wastes shall be HEPA-vacuumed before removing from the work area.
- D. Storage of packaged asbestos wastes shall be in a completely enclosed dumpster, or other suitable container that can be secured. The secured area shall be kept locked at all times to prevent unauthorized access.
- E. Shipment of items from the project.
1. Decontaminated tools and equipment may be shipped by normal carrier to warehouse, another jobsite, or other destination.
  2. For asbestos wastes:
    - a. Line enclosed shipping container with 6 mil poly prior to loading packaged friable asbestos wastes.
    - b. Post NESHAP placards during loading of friable asbestos wastes.
    - c. Execute the NESHAP-required Waste Shipment Record (WSR) to be signed by the generator, transporter, and landfill. All WSRs shall be returned to the MEC within 30 days of shipment.
    - d. ACM waste shall be transported from the work site directly to the landfill.
- F. Disposal of packaged asbestos wastes.
1. Only landfills approved and permitted by Illinois for accepting asbestos wastes may be used for disposal.
- G. A punch list walk-through shall be conducted for each cleared work area within two working days of clearance testing by the MEC, contractor, school engineer, property advisor, principal, and AOR. All punch list items shall be completed within five working days of walk through.

ATTACHMENT:

END OF SECTION

## SECTION 02133 – LEAD-BASED PAINT MITIGATION/ABATEMENT

### PART 1 - GENERAL

#### 1.1 Introduction

- A. The Illinois Department of Public Health regulations apply to all facilities occupied by children 6 years old or younger. The Chicago Department of Public Health inspects for, and regulates, lead contamination in all Chicago school facilities. Mitigation or abatement of all interior and exterior lead-bearing substances is covered by these specifications.

#### 1.2 Definitions: In addition to the terms listed below, all definitions in the laws and regulations listed in Section 1.5 are incorporated by reference, whether or not restated herein.

- A. Abatement means the work area preparation, complete removal of lead-bearing substances, and cleanup of surrounding work area to prescribed levels of decontamination.
- B. Abatement Contractor (AC) means the entity responsible for performing the work in this section, with the training and accreditation to competently perform the work. This entity will obtain and maintain any licenses required for the work in this section.
- C. Architect of Record (AOR) means the entity that assembles the overall documents and bid package, and approves the work.
- D. CDPH means the Chicago Department of Public Health.
- E. Environmental Project Manager (EPM) is the person selected by the MEC to perform environmental monitoring and act on behalf of the CPS or its agents on the project.
- F. General Contractor (GC) means the entity responsible for performing the complete scope of work in the Documents. The GC may elect to self-perform or subcontract out any portion of the work. If the GC acts as the AC, it must have the same credentials, training, accreditations and licenses required by the AC.
- G. HEPA Filter means a High Efficiency Particulate Air filter capable of trapping 99.97% percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- H. IDPH means the Illinois Department of Public Health.
- I. Lead Abatement Contractor/Supervisor, hereinafter referred to as “supervisor” means any person who supervises lead abatement workers. This person must be trained, accredited, and licensed as required, and must also meet OSHA “competent person” criteria for lead abatement.

- J. Lead-Based Paint means paints or coatings that are lead bearing substances as defined by IDPH regulations referenced in section 1.5.
- K. Lead Bearing Soil means soil containing an amount of lead in excess of applicable guidelines.
- L. Lead Bearing Substance means any dust on surfaces or furniture or other non-permanent items and any paint or other surface coating material as defined by IDPH regulations referenced in section 1.5.
- M. Managing Environmental Consultant (MEC) means the entity with overall responsibility for the environmental aspects of the project, including design, organization, direction, oversight and control as well as investigations, assessments, and supervision of project manager.
- N. Mitigation means work area preparation to repair lead-bearing substances to an intact state so that the lead bearing substance does not pose an immediate health hazard.
- O. MSDS means Material Safety Data Sheet, required by OSHA for any chemical in the workplace that that could be expected to cause an exposure to workers during normal use or in emergency situations.
- P. OSHA means the federal Occupational Health and Safety Administration
- Q. Owners Representative (OR) means the entity responsible for overall project coordination and completion.
- R. Plasticize means to apply plastic sheeting over surfaces or objects to protect them from contamination or water damage.
- S. RCRA means the Resource Conservation and Recovery Act and associated regulations as referenced in section 1.5.
- T. TCLP means the Toxicity Characteristic Leaching Procedure as specified in EPA 530/SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods 3rd edition, November 1986
- U. Wet Cleaning means cleaning all surfaces with a phosphate-free lead dissolving detergent.
- V. Work Area means areas where lead abatement or mitigation activities are conducted.
- W. Work Site means the room or rooms undergoing lead abatement or mitigation activities. All closets/book rooms/coat hanger rooms/vestibules/washrooms within a room are considered part of the work site in which mitigation work has been identified on the drawings, whether or not they are numbered separately.

### 1.3 Work Included

- A. The work includes all labor, equipment, materials, and supplies necessary to perform the Scope of Work in the Documents by the procedures described herein. The contractor, by

submitting a bid for the work, represents itself as knowledgeable and expert in the performance of the work, and includes all things usually and customarily necessary to provide a complete and finished job, whether specifically mentioned or not. Related work may be shown in other related documents prepared by others, if applicable and as listed below:

1. 01010 - Summary of Work
  2. 01300 - Submittals
  3. 01720 - Project Record Documents
  4. 02131 - Interior Asbestos Abatement
  5. 02132 - Exterior Asbestos Abatement
  6. 02134 – Animal Excrement and Carcass Abatement
  7. 09900 - Finish Painting
  8. 09901 - Renovation Painting
  9. 09910 - Surface Preparation for Renovation Painting
- B. Clean-up of lead-bearing dust, flakes, and residues; mitigation or abatement of paint, architectural components, substrates, or other lead-bearing items listed in the Documents including pre-cleaning, moving of furnishings, establishing regulated areas, isolating the work areas, protection of adjacent surfaces, containment when required, cleanup and decontamination to the specified clearance levels, proper packaging and disposal of wastes, and all other steps necessary to complete the scope of work.
- C. Repair or replacement of damaged surfaces, fixtures, or furnishings to restore them to their pre-existing condition to the satisfaction of the OR, MEC and school engineer.
- D. When the Documents include lead and asbestos abatement items in the same spaces, they should be performed in the sequence and combinations that produce the most efficient results and the least amount of total waste. That sequence will generally be:
1. Cleanup and removal of failed or delaminated friable asbestos-containing debris, if any.
  2. Cleanup of lead dust, flakes, chips, and residues. If these lead wastes are mixed with asbestos debris, they must be disposed together as regulated lead waste or asbestos waste depending on TCLP results.
  3. Removal of friable asbestos materials and cleanup of visible residues.
  4. Removal of architectural components with lead-based paint still adhered, such as wood trim, doors, plaster, drywall, window frames, etc.
  5. Removal of non-friable asbestos materials from the exterior. If both asbestos and lead are on the same components, for example lead paint and asbestos-containing glazing compound, the components may be removed and disposed as construction debris as long as both the lead- and asbestos-bearing materials remain intact.
  6. Removal of lead-based paint, coatings, or surfacing material.
  7. Final cleanup and decontamination of the work space. Final air clearance (asbestos) and wipe samples (lead) may be performed concurrently.
  8. When lead and asbestos work is combined, the more stringent regulations and procedures will apply for both.
  9. Waste disposal.
    - a. Classified waste: loose paint flakes, chips, and dust; lead cleaning and decontamination supplies; combined final decontamination supplies;

contaminated soil; disposable suits, gloves, head covers, and foot covers; respirator, vacuum, or negative air machine filters; or other items likely to fail a TCLP or RCRA test.

- b. Special waste: asbestos-containing waste materials and lead-contaminated waste that has passed TCLP or other RCRA tests.
  - c. Construction and demolition (C&D) debris: lead-bearing architectural components; cleaned poly sheeting from lead projects; concrete and lumber without tile or mastic attached, demolition debris, and other general wastes.
  - d. All asbestos-containing or lead-bearing wastes shall be disposed in a facility permitted to accept asbestos-containing or lead-bearing waste materials.
- E. Compliance with all applicable laws, regulations, standards, and these specifications. In the case of a conflict, the contractor will comply with the most stringent.
- F. All licenses, accreditations, permits, notifications, reports, or other documents required by law, regulation, this specification, or the Documents.

1.4 Scope of Work: Refer to Environmental Scope forms CPS-E30.1 included in Attachment A.

#### 1.5 Laws, Regulations, and Standards

- A. CPS contractors shall maintain compliance with all applicable current laws, regulations, and standards including, but not limited to those listed below which are incorporated by reference:
- 1. 410 ILCS 45: Illinois Lead Poisoning Prevention Act
  - 2. 7-4-110 & 7-4-120: Municipal Code of the City of Chicago
  - 3. 77IAC845: Illinois Lead Poisoning Prevention Code (Revision 8/1/2000)
  - 4. 29 CFR 1910: US OSHA General Industry Standards
  - 5. 29 CFR 1926: US OSHA Construction Standards
  - 6. HUD Guidelines: Lead Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, except Chapter Seven (1995); Chapter 7 of the Guidelines, Lead Based Paint Inspection (Revised, 1997)
  - 7. 40 CFR Part 61: US EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP)
  - 8. 40 CFR Part 261: Identification and Listing of Hazardous Waste (Resource Conservation and Recovery Act, RCRA)
- B. Regulatory changes shall be incorporated into this specification on their effective date. Contractors shall reflect these changes into ongoing projects without any additional notice or cost to Chicago Public Schools.

#### 1.6 Assessment, Monitoring, Testing, and Analysis

- A. The MEC will perform inspection, testing, and monitoring services during the work and upon its completion:

1. Testing of coatings, soils, dust, and debris to determine the presence of lead or other hazardous substances.
  2. Area air monitoring during the work to determine the airborne concentrations of lead inside and outside of the work area. The EPM shall stop the work if airborne lead concentrations outside the work area exceed the OSHA Action Level of 30 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ) as an 8-hour time-weighted average. The work may re-start when the source of lead release has been identified and resolved, and corrective measures have been instituted to prevent recurrence.
- B. The Abatement Contractor shall perform:
1. An Exposure Assessment prior to the start of the work to determine the requirements for respiratory protection and frequency of OSHA monitoring for each type of activity.
  2. Perform OSHA compliance air monitoring to determine exposures to its employees in accordance with regulations referenced in section 1.5.
- C. Credentials required for analysis of lead:
1. Accreditation by AIHA or AALA; or
  2. Participation in the Environmental Lead Proficiency Analytical Testing (ELPAT) program or Environmental Lead Laboratory Accreditation Program (ELLAP); or
  3. Participation in the Proficiency in Analytical Testing (PAT) for metals analysis.

