

Little Lake City School District

TECHNICAL SPECIFICATION

HAZARDOUS MATERIALS REMOVAL/IMPACT

CAMPUS WIDE PAINTING PROJECT

LAKELAND ELEMENTARY SCHOOL
11224 BOMBARDIER AVENUE
NORWALK, CALIFORNIA 90650

Volume 1 of 1

EE Project No. 18-Z0187-0028

March 22, 2018



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DIVISION 1
GENERAL REQUIREMENTS

SECTION 01010
SCOPE OF WORK

1.1 GENERAL:

The work to be performed by the contractor comprises:

PROJECT: HAZARDOUS MATERIAL REMOVAL/IMPACT IN CONJUNCTION WITH THE CAMPUS-WIDE PAINTING PROJECT

OWNER: LITTLE LAKE CITY SCHOOL DISTRICT

1.2 THE SITE:

The work will be performed at the following site within the Little Lake City School District:

Site Location
Lakeland Elementary School 11224 Bombardier Avenue Norwalk, California 90650

The exact scope and limits of work are the sole responsibility of the Abatement Contractor, he/she shall determine and verify all conditions, quantities and situations adjoining his/her work and existing items. It is the responsibility of the Abatement Contractor and or prime trade to use trained personnel, proper personal protection and monitoring, wet methods, and compliant disposal of those materials that might be impacted during this project.

1.3 POTENTIAL ASBESTOS HAZARD

- A. Abatement Contractor is warned that unprotected exposure to asbestos fibers has been determined to significantly increase risk of incurring the following diseases: asbestosis, lung cancer, mesothelioma, and certain gastrointestinal cancers. Care must be taken to avoid releasing or causing to be released, asbestos fibers into the atmosphere. Within Code of Federal Regulations, Title 29, Section 1926.1101 (abbreviated as 29 CFR 1926.1101), the Occupational Safety and Health Administration (OSHA) has set standards for permissible exposure to airborne concentrations of asbestos fibers, methods of compliance, personal protective equipment, and other methods which must be utilized when working with, or in proximity to asbestos. In executing the contract, the Abatement Contractor certifies that he shall comply with all parts of this regulation, as well as any more stringent requirements as specified in this specification.
- B. Abatement Contractor shall presume that detectable levels of asbestos are present in all existing installed surfaces, except and unless objective information to the contrary is provided by the Owner, Owner's Representative, or Owner's Consultant. The Abatement Contractor shall be responsible for conformance with all applicable Cal/Occupational Safety and Health Administration (Cal/OSHA) Worker Protection and Cal/Environmental Protection Agency (EPA) Environmental Protection requirements pertaining to asbestos as applicable to the Abatement Contractor's work.

1.4 LEAD-BASED PAINT HAZARD

Lead has been used as a key ingredient in paint for many years. Cal/OSHA requires all employers of employees who work with materials that may be toxic, including lead-containing paint, to provide hazard communication and training to their employees. All contractors shall ensure that they are in compliance with all Cal/OSHA and applicable regulations. Additionally, the contractors shall observe the following work practices:

- Absolutely no dry sanding of painted surfaces.
- When surface cleaning is necessary for repainting, surfaces shall be wet-cleaned or HEPA vacuumed.
- Voids or ridges in painted surfaces shall be filled or "feathered" as necessary with compatible, non-lead containing products.
- Paint Film Stabilization is required where loose and flaky paint exists prior to component removal and/or demolition. A top coat sealer, lead-bloc or other encapsulation method, shall be applied to prevent further lead-based paint (LBP) flaking during removal.
- All cleanup of debris shall include wet methods or use of a high efficiency particulate air (HEPA) filtered vacuum.
- All paint debris and disposable equipment/materials from surface preparation, demolition or other paint disturbance, shall be contained and removed from the site.

1.5 SCOPE OF WORK:

Contractor will follow the applicable abatement procedures listed below for that material. Where conflict among requirements or with these specifications exists, the more stringent requirements shall apply.