#### 1.7 Submittals

- A. The Abatement Contractor (AC) shall submit the following information to the EPM:
1. Written notification to Illinois Department of Public Health
  2. Written Notification to CDPH.
  3. Evidence that all contractor employees in the work areas are licensed, trained and accredited in accordance with OSHA, NESHAP, and EPA MAP requirements:
    - a. Current refresher training certificate.
    - b. Current IDPH lead license
    - c. Current physician's written opinion
    - d. Current respirator fit test data.
  4. Copy of OSHA Exposure Assessment, if available.
  5. OSHA compliance air monitoring records generated during the project.
  6. Waste Shipment Records.
  7. Worker license and certification log.
  8. Material Safety Data Sheets (MSDS) for chemicals used on site.
  9. Work Plan and Schedule.
  10. Laboratory or analyst credentials and proficiency certificates for contractor samples.
- B. Prior to beginning work, the AC shall submit required notifications to applicable regulatory agencies and receive an Owners Authorization and Notice to Occupants from Chicago Public Schools for buildings where lead mitigation or abatement will take place. The AC will provide copies of all regulatory notices to the CPS Environmental Services Manager and the EPM within 24 hours of sending such notices to the regulatory

authority. The AC shall not begin a project until such notices are provided to CPS and the EPM.

## 1.8 Recordkeeping

### A. AC shall retain records for 6 years:

1. name and address of the contractor who performed the project
2. location of the project
3. summary of abatement techniques used
4. location of the disposal site for lead-based substances removed from the work site
5. starting and completion dates of the lead abatement project

## PART 2 - PRODUCTS

### 2.1 Tools and Equipment: All equipment shall at least conform to minimum industry standards.

#### A. Equipment:

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

#### B. Tools:

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

### 2.2 Materials

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

B. Abatement materials

1. Poly sheeting for all applications shall be 6 mil nominal thickness for all applications.
2. Tape shall be 2" or 3" tape suitable for joining poly seams and attaching poly sheeting to surfaces.
3. Spray adhesives shall be non-flammable and free of methylene chloride solvents.
4. Chemicals used for LBP removal and cleanup shall be free of methylene chloride solvents. The chemicals shall be low-odor and free of volatile compounds.
5. Disposal bags shall be 6 mil where used for single-bagging, and minimum 4 mil where used for double-bagging.
6. Disposable suits, hoods, and foot coverings shall be TYVEK or similar.
7. Solvents shall be compatible with any primers, paints, coatings, or other surfacing materials to be installed following their use.
8. Cleaning solutions shall cause lead to chelate, precipitate, or otherwise effectively release lead from surfaces. Cleaning solutions shall not leave residue on surfaces to be painted.

### PART 3 - EXECUTION

#### 3.1 Employee Training, Qualification and Medical Screening

- A. Supervisors and Workers shall be trained, accredited, and licensed in accordance with IDPH rules.
  1. Contractor shall keep current, up-to-date copies of licenses at the job site at all times.
  2. A licensed supervisor (competent person) shall be present at the work site at all times when work under this section is being conducted.
- B. Medical Screening shall be instituted for contractor's employees in accordance with regulations referenced in section 1.5. Medical certificates shall be current.

#### 3.2 Permissible Limits

- A. Permissible Limits of lead in lead bearing substances. Substances with lead content below the following levels are not regulated and are not subject to the requirements of this section:
  1. 5,000 parts per million (ppm), or 0.5% lead by weight in any substance. However, note that OSHA regulations apply to any operation that releases lead into the air in concentrations in excess of the action level of  $30 \mu\text{g}/\text{m}^3$  (see ¶B.1. below), and the CDPH will require remedial action when dust contains greater than  $40 \mu\text{g}/\text{sf}$  (see ¶A.4 below) of surface area. Actions such as sandblasting, dry sanding, or other dry aggressive abrasive disturbances can generate lead concentrations greater than either of these limits on substances with lower lead contents and, in such instances, will be required to adhere to this specification, regardless of substance lead content.
  2. 400 micrograms per gram ( $\mu\text{g}/\text{g}$ ) of soil in high contact play areas.
  3. 400 micrograms per gram ( $\mu\text{g}/\text{g}$ ) of soil in other areas.
  4. 40 micrograms per square foot ( $\mu\text{g}/\text{sf}$ ) of surface area of dust on interior floors.
  5. 200 micrograms per square foot ( $\mu\text{g}/\text{sf}$ ) of surface area of dust on other surfaces.



B. Permissible Exposure Limits for contractor employees:

1. No person shall be exposed to a lead concentration in excess the regulations referenced in section 1.5
2. Where exposures exceed regulated levels, medical monitoring shall be instituted by the AC in accordance with the regulations referenced in section 1.5.

3.3 Exposure Assessment and Monitoring

A. The AC shall make an assessment of the exposures expected by the tasks to be used for the scope of work listed in the Documents. Assessment may be based upon:

1. Initial monitoring of representative workers who the contractor believes are exposed to the greatest airborne concentrations of lead, or
2. Past monitoring (within the past 12 months) or objective data for conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions to be used for this Documents, or
3. In the absence of an exposure assessment or monitoring, the contractor shall assume the following exposure conditions:
  - a.  $\leq 400 \mu\text{g}/\text{m}^3$  for manual demolition of lead-bearing substances (i.e., drywall, other architectural components), manual scraping, manual sanding, heat gun use, and power tool cleaning with dust collection systems, or any other task where there is reason to believe an employee may be exposed to airborne lead.
  - b.  $\leq 2,500 \mu\text{g}/\text{m}^3$  for lead burning, rivet busting, power tool cleaning without dust collection systems, cleanup of dry spent abrasives, or movement or removal of abrasive blasting enclosures.
  - c.  $> 2,500 \mu\text{g}/\text{m}^3$  for abrasive blasting, welding, cutting, and torch burning.

B. The contractor shall perform personal monitoring in accordance with the regulations referenced in section 1.5

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

3.4 Respiratory Protection

A. Respiratory protection shall be worn in accordance with all applicable regulations noted in section 1.5.

3.5 Hygiene Practices

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

- B. A changing area and shower shall be provided for changing into and removing personal protective clothing, and for showering or washing before leaving the work area. Any person leaving the work site or work area shall rinse his or her mouth with potable water and wash hands and face thoroughly before eating drinking, or smoking. A portable lavatory facility, potable water supply, or portable decontamination unit shall be provided by the contractor for the washing of face and hands before any mitigation and/or abatement activities are started. School lavatory facilities shall not be used.
- C. Equipment decontamination procedures shall be employed to prevent the spread of lead contamination. Disposable items shall not be reused and shall be disposed of properly.
- D. Personal Protection Equipment (PPE) shall include:
  - 1. Full body suits with hoods and shoe covers. Tyvek or similar disposable suits may be worn only once, and must be disposed in accordance with the Waste Disposal section.
  - 2. Appropriate PPE shall be used as required by regulations referenced in section 1.5 and established industry practice.

### 3.6 Prohibited Activities

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

### 3.7 Work Area Isolation and Preparation

- A. General Preparation
  - 1. Post caution signs at all entrances and exits to the work area in accordance with OSHA rules:
    - a. at least 20" x 14"
    - b. date and location of the lead abatement project
    - c. Wording at least 2" high stating, "Caution, Lead Hazard, Do Not Remain in Work Area Unless Authorized"
  - 2. Secure the work area from entry by children, pregnant women, school staff or other unauthorized persons.
  - 3. Close off the work site from other portions of the building by closing doors tightly, taping shut when necessary, or with 6 mil poly z-flap curtains over doorways or entrances to the work site.
  - 4. At work area exit, provide walk-off pan, wet towel, or other means to prevent tracking lead contamination to other parts of the facility. A protective liner that is watertight shall be placed under the walk-off pan, wet towel, to prevent damage to the underlying surface.

B. Interior Preparation

1. Furniture, personal items, and other moveable objects in the work site shall be protected with 6 mil poly sheeting and sealed with tape, or moved from the work site and stored in a location designated by the MEC. Items shall be cleaned before being moved to another area to prevent cross-contamination.
2. Turn off all forced air ventilation and seal exhaust and intake points in the worksite.
3. Turn off electrical circuits in the work area to isolate them from contact. Provide temporary power equipped with Ground-Fault Circuit Interrupter (GFCI) devices to prevent electric hazards in the wet working environments. Power cords must be in good condition, not spliced, not more than 100 feet long, and shall be suspended off the floor and out of workers' way to protect the cords from damage. Cords must not be fastened with staples, hung from nails, or suspended with wire.
4. Seal the opening seams of all food storage units, such as cabinets or refrigerators, or cover with poly sheeting taped securely in place.
5. Cover all objects that cannot be moved, such as radiators, stoves, cabinets, built-in furniture, bookcases, or other stationary items with 6 mil plastic sheeting taped securely in place.
6. If required by the scope of work, remove all carpeting from the work site. Lightly mist with water prior to removal to prevent lead dust exposure. Carpeting shall be professionally cleaned or replaced, if required by scope of work.
7. Cover and protect floors in the work site with 6 mil plastic sheeting, sealed with tape. Additional protection may be required to protect flooring materials from potential damages resulting from the mitigation/abatement processes. All additional protection shall be provided as needed to ensure that all building surfaces will be adequately protected during the mitigation/abatement processes and be included in the base bid.
8. Establish a negative pressure system to prevent contaminated air from escaping from the work site to uncontaminated areas, and consisting of:
  - a. Negative air machines (NAMs) exhausted from the work site, and vented to the outside of the building whenever possible.
  - b. Provide sufficient number of NAMs to provide a negative pressure of 0.02" wc between the work area and adjacent spaces, and 4 air changes per hour. Assume NAMs operate at 80% of design capacity. At least one backup NAM shall be available per work site.
  - c. The negative air system shall remain in continuous operation until cleanup and clearance is achieved.

C. Exterior Preparation

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

- 3.8 Lead Mitigation may be used as an interim method for repairs to lead-bearing surfaces to stabilize, secure, or cover them.
- A. Work area preparation shall comply with paragraph 3.7 A. of this section.
  - B. All loose paint, coatings, or coverings that contain lead or are applied to a lead-bearing surface shall be moistened and carefully scraped from surfaces back to where materials are solidly adhered.
    - 1. Lead-based paint mitigation practices shall be compatible with, and shall produce surfaces that are in conformance with Section 09910 of these documents, "Surface Preparation for Renovation Painting."
    - 2. Where called out in the documents, scraped areas shall be smoothed out by feathering or by filling with a surfacing compound.
    - 3. Where called out in the documents, areas from which paint has been removed shall be coated with a primer, such as "KILZ" or similar or as specified in the installation specifications, which shall be compatible with the new paint, coating or surfacing material to be re-applied.
    - 4. Areas to be repainted, the new paint, coating, or covering shall be compatible with the existing paint and primer, or shall have a surfacing treatment, sizing, bonding agent, or primer recommended by the paint, coating, or covering manufacturer to assure a proper and lasting bond with the substrate surface.
  - C. Any nearby surfaces that have accumulated dust shall be cleaned by damp mopping with a cleaning solution.

3.9 Lead Abatement

- A. General.
  - 1. Unless otherwise specified in the Documents, lead-bearing substances listed in the Documents shall be removed by methods that minimize the generation of dust or debris.
  - 2. Lead-based paint abatement practices shall be compatible with, and shall produce surfaces that are in conformance with Section 09910 of these documents, "Surface Preparation for Renovation Painting."
  - 3. Where existing lead-bearing substances may be disturbed by the installation of new work, they shall be removed sufficiently to prevent such disturbances.
  - 4. Following any window dismantlement activity in the work area, the abatement contractor shall wet scrape the loose paint off the exposed window lintel and prepare, seal, prime and paint the lintel surface. If the lintel is to be replaced as required by the architect, the abatement contractor shall only remove all the loose paint and not repaint the lintel surface.
  - 5. Where disturbances of lead-bearing substances produce dust, the dust must be assumed to contain lead until tested and proven otherwise. Dust suppression methods, such as misting with water and HEPA vacuums shall be used.
  - 6. Movement of lead-bearing wastes through unsecured school areas:
    - a. Wastes shall be contained in 6 mil impermeable (i.e. poly) bags.

- b. Architectural components and other debris shall be wrapped in 6 mil plastic sheeting and sealed with tape.
  - c. Load-out only during non-school hours.
  - d. Dust and debris shall not be tracked or spilled outside the work site. In the event of spillage or tracking, contractor shall HEPA vacuum visible debris and wet wipe all affected areas with a non-TSP lead-dissolving detergent solution.
- B. Interior Abatement methods may include:
- 1. Removal and replacement of the component or surface.
  - 2. Wet scraping of lead-bearing material.
  - 3. Heat gun with operating temperatures not to exceed 700° F.
  - 4. Nonflammable chemical strippers shall not contain methylene chloride. This method is generally used with unique, irreplaceable, architecturally, or historically significant components. Chemical strippers shall be compatible with new paints, coverings, or coatings to be installed.
  - 5. Sander, needle gun, chipper, scarifier, or other mechanical paint removal system. All such power tools shall be equipped with a HEPA vacuum collection system.
  - 6. Enclosure with a durable material or coating that does not readily tear or peel, such as but not limited to, gypsum board; fiberglass mats; canvas-backed vinyl wall coverings; high pressure, laminated plastic sheet, such as Formica®, tile, vinyl flooring, paneling, plastic, metal, or wood. Enclosures shall only be used when specified in the Documents.
- C. Exterior abatement methods may include:
- 1. All methods listed under Interior Abatement
  - 2. Vacuum-blasting
  - 3. Contained hydro-blasting or sandblasting
  - 4. When vacuum-blasting or contained hydro-blasting is used, window interiors shall be sealed with 6 mil plastic sheeting and secured with waterproof tape. All seals shall be checked every two (2) hours to assure integrity. Leaks shall be repaired immediately.
  - 5. Window replacement:
    - a. The room interior shall be sealed off and protected from dust entry. If windows are removed from the inside, the room must be fully protected in accordance with 3.7 B. "Interior Preparation." and 3.7 C. "Exterior Preparation." When windows are removed from the outside, protection must be in accordance with 3.7 C., Exterior Preparation, including at least a seal over the wall immediately inside the window work area. In either case, the Abatement Contractor is responsible for preventing lead dust contamination of interior spaces.
    - b. Damaged lead-based paint must be removed from the wood window frame parts that will remain, both on the inside and on the outside. MEC will direct the AC whether to abate or mitigate undamaged lead-based paint from wood window frames or frame parts on a case by case basis.
    - c. Metal window replacements: The contractor is cautioned that high concentrations of lead dust and asbestos containing caulk have been found behind the window frame caps installed over the original lead-based painted

frames during previous window replacements. Although a lead license is not required for non-LBP metal window removal, contractor must assume that he or she may encounter concentrated lead dust. When removing these caps, the room interior shall be protected in accordance with 3.7 B. Interior Preparation.

D. Soil Removal or Remediation:

1. Identify and eliminate the source of lead contamination if possible, to prevent re-contamination of remediated soil.
2. Dust generation shall be held to a minimum and dust suppression methods shall be performed, such as misting with water during handling.
3. Monitoring of airborne dust shall be performed by the MEC and shall not exceed acceptable levels.
4. Soil that is stockpiled prior to disposal shall be:
  - a. placed on a layer of impermeable plastic;
  - b. kept moist to avoid dust generation; and
  - c. covered with impermeable plastic which is secured to the ground.
5. Soil shall be subjected to a TCLP test to determine waste classification.
6. Contaminated soil shall be transported to disposal facility in sealed containers or covered vehicles. Care shall be taken to prevent tracking of contaminated soil off-site by vehicular or foot traffic.

E. Demolition. Structural demolition of buildings does not require removal of lead-bearing substances or lead-licensed contractors or workers. However, the following minimum requirements must be observed to prevent spread of lead contamination:

1. Close windows and seal doors of adjacent or nearby structures. Cover air intakes or other openings on facing walls or roof areas where dust could enter.
2. Mist the demolition activities with water to suppress dust release.
3. Do not spread debris outside the immediate demolition area.
4. Do not allow foot or other traffic through the demolition area that may spread lead-bearing dust to other building areas.
5. Pulverized painted components may generate lead dust that may require TCLP testing and waste characterization prior to disposal.

3.10 Cleaning and Decontamination

A. Interior Cleaning includes any furniture, cabinets, or other item that was located in the work area during the lead-based paint mitigation/abatement activities.

1. Properly containerize and remove all lead wastes from the work site.
2. HEPA vacuum all surfaces including woodwork, walls, windows, window wells, and floors.
3. Wet clean all surfaces with a cleaning solution.
4. Allow all surfaces to dry and HEPA vacuum any remaining visible residue.

B. Exterior Cleaning.

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

### 3.11 Final Clearance

- A. A lead abatement work area shall be complete if lead dust levels on horizontal interior surfaces are below 40 micrograms per square foot ( $\mu\text{g}/\text{sf}$ ) on floors or 200 micrograms per square foot ( $\mu\text{g}/\text{sf}$ ) on other surfaces. At least 3 wipe samples per contained work area shall be collected from floors, window sills, countertops, tops of cabinets, or other representative surfaces.
- B. The contractor shall restore the work area to usable condition including reconnection of electrical, water and HVAC services, removal of barriers and contractor equipment, waste removal and disposal and returning furniture removed under Section 3.7 of this specification.

### 3.12 Waste Disposal

- A. All plaster, paint chips, lead dust, cleaning supplies, HEPA filters, vacuum contents and filters, disposable suits, and other concentrated lead-bearing waste shall be packed in at least two 6 mil plastic bags.
  1. Dispose of concentrated lead wastes separately from architectural components.
  2. Subject concentrated wastes to TCLP test to determine waste classification.
  3. Prepare a Waste Shipment Record, to be signed by the generator, shipper, and disposal site; to be returned to the generator within 45 days. IEPA and USEPA Generator I.D. numbers will be provided by CSA Environmental Program staff.
- B. Architectural components, other items to which lead-based paint remains adhered, and cleaned plastic sheeting may be disposed of as common construction and demolition debris. Components shall be wrapped in 6 mil plastic sheeting and sealed with tape. Components shall be transported after school hours if carried through the building.
- C. All lead-bearing wastes shall be stored in covered, locked containers until transported off-site.
- D. Remove lead waste from the work site in accordance with RCRA and special waste disposal requirements.
- E. Transport all non-hazardous wastes in covered vehicles to an IEPA-approved landfill located within the State of Illinois.
- F. Transport all hazardous wastes in covered vehicles to a hazardous waste landfill permitted to accept lead wastes.
- G. Wastes from the site shall not be mixed with wastes from other sites.

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ATTACHMENT:

Appendix A - Environmental Scope Form CPS-E30.1

END OF SECTION



## SECTION 02135

### ASBESTOS ABATEMENT FOR PRE-DEMOLITION

#### PART 1 - GENERAL

##### 1.1 INTRODUCTION

- A. Asbestos abatement work prior to demolition is required to follow IEPA NESHAP rules. This specification is intended to provide for the removal of friable and Category I and II non-friable asbestos-containing materials prior to a structural demolition. Abatement of these items is specified in this Section. When only a portion of the structure is being demolished, related paragraphs in the Interior Abatement Section may be referenced or included for barrier walls or related ACM in the areas to remain.

##### 1.2 DEFINITIONS

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

- A. Abatement Contractor (AC) means the entity responsible for performing the work in this Section, and has the training and accreditation to competently perform the work. This entity shall obtain and maintain licenses required for the indoor work in this Section.
- B. Architect of Record (AOR) means the entity that assembles the overall documents and bid package, and approves the completed work.
- C. Asbestos Abatement Supervisor, hereinafter referred to as “supervisor” means any person who supervises asbestos abatement workers. This person must be trained, accredited, and licensed as required, and must also meet OSHA “competent person” criteria for asbestos abatement.
- D. PBC means the entity responsibility for overall project coordination and completion.
- E. Chicago Public Schools (CPS) means the Owner of the property
- F. Environmental Project Manager (EPM) is the person selected by the MEC to perform environmental monitoring, acts on behalf of the CPS or its agents on the project.
- G. HEPA Filter means a High Efficiency Particulate Air filter capable of trapping 99.97% percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- H. IDPH means the Illinois Department of Public Health.
- I. Managing Environmental Consultant (MEC) means the entity with overall responsibility for the environmental aspects of the project, including design, organization, direction, and control as well as investigations, assessments, and supervision of project management.

- J. MSDS means Material Safety Data Sheets, required by OSHA for any chemical in the workplace that that could be expected to cause an exposure to workers during normal use or in emergency situations.
- K. Plasticize means to apply plastic sheeting over surfaces or objects to protect them from contamination or water damage.
- L. PPE (Personal Protection Equipment) means the protective suits, head and foot covers, gloves, respirators and other items used to protect persons from asbestos or other hazards.
- M. Work Area means the area or areas where asbestos abatement is being conducted.