Hazardous Materials Removal: This Contract covers the furnishings of all labor and materials and proper disposal required for impacting of hazardous materials from the following areas:

A. Asbestos-Containing Materials – Removal:

1. Remove and dispose of asbestos-containing materials (ACM) from areas designated by the various prime trades and/or Construction Manager as required for construction of the Project. Some work may require only partial removal of the materials listed.
2. Final clearance will be accomplished via visual inspection.

Asbestos-Containing Materials Administration Building						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
01	Roof penetration mastic	Impact as stated in plans or requested by District	Roof top at seams, jacks patches and penetrations	10 SF	7-10% chrysotile	02074A HM

Asbestos-Containing Materials Multi-Purpose Building						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
02	Roof penetration mastic	Impact as stated in plans or requested by District	Upper roof top at jacks, HVAC duct base, seams, patches and penetrations	25 SF	6% chrysotile	02074A HM

Asbestos-Containing Materials Building B						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
03	Roof penetration mastic	Impact as stated in plans or requested by District	Rooftop at seams, jacks, patches and penetrations	50 SF	4- 6% chrysotile	02074A HM

Asbestos-Containing Materials Building C						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
04	Roof penetration mastic	Impact as stated in plans or requested by District	Upper rooftop at seams, jacks, patches and penetrations	50 SF	5-10% chrysotile	02074A HM
05	Roof penetration mastic	Impact as stated in plans or requested by District	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	60 SF	3-10% chrysotile	02074A HM

Asbestos-Containing Materials Building D						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
06	Roof penetration mastic	Impact as stated in plans or requested by District	Upper rooftop at seams, jacks, patches and penetrations	10 SF	10% chrysotile	02074A HM
07	Roof penetration mastic	Impact as stated in plans or requested by District	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	50 SF	10% chrysotile	02074A HM

**Asbestos scope of work continues on the next page.
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Asbestos-Containing Materials Building E						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
08	Roof penetration mastic	Impact as stated in plans or requested by District	Upper rooftop at seams, jacks, patches and penetrations	10 SF	5% chrysotile	02074A HM
09	Roof penetration mastic	Impact as stated in plans or requested by District	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	40 SF	10% chrysotile	02074A HM

Asbestos-Containing Materials Building F						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
10	Roof penetration mastic	Impact as stated in plans or requested by District	Upper rooftop at seams, jacks, patches and penetrations	15 SF	5% chrysotile	02074A HM

Asbestos-Containing Materials Building G						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
11	Roof penetration mastic	Impact as stated in plans or requested by District	Lower roof top at seams, jacks, patches, HVAC duct base and penetrations	40 SF	5% chrysotile	02074A HM

Asbestos-Containing Materials Building J						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
12	No regulated asbestos-containing materials were identified as pertaining to the materials anticipated to be impacted by the Painting Project.					

**Asbestos scope of work continues on the next page.
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Asbestos-Containing Materials Building K						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
13	Roof penetration mastic	Impact as stated in plans or requested by District	Upper rooftop at seams, jacks, patches and penetrations	10 SF	10% chrysotile	02074A HM
14	Roof penetration mastic	Impact as stated in plans or requested by District	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	50 SF	10% chrysotile	02074A HM

Asbestos-Containing Materials Portables (Portables P17, P18, P19, P20, P21, P22, P23)						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
15	No regulated asbestos-containing materials were identified as pertaining to the materials anticipated to be impacted by the Painting Project.					

Asbestos-Containing Materials Covered Walkways						
Item No.	Material Description	Type of work	Location	Quantity	ACM content	Applicable Haz. Mat'l section
16	Roof penetration mastic	Impact as stated in plans or requested by District	Covered Walkway No. 1: Rooftop at seams, patches and penetrations	25 SF	5-10% chrysotile	02074A HM
17	Roof penetration mastic	Impact as stated in plans or requested by District	Covered Walkway No. 2: Rooftop at seams, patches and penetrations	65 SF	5% chrysotile	02074A HM
18	Roof penetration mastic	Impact as stated in plans or requested by District	Covered Walkway No. 3: Rooftop at seams, patches and penetrations	15 SF	10% chrysotile	02074A HM
19	Roof penetration mastic	Impact as stated in plans or requested by District	Covered Walkway No. 4: Rooftop at seams, patches and penetrations	30 SF	5-10% chrysotile	02074A HM
20	Roof penetration mastic	Impact as stated in plans or requested by District	Covered Walkway No. 5: Rooftop at seams, patches and penetrations	10 SF	5-7% chrysotile	02074A HM
21	No regulated asbestos-containing materials were identified on covered walkway no. 6 as pertaining to the materials anticipated to be impacted by the Painting Project.					