### 1.3 SCOPE OF WORK. REFER TO DRAWINGS.

### 1.4 WORK INCLUDED

- A. The work includes all labor, equipment, materials, and supplies necessary to perform the scope of work in the documents by the procedures described herein. The contractor, by submitting a bid for the work, represents itself as knowledgeable and expert in the performance of the work, and includes all things usually and customarily necessary to provide a complete and finished job, whether specifically mentioned or not. Related work may be shown in other related documents, prepared by others, if applicable, and as listed below:
  - 1. 01010 - Summary of Work
  - 2. 01300 - Submittals
  - 3. 01720 - Project Record Documents
  - 4. 02131 - Interior Asbestos Abatement
- B. Removal of friable and non-friable asbestos-containing materials listed in the Documents, including isolating the work areas, protection of adjacent areas, cleanup, proper packaging and disposal of wastes, and all other steps necessary to complete the scope of work.
- C. Repair or replacement of damaged surfaces, fixtures, or furnishings in portions of the structure that will not be demolished, if any, to restore them to their pre-existing condition to the satisfaction of the PBC.
- D. Compliance with all applicable laws, regulations, standards, and these specifications. In the case of a conflict, the contractor shall comply with the most stringent.
- E. All licenses, accreditations, permits, fees, notifications, reports, or other documents required by law, regulation, this specification, or the Documents.
- F. Provide project closeout documentation to the EPM within thirty (30) days after final clearance. This documentation shall include, but is not limited to submittals requirements specified elsewhere in this Section.

### 1.5 LAWS, REGULATIONS AND STANDARDS

- A. The following laws, regulations, and standards are incorporated by reference:
  - 1. 29 CFR 1910: US OSHA General Industry Standards

2. 29 CFR 1926: US OSHA Construction Standards
3. 29 CFR 1926.1101: US OSHA Asbestos Construction Standards
4. 40 CFR Part 61: US EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP), 11/90 revision
5. 40 CFR 763 Subpart E, US EPA Asbestos Model Accreditation Plan (MAP): Appendix C - Interim Final Rule
6. 11-4-2170: Chicago Building Code – Demolition and renovation safeguards

## 1.6 ASSESSMENT, MONITORING, TESTING AND ANALYSIS

- A. The MEC will perform inspection, testing and design services prior to the start of work, and monitoring during the project and upon its completion.:
1. Prior to the start of the work
    - a. MEC shall verify CPS has notified the appropriate regulatory agencies of the decommissioning of school building(s).
    - b. The MEC shall identify suspect materials and confirm their asbestos content through review of the school's management plan or by testing.
    - c. The MEC will design the project and address any design changes as requested. Project Manager and Air Sampling Professional changes shall be submitted to the IDPH.
    - d. The MEC shall collect background air samples before conditions are disturbed. Background samples shall be analyzed by PCM.
  2. During the work, the MEC shall:
    - a. Observe the work with sufficient frequency to ensure contractor compliance with the specifications.
    - b. Assure that all personnel and visitors have the proper current medical screening, respirator fit test, and training for their respective duties prior to entering a regulated area.
    - c. Collect air samples in and around the work area, as needed, to verify exposure conditions.
    - d. The MEC may stop the work if airborne asbestos concentrations at the work area perimeter exceed 0.01 f/cc. Contractor shall be responsible for taking corrective action to reduce exposure levels and prevent recurrence, and cleaning adjacent areas that become contaminated by the asbestos abatement activities.
  3. Upon completion of the work, the MEC shall:
    - a. Visually inspect for visible debris. Contractor shall be required to re-clean the area or portions of areas until no visible debris remains.
    - b. Conduct final clearance testing as required.
    - c. Prepare the project report.
- B. The Contractor shall provide OSHA compliance air monitoring to determine exposures to its employees in accordance with OSHA 29 CFR 1926.1101. Frequency of testing shall comply with OSHA requirements for the anticipated and actual exposure levels.
1. A written Exposure Assessment may be provided prior to the start of the work to determine the requirements for respiratory protection and frequency of OSHA monitoring for each type of activity. The contractor should note that a Negative Exposure Assessment (NEA) may be possible for many tasks.
  2. Analysis may be performed on site.
- C. Credentials required for testing and analysis of PCM air samples:

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

#### 1.7 SUBMITTALS BY THE CONTRACTOR:

The following shall be submitted to the MEC no less than 10 days prior to the start of the asbestos abatement work activities.

- A. Ten (10) day NESHAP notification to the Illinois EPA with copy to the Chicago Department of Environment when the asbestos quantities reach or exceed 260 linear feet or 160 square feet. Two (2) day IDPH notification with a copy to CDOE for asbestos abatement quantities less than 260 linear feet or 160 square feet.
  1. Ten (10) day IEPA Asbestos Notification on revised form, including inspector license number and landfill permit number.
  2. Evidence that all contractor employees in the work areas are trained and accredited in accordance with OSHA, NESHAP, and EPA MAP requirements:
    - a. Current Annual refresher training certificate.
    - b. Current IDPH asbestos license (optional, in lieu of initial training certificate).
    - c. Current physicians written opinion
    - d. Current respirator fit test for negative pressure respirators when respirators are used.
  3. Copy of OSHA exposure assessment, if available.
  4. OSHA compliance air monitoring records generated during the project.
  5. Waste shipment records.
  6. Worker license and certification log.
  7. Material Safety Data Sheets (MSDS) for chemicals used on site.
  8. Work plan and schedule.
- B. Prior to beginning work, the AC shall submit required notifications to applicable regulatory agencies and receive an Owners Authorization and Notice to Occupants from Chicago Public Schools for buildings where asbestos abatement will take place. The AC shall provide copies of all regulatory notices to the CPS Environmental Services Manager and the EPM within 24 hours of sending such notices to the regulatory authority. The AC shall not begin a project until such notices are provided to CPS and the EPM.

## PART 2 - PRODUCTS

### 2.1 TOOLS AND EQUIPMENT

All tools and equipment shall at least conform to minimum industry standards and IDPH regulations.

- A. Equipment:
  1. Negative Air Machines shall provide HEPA filtration and conform to ANSI Z9.2 fabrication criteria.
  2. Respirators shall be NIOSH approved for use with lead, asbestos, or other contaminants anticipated in the work.

3. Contractor is fully responsible for complying with OSHA rules for other safety equipment, such as hard hats, safety harnesses, eye protection, gloves, footwear, and any other safety devices used on the site.
4. Pressure differential manometer with readable tape shall be provided by the contractor including calibration documentation.

B. Tools:

1. Shovels and scoops shall be rubber or plastic, suitable for use in plasticized containment. Metal shovels are not permitted.
2. Scrapers, brushes, utility knives and other hand tools shall be of good quality and suitable for the intended uses. The contractor shall keep an ample supply on hand for the completion of the work.
3. Power tools such as, but not limited to saws, pneumatic chisels, brushes, sanders, and needle guns shall be equipped with shrouds and HEPA-filtered local exhaust systems to capture released particles.

## 2.2 MATERIALS

All materials shall at least conform to minimum industry standards and IDPH regulations.

A. Abatement materials

1. Fire-retardant, poly sheeting for all applications shall be 6 mil nominal thickness for critical seals, floors, ceilings and drop cloths, and 4 mil for walls.
2. Tape shall be 2" or 3" duct tape or other waterproof tape suitable for joining poly seams and attaching poly sheeting to surfaces.
3. Spray adhesives shall be non-flammable and free of methylene chloride solvents.
4. Disposal bags shall be 6 mil.
5. Disposable suits, hoods, and foot coverings shall be TYVEK or similar.
6. Solvents shall be compatible with any primers, mastics, adhesives, paints, coatings, or other surfacing materials to be installed following their use.

## PART 3 - EXECUTION

### 3.1 EMPLOYEE TRAINING, QUALIFICATION AND MEDICAL SCREENING

- A. Supervisors and Workers shall be trained, accredited, and licensed in accordance with IDPH rules.
1. Contractor shall keep copies of licenses, initial training course certificate, and most recent annual refresher training certificate at the jobsite at all times for all contractor personnel.
  2. A supervisor (competent person) shall be present at the worksite at all times when work under this Section is being conducted.
- B. Medical Screening. All contractor personnel shall have a current medical examination in accordance with OSHA requirements. Copies of the Physician's Written Opinions shall be kept on site.

### 3.2 PERMISSIBLE EXPOSURE LIMITS

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

### 3.3 EXPOSURE ASSESSMENT AND MONITORING

- A. The Contractor shall make a written assessment of the potential airborne asbestos fiber exposures for this project. Assessments shall conform with OSHA requirements and may be based upon:
  - 1. Initial monitoring of representative workers who the contractor believes are exposed to the greatest airborne concentrations of asbestos, or
  - 2. Past monitoring (within the past 12 months) or objective data for conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions to be used for this project, or
- B. The contractor shall perform personal monitoring in accordance with the following requirements:
  - 1. Initially, to establish an exposure assessment when past monitoring or objective data are not available for an initial determination.
  - 2. Periodically if the exposures are, or are expected to be, below the PEL.
  - 3. Daily, if exposures are above the PEL.
  - 4. Whenever there has been a change of equipment, process, control, personnel, or a new task has been initiated that may affect employee exposures, the exposure assessment shall be updated, and monitoring shall be re-instituted if exposures are unknown or are expected to exceed the PEL.

### 3.4 RESPIRATORY PROTECTION

- A. Respiratory protection shall be worn in accordance with all applicable regulations referenced in Laws, Regulations and Standards specified elsewhere in this Section.

### 3.5 HYGIENE PRACTICES

- A. Eating, drinking, smoking, chewing gum or tobacco, and applying of cosmetics are not allowed in the work area.
- B. All persons entering the work area are required to wear appropriate PPE, and follow the entry and exit procedures posted in the Personnel Decontamination Enclosure System.
- C. Personal Protection Equipment (PPE) is required when airborne exposures are, or are expected to be above the PEL, or as needed to protect the safety of personnel and visitors. PPE may include:
  - 1. Full body disposable suits, headgear, and footwear.
  - 2. Gloves.

3. Hardhats.
4. Non-disposable footwear and clothing shall remain in the work area and shall be disposed of as contaminated waste when the job is completed.
5. Authorized visitors shall be provided with suitable PPE when PPE is required in the work area. The MEC shall assure that visitors have proper and current medical screening and fit test, and awareness training or other appropriate training.

D. A Personnel Decontamination Facility is required when worker exposures are expected to exceed the PEL. The decontamination unit may be remotely located if not feasible to locate adjacent to the work area.

1. When a remote decon unit is used, personnel shall use a double-suiting procedure for traveling between the work area and the decon. Persons shall HEPA-vacuum the exterior of their disposable suits at the entry to the work area, put on a clean suit over the existing suit, and proceed to the decon unit for shower decontamination and change into street clothes.

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

### 3.6 PROHIBITED ACTIVITIES

- A. Dry removal or dry sweeping, except:
1. During freezing weather. In this case, temperature and weather conditions must be recorded at the start, during, and at the end of the shift.
  2. On roofs with 3:1 slope or greater. In this case, roofing shall be removed in an intact condition, as much as possible.
  3. For roofing areas of less than 25 square feet.
  4. When equipment damage or other hazard exists. In this case, written permission from IEPA is required prior to performing dry removal.
- B. Use of compressed air for cleaning.
- C. Use of high speed power tools not equipped with a HEPA-filtered local exhaust or water spray system.
- D. Eating, drinking, smoking, chewing gum, or applying cosmetics in the work area.
- E. Removing respirators or other PPE in the work area.
- F. Contractor shall not salvage or recycle building materials unrelated to abatement scope of work.

### 3.7 WORK AREA ISOLATION AND PREPARATION

- A. General Preparation. Contractor shall:
1. Post:

- a. Caution signs meeting the specifications of OSHA 29 CFR 1926.1101 (k)(6) at any location and approaches to a location where airborne concentrations of asbestos may exceed ambient background levels.
  - b. Decontamination and work procedures in equipment rooms and clean rooms.
  - c. EPA NESHAP asbestos rules (40 CFR Part 61, subparts A & M) in the clean room.
  - d. OSHA Asbestos Construction Standards (29 CFR 1926.1101) in the clean room.
  - e. List of telephone numbers in the clean room for:
    - 1) local hospital and/or local emergency squad.
    - 2) school security office (if applicable).
    - 3) owner representative reachable 24 hours per day.
    - 4) contractor's headquarters.
    - 5) architects or consultants directly involved in the project.
2. Secure the work area from entry by unauthorized persons.

B. Exterior Preparation

1. 6 mil plastic sheeting shall be placed over the ground, foundation, or other surfaces below the abatement area.
2. Unauthorized entry shall be prevented by using appropriate barriers, such as warning tape, fencing, or other suitable barriers.
3. Nearby air intakes, grilles, and other openings into the building interior areas not being demolished above, below, or besides the work area that could be exposed to airborne dust shall be closed or sealed off with poly and tape.
4. All electric power in the work area shall be protected with ground-fault circuit interruptors.

### 3.8 ABATEMENT PROCEDURES

A. General Removal Requirements

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

B. Roofing

1. General: Remove in an intact state to the extent feasible. ACM roof mastics, cements, underlayments, and flashings. Asbestos-containing shingles may occasionally break even when removed carefully. The fact that otherwise intact roofing materials become



separated or broken does not by itself render them non-intact. However, if they become pulverized, reduced to powder or dust, they have become non-intact.

- a. The contractor shall take care to minimize the amount of roofing material damage.
  - b. If the materials are rendered non-intact, the AC shall employ methods to contain the dust and debris and utilize hygiene practices appropriate for friable (OSHA Class I) ACM, including PPE, decontamination units, and monitoring. Monitoring may include area samples at the work area perimeter to determine that airborne asbestos fibers are not being released in concentrations above the PEL.
2. Built-up roofing and asphalt shingles:
    - a. Power cutting machines shall be equipped with a HEPA-filtered dust collection system or shall be misted during use.
    - b. Dust generated by the cutting operation shall be collected with HEPA vacuums or wet cleaning methods.
  3. Rigid roofing materials, such as cement asbestos shingles: remove intact and minimize breakage.
- C. Transite, Galbestos sheeting (galvanized metal with a baked-on asbestos paint), Asbestos/Cement pipe, or other rigid panels shall be removed using wet methods.
- D. Other
1. Coatings, electric cable insulation or joint coverings, and other miscellaneous materials that are to be removed with the substrate or that can be removed without becoming friable may be removed as intact (OSHA Class II, EPA NESHAP Category I or II non-friable) in accordance with procedures described in General Removal Requirements and Roofing paragraphs above.
  2. Coatings, and other miscellaneous materials that must be removed from the substrate or that otherwise shall become friable must be removed as non-intact (OSHA Class I, EPA NESHAP friable) in accordance with procedures described in General Removal Requirements and Roofing paragraphs above.

### 3.9 CLEANING AND DECONTAMINATION

- A. All visible accumulations of ACM, debris, tools, and unnecessary equipment shall be removed from the work area.
- B. Protective poly shall be folded in on itself, rolled up, placed in asbestos disposal bags, and disposed as asbestos waste.
- C. Surfaces which have been exposed to friable ACM or its dust shall be HEPA vacuumed.
- D. Dry sweeping of surfaces that have been exposed to friable ACM or its dust is not permitted.

### 3.10 FINAL CLEARANCE

- A. Cleaning may be discontinued when there is no visible debris and area air monitoring results verify that exposures are below the PEL.
- B. Final (aggressive) clearance sampling will be conducted by the MEC. Each sample result, as determined by Phase Contrast Microscopy, shall be less than or equal to 0.01 f/cc. If the

sampling results indicate a concentration of airborne fibers in excess of this clearance criteria, the contractor shall re-clean the contained and/or regulated area. The contractor shall not be released until the contained and/or regulated work area meets the clearance criteria.

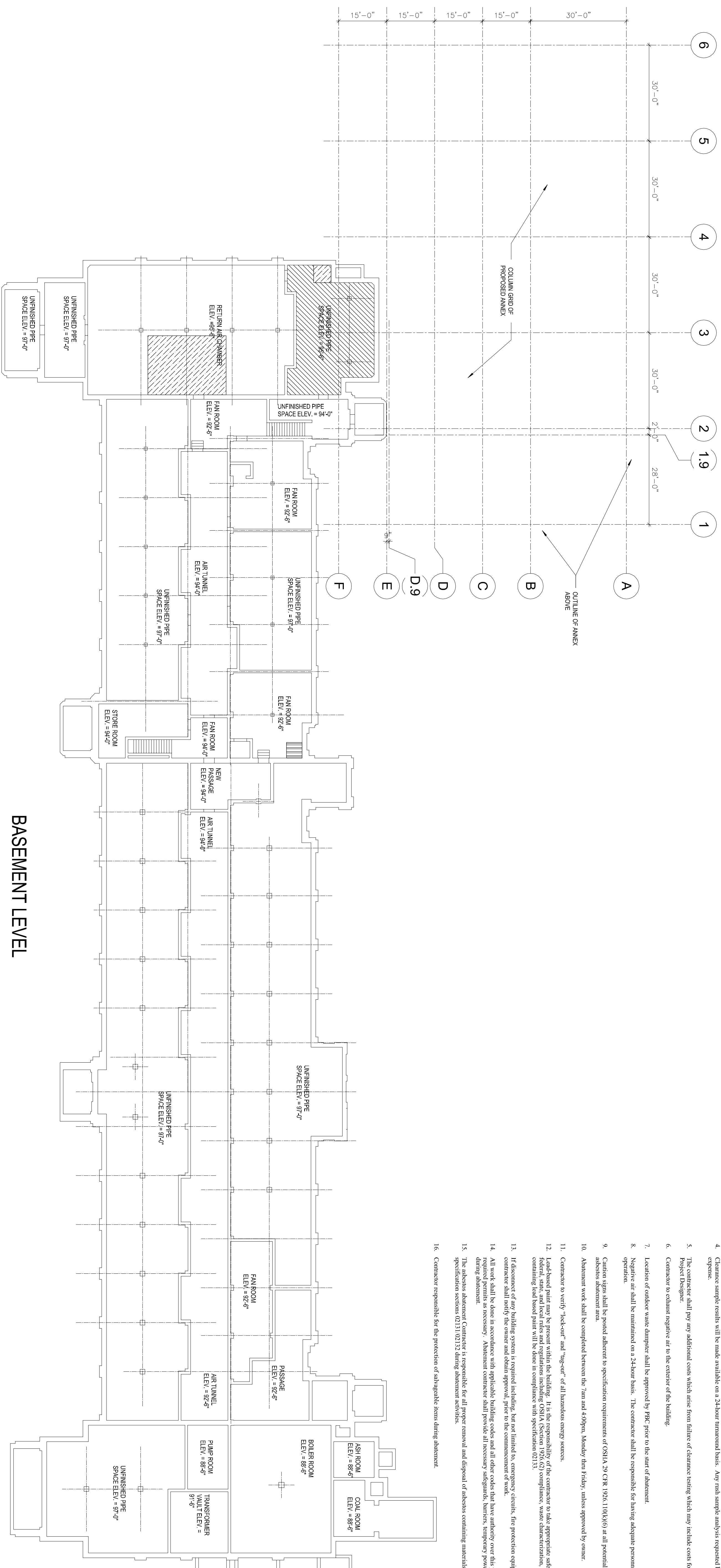
### 3.11 WASTE DISPOSAL AND EQUIPMENT LOAD-OUT

- A. Category I and II non-friable waste may be adequately wetted and loaded in bulk into lined receptacles, such as dumpsters or trailers. Receptacles shall be closeable and lockable to provide security and to prevent air emissions. It is the abatement contractor's responsibility to determine and provide for more stringent manifesting or packaging requirements that may be imposed by transporters or landfills.
- B. Packaged friable asbestos wastes:
  - 1. Asbestos-containing wastes, including removed ACM and debris, poly, critical barrier materials, suits, respirator filters, vacuum HEPA filters, water filters, and other asbestos-containing items shall be properly packaged for disposal.
  - 2. Use 6 mil plastic bags with a gooseneck seal, drums, or other type of sealed container.
  - 3. Wrap large or irregular items in 6 mil poly sheeting and seal with tape.
  - 4. Sharp, jagged, or other items that may puncture poly shall be packaged in rigid impermeable containers such as drums or boxes, or wrapped in burlap or other protective covering before sealing in bags or poly sheeting.
  - 5. Label containers for friable ACM waste:
    - a. OSHA warning label.
    - b. DOT performance-oriented hazardous material label.
    - c. Name and address of generator and abatement location.
- C. Removing items from the work area:
  - 1. Packaged asbestos wastes shall be HEPA-vacuumed before removing from the work area.
- D. Storage of packaged asbestos wastes shall be in a completely enclosed dumpster, or other suitable container that can be secured. The secured area shall be kept locked at all times to prevent unauthorized access.
- E. Shipment of items from the project.
  - 1. Decontaminated tools and equipment may be shipped by normal carrier to warehouse, another jobsite, or other destination.
  - 2. For asbestos wastes:
    - a. Line shipping container with 6 mil poly prior to loading packaged friable asbestos wastes.
    - b. Post NESHAP placards during loading of friable asbestos wastes.
    - c. Execute the NESHAP-required Waste Shipment Record (WSR) to be signed by the generator, transporter, and landfill. All WSRs shall be returned to the MEC within 30 days of shipment.