END OF ASBESTOS SCOPE

B. Lead Abatement Procedures:

1. Remove and dispose of surfaces coated with lead-based paint/glaze from areas designated by the various prime trades and/or Construction Manager as required for construction of the Project. Some work may require only partial removal of the materials/components listed.
2. It is the responsibility of all contractors to use trained and certified personnel in accordance with California Department of Public Health (CDPH) and the Environmental Protection Agency's (EPA) Renovation, Repair, and Painting (RRP) regulations, and use proper personal protection and monitoring, wet methods, and proper disposal of materials that might be impacted during this project.
3. Paint film stabilization is required where loose and flaky paint exist prior to component removal or demolition. A top coat sealer, lead-bloc or other encapsulation method, shall be applied to prevent further LBP flaking during removal.
4. For all surfaces scheduled for repainting, paint film stabilization will be required. Loose and flaky paint should be scraped and a top-coat compatible primer, lead-bloc or other encapsulation method, should be applied over intact areas for further surface preparation/painting by other trades.
5. The contractor shall be responsible for all testing required for the proper disposal of all lead-based paint and lead-containing waste materials. This will require testing using waste stream analysis by the TTLC, STLC, and TCLP methods successively, if necessary, to determine non-regulatory limits for disposal. Contractor shall ensure that the attending consultant monitors and is aware (in writing) of each specific material sampling for waste stream analysis. **This information must be provided to the consultant prior to the material being removed from the site for testing.** Materials shall not be removed from the site until such testing and its results are provided to the consultant.

Lead-Based Paint Administration Building						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
22	Metal window components	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	650 LF	0.8-1.6	02093 HM 02095 HM
23	Wood door (with windows) and transom	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	88 LF	1.8-1.9	02093 HM 02095 HM
24	Metal vent	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	4 SF	1.1	02093 HM 02095 HM
25	Wood overhang	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	3,200 SF	1.4	02093 HM 02095 HM

Lead-Based Paint Multi-Purpose Building						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
26	No regulated lead-based paint was identified as pertaining to the surfaces or components anticipated to be impacted by the Painting Project scope of work.					

Lead-Based Paint Building B						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
27	Wood door trim, includes transom	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	100 SF	1.8	02093 HM 02095 HM
28	Metal window components	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	384 LF	2	02093 HM 02095 HM
29	Wood fascia	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	360 SF	1.2-2.7	02093 HM 02095 HM
30	Metal vent	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	4 SF	1.7	02093 HM 02095 HM
31	Wood overhang	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	1,280 SF	1.1	02093 HM 02095 HM
32	Metal downspout	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	88 LF	1-1.4	02093 HM 02095 HM

Lead-Based Paint Building C						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
33	Metal vent	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side D	2 SF	1.9	02093 HM 02095 HM

Lead-Based Paint Building D						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm²	Applicable Haz. Mat'l section
34	Wood wall	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	680 SF	2	02093 HM 02095 HM
35	Metal window components	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	380 LF	0.8-1.2	02093 HM 02095 HM
36	Metal door (with windows) and transom	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	2 Total	1.3-2.4	02093 HM 02095 HM
37	Metal door frame (with windows)	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	60 LF	1.9	02093 HM 02095 HM
38	Wood overhang	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	1,250 SF	0.9-1.3	02093 HM 02095 HM
39	Metal window flashing	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side D	62 LF	1.3	02093 HM 02095 HM