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

ATTACHMENT:

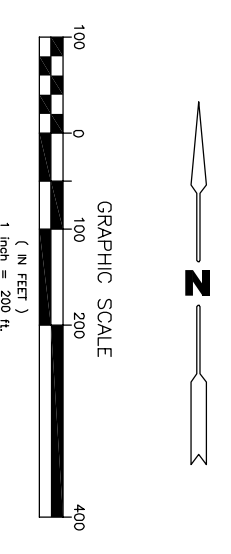
END OF SECTION



BASEMENT LEVEL

- LEGEND:
- PICK UP APPROXIMATELY 300 S.F. ASBESTOS DEBRIS ENCAPSULATE DIRT FLOOR, COVER FLOOR WITH PLASTIC, INSTALL WALKWAY FOR WORKERS, REPAIR APPROXIMATELY 50' OF INSULATION
  - REPAIR APPROXIMATELY 50' OF INSULATION

- GENERAL NOTES:
1. The Contractor is responsible for verifying locations and quantities in the field before bidding. Any questions about the scope or clarifications shall be obtained from the Project Designer prior to bidding. Any interpretation of the design documents shall only be made by the Project Designer.
  2. Survey did not include destructive investigation. Demolition and removal of pipe insulation behind wall shall be part of contract work.
  3. All asbestos abatement within the building shall be in accordance with applicable USHQA, OSHA and IDPH (Commercial and Public Buildings) rules and regulations.
  4. Clearance sample results will be made available on a 24-hour turnaround basis. Any rush sample analysis requested by the contractor shall be at the contractor's expense.
  5. The contractor shall pay any additional costs which arise from failure of clearance testing which may include costs for services of the MFC, Laboratory or Project Designer.
  6. Contractor to exhaust negative air to the exterior of the building.
  7. Location of outdoor waste dumpster shall be approved by PRC prior to the start of abatement.
  8. Negative air shall be maintained on a 24-hour basis. The contractor shall be responsible for having adequate personnel and backup equipment to maintain operation.
  9. Caution signs shall be posted adjacent to specification requirements of OSHA 29 CFR 1926.1106(a) at all potential entrances or barriers to the regulated asbestos abatement area.
  10. Abatement work shall be completed between the 7am and 4:00pm, Monday thru Friday, unless approved by owner.
  11. Contractor to verify "lock-out" and "tag-out" of all hazardous energy sources.
  12. Lead-based paint may be present within the building. It is the responsibility of the contractor to take appropriate safety measures in accordance with applicable regulations during the abatement work. Lead-based paint testing and removal shall be done in compliance with Specification 02132. All work with surfaces containing lead-based paint will be done in compliance with Specification 02132.
  13. If disconnection of any building system is required including, but not limited to, emergency circuits, fire protection equipment or mechanical systems, the contractor shall notify the owner and obtain approval, prior to the commencement of work.
  14. All work shall be done in accordance with applicable building codes and all other codes that have authority over this project. Abatement contractor shall secure required permits as necessary. Abatement contractor shall provide all necessary safeguards, barriers, temporary power, lighting, fire protection, etc. as required during abatement.
  15. The asbestos abatement Contractor is responsible for all proper removal and disposal of asbestos containing materials and security to the work area per specification sections 02131/02132 during abatement activities.
  16. Contractor responsible for the protection of subsurface items during abatement.



Site Preparation  
 Mount Greenwood Elementary School  
 10851 South Hornan  
 Chicago, IL

DRAWN BY: CAP  
 PROJECT NUMBER: 3205101033  
 APPROVED: \_\_\_\_\_  
 DATE: 11/08/10  
 FIGURE: ENV 1.0  
 REVISION DATE:

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 Niemiec Gazda-Auskaitis  
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 Planning  
 Interior Architecture  
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PROJECT: MT. GREENWOOD ELEMENTARY SCHOOL ANNEX

SMNG-A NO.: 1007

PBC NO.:

CONTRACT NO.: 08510

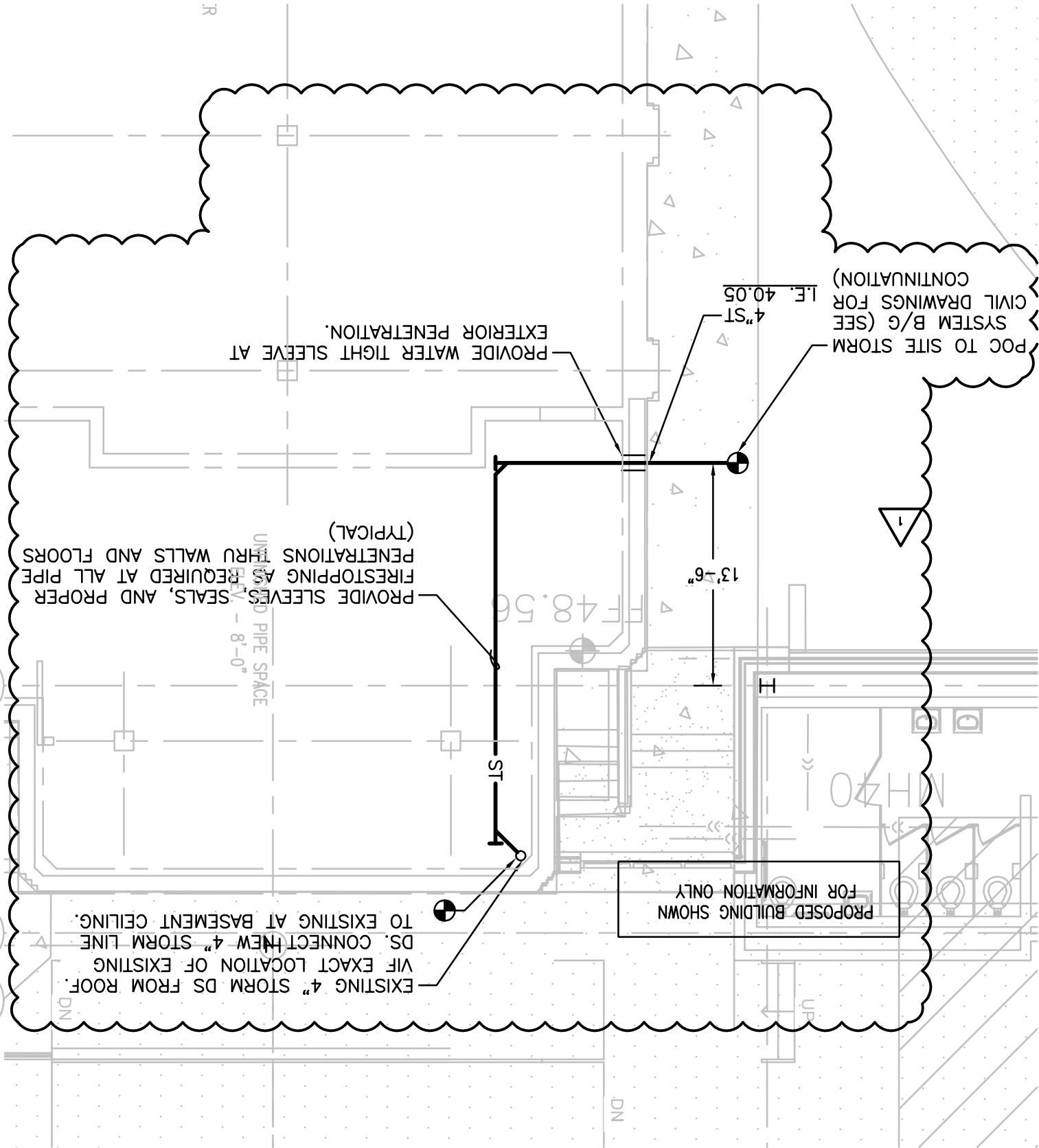
ISSUE: ISSUE FOR ADDENDUM 1 SITE PREPARATION  
 TITLE: PLUMBING SITE PLAN

COMMENTS:

ISSUE DATE: 11.09.10

# PSK-SP1

PAGE 1 OF 1




# DEMOLITION NOTES:


THE EXTENT OF DEMOLITION WORK IS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN AND INCLUDES, BUT IS NOT LIMITED TO:

1. REMOVAL OF ALL UTILITIES, OVERHEAD LINES AND POLES, PAVING, VEGETATION AND OTHER SITE FEATURES WHICH CONFLICT WITH THE CONSTRUCTION OF THE NEW FACILITIES, OR ARE DESIGNATED TO BE REMOVED.
2. CONDUCT DEMOLITION OPERATIONS AND REMOVAL OF DEBRIS AND SPOILS TO INSURE MINIMAL INTERFERENCE WITH FACILITY OPERATIONS. REFER TO SPECIFICATION SECTIONS 02316 & 02318.
3. ENSURE SAFE PASSAGE OF PERSONS AROUND AREAS OF DEMOLITION. REMOVE FROM SITE ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION AND LAWFULLY DISPOSE OF SAME.
4. NOTIFY OWNER 48 HOURS IN ADVANCE OF ANY UTILITY SHUTDOWN.
5. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER/ARCHITECT ALL ITEMS DESIGNATED TO BE REMOVED OR RELOCATED.
6. IF ANY ITEMS ARE ENCOUNTERED IN THE FIELD THAT ARE NOT SHOWN ON THE PLAN WHICH REQUIRE DEMOLITION OR RELOCATION, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY.
7. THE CONTRACTOR WILL PROTECT ALL UTILITIES DESIGNATED TO REMAIN. ANY DAMAGE BY THE CONTRACTOR TO UTILITIES, ALLEYWAYS, STREETS OR ADJACENT PROPERTIES WILL BE REPLACED/REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR WILL PAY ALL REQUISITE FEES TO THE CITY OF CHICAGO, IL AND ANY OTHER AGENCY REQUIRED FOR COMPLETION OF DEMOLITION WORK.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL EXISTING SERVICES AND APPURTENANCES TO DEMOLISHED SITE FEATURES AND CAP/TERMINATE AS REQUIRED BY THE UTILITY COMPANY. CONTRACTOR SHOULD CONTACT ARCHITECT/ENGINEER IF ANY QUESTION ARISES REGARDING THE VIABILITY OF A UTILITY STRUCTURE.