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Lead-Based Paint Building E						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
40	Wood wall	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	680 SF	1.8	02093 HM 02095 HM
41	Metal window components	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	380 LF	0.9-1.2	02093 HM 02095 HM
42	Metal door (with windows) and transom	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	2 Total	1.6-2.7	02093 HM 02095 HM
43	Metal door frame (with windows)	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	60 LF	3.7	02093 HM 02095 HM
44	Wood overhang	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	1,250 SF	1.4-2.1	02093 HM 02095 HM
45	Wood fascia	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	56 LF	1.4	02093 HM 02095 HM
46	Metal window flashing	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	62 LF	1.4	02093 HM 02095 HM

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Lead-Based Paint Building F						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
47	Wood wall	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	680 SF	2.4	02093 HM 02095 HM
48	Metal window components	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	380 LF	1.1-1.2	02093 HM 02095 HM
49	Metal door (with windows) and transom	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	2 Total	1.5-2.6	02093 HM 02095 HM
50	Metal door frame (with windows)	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	60 LF	1.8	02093 HM 02095 HM
52	Metal mesh window cover	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side D	8 SF	1.4	02093 HM 02095 HM
52	Metal vent	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side D	2 SF	1.4	02093 HM 02095 HM
53	Wood overhang	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	1,250 SF	1.2-2.7	02093 HM 02095 HM
54	Wood fascia	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	56 LF	0.9	02093 HM 02095 HM
55	Metal window flashing	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – sides C & D	62 LF	1.1	02093 HM 02095 HM

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**Lead-Based Paint
Building G**

Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm²	Applicable Haz. Mat'l section
56	Wood wall	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	680 SF	3.8	02093 HM 02095 HM
57	Metal door (with windows) and transom	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	2 Total	1.6-2.2	02093 HM 02095 HM
58	Metal door frame (with windows)	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	60 LF	2.5	02093 HM 02095 HM
59	Metal downspouts	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side C	8 LF	1.7	02093 HM 02095 HM
60	Wood overhang	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	650 SF	1	02093 HM 02095 HM
61	Wood fascia	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	110 LF	1.6	02093 HM 02095 HM
62	Metal window components	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – sides C & D	228 LF	0.8-1.6	02093 HM 02095 HM
63	Metal vent	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side D	2 SF	2.2	02093 HM 02095 HM
64	Metal window flashing	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – sides C & D	62 LF	1.1	02093 HM 02095 HM

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Lead-Based Paint Building J						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
65	No regulated lead-based paint was identified as pertaining to the surfaces or components anticipated to be impacted by the Painting Project scope of work.					

Lead-Based Paint Building K						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
66	Metal door (with windows) and transom	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	2 Total	0.9-1	02093 HM 02095 HM
67	Metal door frame (with windows)	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior – side B	60 LF	1.2	02093 HM 02095 HM
68	Wood fascia	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Exterior	228 LF	0.9-1.1	02093 HM 02095 HM

Lead-Based Paint Portables (Portables P17, P18, P19, P20, P21, P22, P23)						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm ²	Applicable Haz. Mat'l section
69	No regulated lead-based paint was identified as pertaining to the surfaces or components anticipated to be impacted by the Painting Project scope of work.					

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Lead-Based Paint Covered Walkway						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm²	Applicable Haz. Mat'l section
70	Wood ceiling	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Covered Walkway No. 2	1,800 SF	0.7	02093 HM 02095 HM
71	Metal beams	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Covered Walkway No. 2	1,740 LF	5.4	02093 HM 02095 HM
72	Wood fascia	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Covered Walkways No, 2, 4 & 6	1,020 LF	1.5-2.3	02093 HM 02095 HM
73	Metal downspout	Removal/impact of component and/or surface preparation for repainting as indicated in plans or requested by District	Covered Walkway No. 5	7 LF	0.7	02093 HM 02095 HM
74	No regulated lead-based paint was identified on covered walkways no. 1 and 3 as pertaining to the surfaces or components anticipated to be impacted by the Painting Project scope of work.					