10. EXISTING ASPHALT PAVEMENT THICKNESS IS APPROXIMATELY 2 INCHES PER GEOTECHNICAL REPORT DATED OCTOBER 21, 2010 BY EPI. CONTRACTOR TO VERIFY EXISTING CONDITIONS. FOR ALL BASE BIDS, CONTRACTOR SHALL ESTIMATE AN EXCAVATION & REMOVAL AND ALL ASSOCIATED EARTHWORK WORK TO AN EXCAVATION ELEVATION OF 40.09 CCD. EXCAVATION LIMITS SHALL BE FOR THE AREA ENCOMPASSING 12 INCHES BEYOND THE BUILDING ANNEX FOOTPRINT. BACKFILL WITH APPROVED CA-6 MATERIAL (COMPACT TO 95%, 8" LIFTS) TO PROPOSED ELEVATIONS AS INDICATED.

11. RESTORE/REPAIR ALL PAVEMENT AND LANDSCAPE AREAS UPON REMOVAL OF CONSTRUCTION FENCING. NON-PROTECTED EXCAVATIONS SHALL BE BACKFILLED TO ADJACENT GRADE WITH APPROVED FILL MATERIAL. 

12. COORDINATE CONSTRUCTION/DEMOLITION OPERATIONS WITH OWNER. ALL EGRESS DETOURS AND TEMPORARY CLOSURES SHALL BE COORDINATED WITH THE OWNER AND APPROVED BY THE CITY FIRE DEPARTMENT, AS APPLICABLE.

13. CONTRACTOR TO FURNISH AND INSTALL CAISSON SHAFT PROTECTION FOR EACH CAISSON INSTALLED. SHAFT PROTECTION SHALL BE ADEQUATELY SIZED TO PROTECT AND IDENTIFY THE CONSTRUCTED SHAFT AND PROTRUDING REINFORCING BARS. PROTECTION SHALL ACCOMMODATE SUBJECTED EARTH PRESSURE FROM ADJACENT BACKFILL. PROVIDE CANOPY TO PREVENT ACCUMULATION OF RAINFALL ONTO SUBJECT CAISSON AND RE-BAR. SUBMIT PROTECTION DEVICE INFORMATION/CUT SHEET TO ARCHITECT/ENGINEER FOR REVIEW & APPROVAL PRIOR TO FURNISHING AND INSTALLATION. 

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PROJECT: MT. GREENWOOD ELEMENTARY SCHOOL ANNEX

SMNG-A NO.: 1007

PBC NO.:

CONTRACT NO.: 08510

ISSUE: ADDENDUM 1

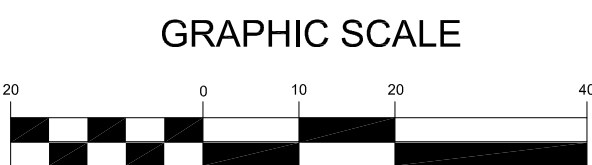
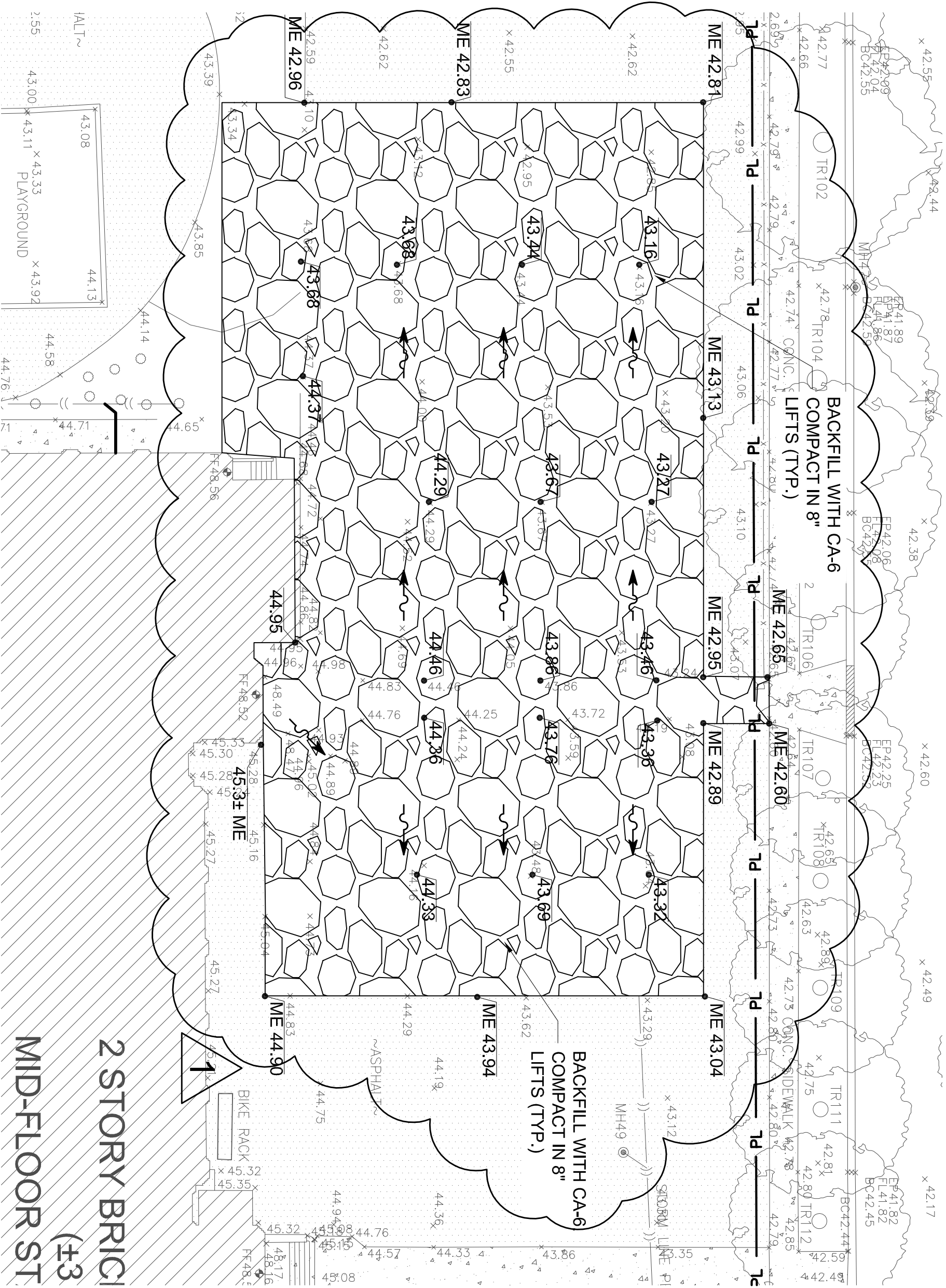
TITLE: REVISION TO NOTES

COMMENTS: SEE SHEET C-SP-0.0

ISSUE DATE: 11.09.10

# CSK-SP1

PAGE 1 OF 3



( IN FEET )  
1 inch = 20 ft.

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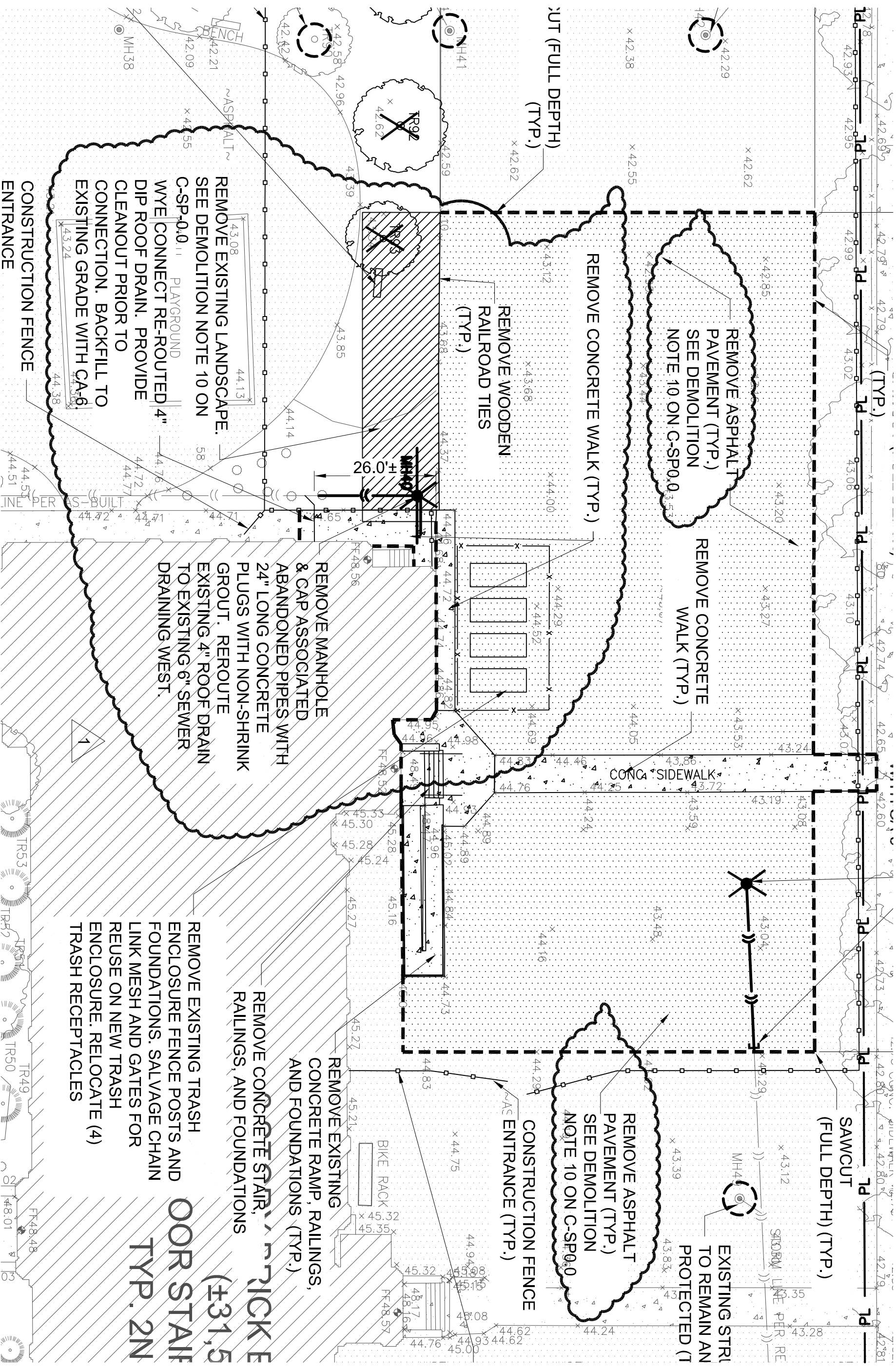
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PROJECT: MT. GREENWOOD ELEMENTARY SCHOOL ANNEX  
SMNG-A NO.: 1007  
PBC NO.:  
CONTRACT NO.: 08510  
ISSUE: ADDENDUM 1  
TITLE: UPDATED GRADING PLAN  
COMMENTS: SEE SHEET C-SP-2.0

ISSUE DATE: 11.09.10

**CSK-SP3**

PAGE 3 OF 3



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PROJECT: MT. GREENWOOD ELEMENTARY SCHOOL ANNEX

SMNG-A NO.: 1007

PBC NO.:

CONTRACT NO.: 08510

ISSUE: ADDENDUM #1

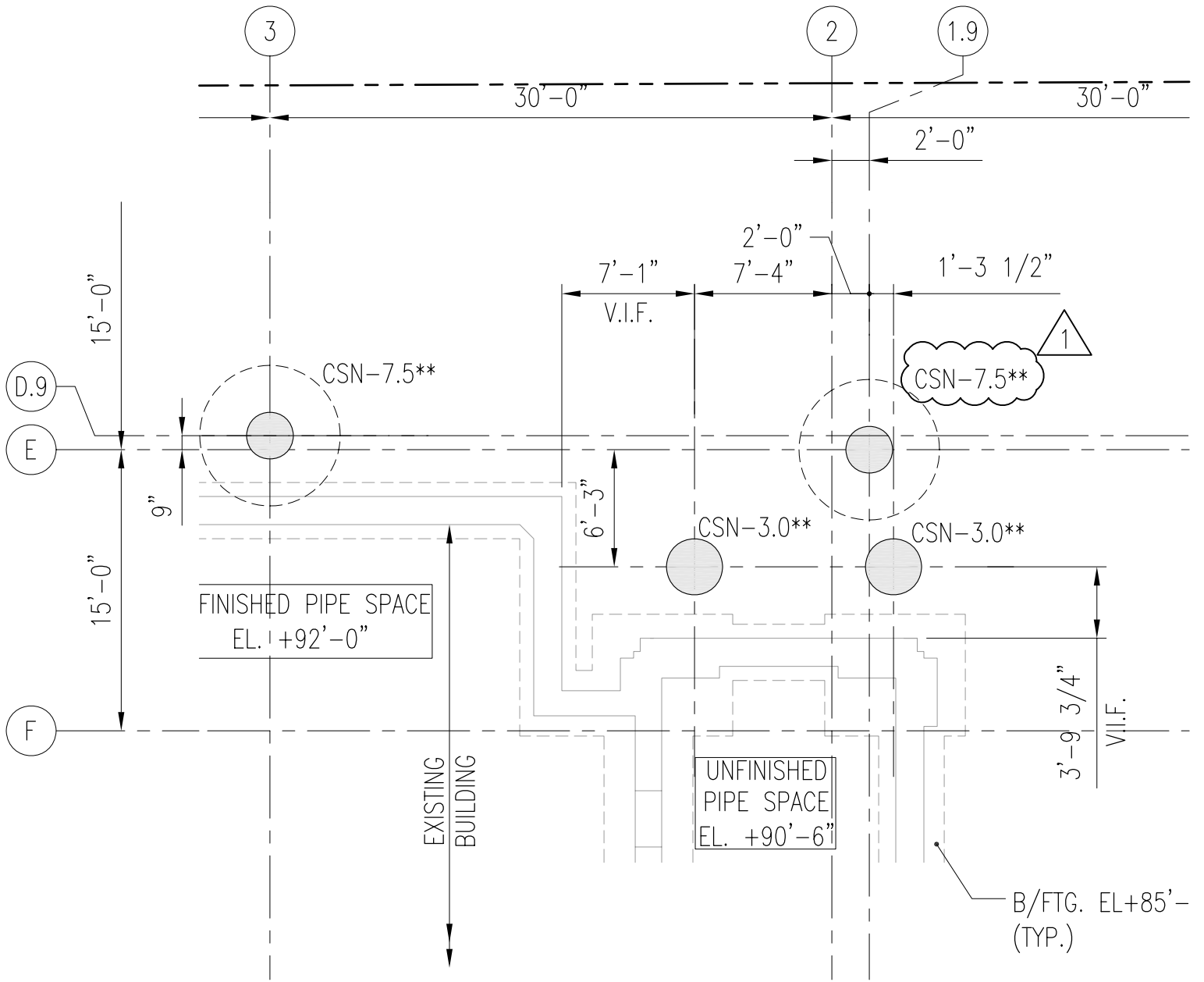
TITLE: UPDATED DEMOLITION SCOPE.

COMMENTS: SEE SHEET C-SP.1.0

ISSUE DATE: 11.09.10

**CSK-SP2**

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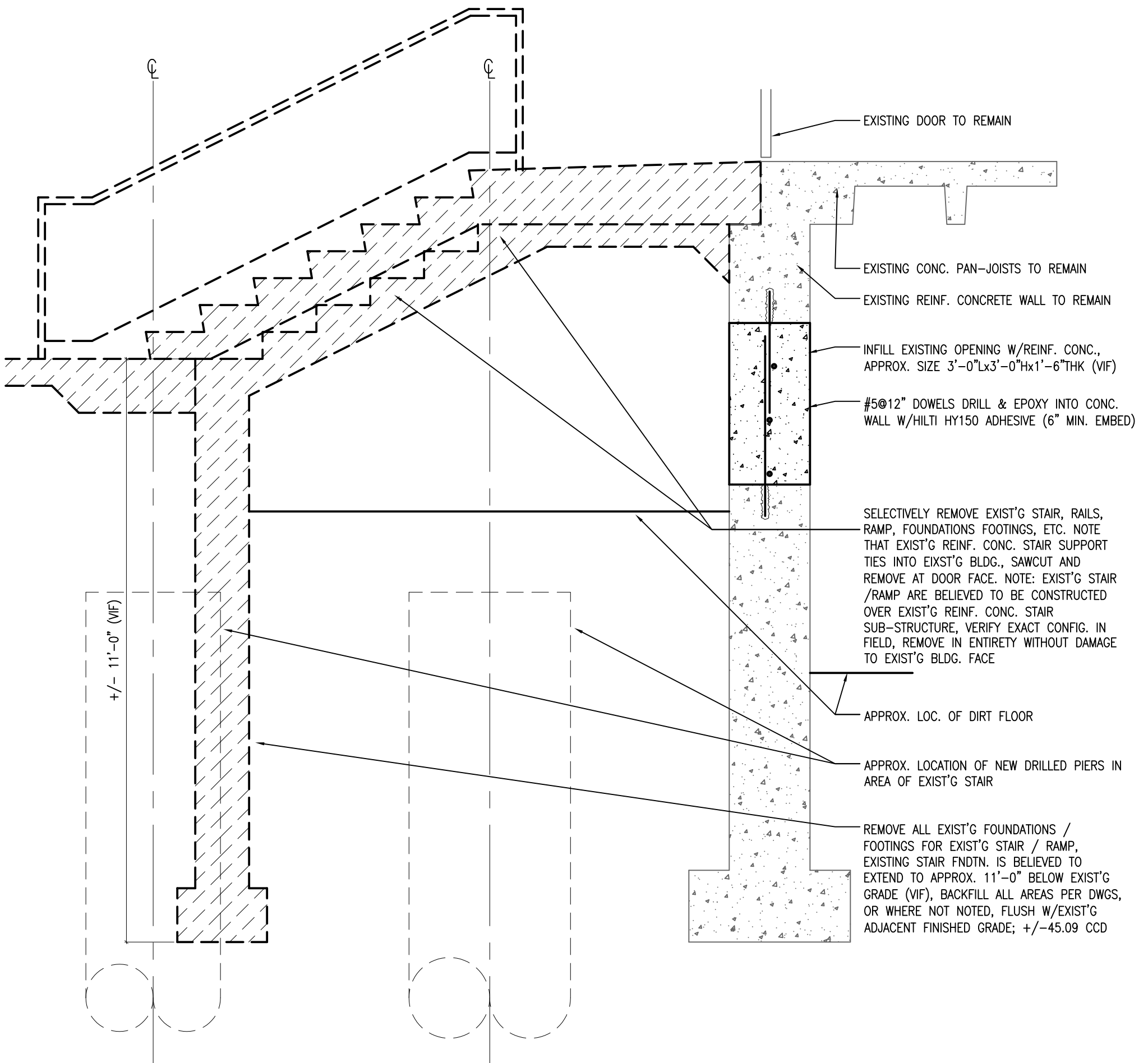


CAISSON PLAN

1/8" = 1'-0"

<p>SMNG-A Architects, Ltd. Schroeder Murchie Niemic Gazda-Auskalnis</p> <p>Architecture Planning Interior Architecture</p> <p>936 West Huron Street Chicago, Illinois 60622 312. 829.3355 voice 312. 829.8187 fax</p>	<p>PROJECT: MT. GREENWOOD ELEMENTARY SCHOOL ANNEX</p> <p>SMNG-A NO.: 1007</p> <p>PBC NO.:</p> <p>CONTRACT NO.: 08510</p> <p>ISSUE: ISSUE FOR ADDENDUM 1 SITE PREPARATION</p> <p>TITLE: PARTIAL CAISSON PLAN (REF: SHEET S1.0)</p> <p>COMMENTS:</p>	<p>ISSUE DATE: 11.03.10</p> <p><b>SSK-SP-1</b></p> <p>MEC# 10025</p>
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PARTIAL SECTION TAKEN THROUGH EXIST'G STAIR /  
DOORWAY LOOKING SOUTH; SECTION AT WALL OPEN'G INFILL  
SCALE: N.T.S.

1 PARTIAL SECTION AT EAST STAIR (STAIR TO BE REMOVED)  
SCALE: N.T.S.

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PROJECT: MT. GREENWOOD ELEMENTARY SCHOOL ANNEX  
SMNG-A NO.: 1007  
PBC NO.:  
CONTRACT NO.: JOC 05810-C1505D-001-000  
ISSUE: ADDENDUM NO.1  
TITLE: PARTIAL SECTION AT EXISTING EAST STAIR (STAIR TO BE REMOVED)  
COMMENTS: WALL INFILL DETAIL INCLUDED, CLARIFICATION ON ANTICIPATED EXCAVATION DEPTH

ISSUE DATE: 11.09.10

**ASK-SP1**

PAGE 1 OF 1