Lead-Based Paint/Lead-Based Ceramic Glaze Campus						
Item No.	Material Description	Type of work	Location	Quantity	Lead content Mg/cm²	Applicable Haz. Mat'l section
75	No regulated lead-based paint and/or ceramic glaze was identified on the exterior surfaces or components of the Metal Storage Bin, Basketball Court, Handball Court, Playgrounds, Field, Wood Shed, Parking Lots, Lunch Canopy, Flag pole, School Sign, Perimeter Gates and Fence as pertaining to the surfaces or components anticipated to be impacted by the Painting Project scope of work.					

END OF LBP SCOPE

END OF SCOPE OF WORK

1.6 WORK PLAN:

A preliminary work plan and proposed schedule shall be submitted with the bid form. Detailed work plan to be submitted within five (5) days of award of contract. At a minimum, the plan must include the following items:

- A. **Project schedule:** Include the proposed shifts, time, and manpower (include number of men per shift).

- B. **Detailed Work Plan:**
 - 1. **Protective Equipment:** Specifying protective equipment (respiratory and body protection).
 - 2. **Layout and Location on a drawing for each phase of work:**
 - a. **Decontamination:** Decontamination areas.
 - b. **Work Area:** Work area location, waste out area, location of equipment (staging area).
 - c. **Waste Bin:** Location of waste bins.
 - 3. **Document for each phase of work:**
 - a. **Containment:** Containment construction and methods.
 - b. **Disposal:** Disposal plan to include transporter and landfill name.
 - c. **Removal Methods:** Removal methods to prohibit visible emissions. Specific techniques/procedures for each material to be abated.
 - d. **Air monitoring firm/lab:** For conducting/analysis of personal samples.
 - e. **Levels of respiratory protection:** Provide levels of respiratory protection for each type of removal (e.g., floor tile, drywall).
 - f. **Equipment:** Equipment assigned to the project.

- C. **Removal Methods:** In compliance with local, state, and federal requirements for asbestos removal.

- D. **Contacts:** Point of contact for questions.

- E. **Security/Fire Watch Plan:** Names, qualifications, etc. (if applicable).

1.7 SITE ACCESS

Site access is available during the days and hours as specified in bid and pre-construction meetings.

END OF SECTION

SECTION 01011HM

**ADDITONAL CONDITIONS FOR
HAZARDOUS MATERIALS WORK**

1.1 GENERAL:

- A. The work to be performed by the HAZARDOUS MATERIALS CONTRACTOR is defined in the methodologies of the Hazardous Materials Specifications as referenced, the General and Special Conditions, Division1/General Requirements, all special requirements, Section 01011 HM and specifically outlined in the Scope of Work.
- B. As further clarification, the following apply to this contract:
1. This Contract covers the furnishings of all labor and materials and compliant disposal of hazardous materials impacted as required by the scope of work. Some work may require only partial removal of the materials listed.
 2. It is the responsibility of the Abatement Contractor and/or prime trade to use trained personnel, proper personal protection and monitoring, wet methods and compliant disposal of those materials which might be impacted during this project.
 3. The District has made every attempt to identify all materials which will be impacted by this project. Except for those materials where objective information is provided to the contrary by the Owner, Owner's Representative, or Owner's Consultant, the Abatement Contractor shall presume that detectable levels of asbestos or lead are present in all remaining materials. If the Contractor is to impact materials, the contractor shall contact the Owner or Owner's representative prior to such impact.
 4. The Abatement Contractor shall be responsible for conformance with all applicable Cal/OSHA Worker Protection and Cal/EPA Environmental Protection and South Coast Air Quality Management District requirements pertaining to asbestos and/or lead paint as applicable to the Abatement Contractor's work.
 5. Hazardous Materials Contractor shall use California Department of Public Health (CDPH) and the Environmental Protection Agency's (EPA) Renovation, Repair, and Painting (RRP) trained and certified personnel for all lead-related work. In addition, Hazardous Material Contractor must also be certified as a firm in accordance with the EPA's RRP regulation.
 6. Contractor shall work on no more than one (1) building at any one time.
 7. **Area clearance for lead:** For lead, all clearance wipes shall be randomly performed for those areas impacted through refinishing/repainting where scraping of LBP has occurred.
 8. Contractor will follow the applicable abatement procedures listed in this scope of work. Where conflict among requirements or within these specifications exists, the more stringent requirements shall apply.
 9. Provide an English-speaking on-site Competent Person who is able to understand and carry out the work set forth in the contract documents.
 10. Have fully staffed and capable crews working simultaneously on separate areas as necessary to maintain the project schedule. This is to include working multiple shifts, off-hours construction, and weekends at no additional cost to the owner.
 11. Be responsible for cooperation and coordination with school programs, Contractors of other Bid Packages, Testing Lab, local regulatory agencies, and Utility Companies.
 12. Provide to District's Project Consultant satisfactory proof that the appropriate regulatory notification(s) has/have been issued and validation of a signed copy of the Contract with the District.

13. Supply power cords, distribution boxes, adapters, etc., as necessary to complete the work of this Bid package within the prescribed time frame and as such allows the District's Environmental Consultant to have access to five (5) free outlets per containment at any one time. Power will be supplied to locations within 25 feet of each containment/regulated area at no cost to the Environmental Consultant.
14. Provide task lighting as required to facilitate the work of the Bid Package in a timely manner according to the construction schedule. Provide sufficient task lighting to facilitate work of good quality. Provide sufficient task lighting for the Consultant during visual inspections and during clearance testing.
15. Provide sanitary facilities while on-site.
16. Normal hours of construction are from 7:00 am to 5:00 pm on a daily basis. Actual construction hours may be revised as project constraints may vary.
17. Provide and maintain sufficient hazardous waste containers to accommodate the hazardous waste generated on a daily basis. Full waste bin must be removed within two (2) days after bin is full. Waste and waste containers must be removed within two days (2) after the scheduled or agreed upon ending of project.
18. Maintain a clean work area. Perform a thorough clean-up of the area on a daily basis. All hazardous waste MUST be removed from the work area and stored in a locked waste bin.
19. Where areas are accessible from the exterior and cannot be secured because of containment restrictions, Hazardous Materials Contractor shall provide either 24-hour security or construct such a secured barrier while allowing Work Area accessibility to Emergency personnel, the Environmental Consultant, and the District at all times.
20. Hazardous Materials Contractor shall submit a detailed work plan and proposed schedule within five (5) days of award of contract. At a minimum, the plan must include the following items:
 - a. **Project schedule:** Include the proposed shifts, time, and manpower (include number of employees per shift).
 - b. **Detailed Work Plan:**
 - (1) Protective Equipment: Specifying protective equipment (respiratory and body protection).
 - (2) Layout and Location on a drawing for each phase of work:
 - (a) Decontamination: Decontamination areas.
 - (b) Work Area: work area location, waste out area, location of equipment (staging area).
 - (c) Waste Bin: Location of waste bins.
 - (3) Document for each phase of work:
 - (a) Containment: Containment construction and methods.
 - (b) Disposal: Disposal plan to include transporter and landfill name.
 - (c) Removal Methods: Removal methods to prohibit visible emissions. Specific techniques/procedures for each material to be removed.
 - (d) Air monitoring firm/lab: For conducting analysis of personnel samples.
 - (e) Levels of Respiratory Protection: Provide levels of respiratory protection for each type of removal (e.g., floor tile, drywall, etc.).

- (f) Contractor to provide copies to Owner of all required SCAQMD permits; “permit to operate” for asbestos related work and “permit to construct” for lead related work of all HEPA vacuums to be used during the project.
- (4) Equipment: Equipment assigned to the project.
- c. **Specific Removal Methods**: In compliance with local, state and federal requirements for the abatement procedures.
- d. **Contacts**: Point of contact for questions.
- e. **Security/Fire Watch Plan**: Names, qualifications, etc. (if applicable)

SECTION 02071HM
ASBESTOS REMOVAL

PART 1 - GENERAL

1.1 SCOPE:

This Specification covers the abatement of friable asbestos-containing materials as described in Section 01010HM, Scope of Work.

1.2 DESCRIPTION OF WORK:

A. **General:** The Work specified herein shall be the removal of asbestos-containing material by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment, and who comply with Federal, State, and Local regulations which mandate work practices, and who are capable of performing the Work of this Contract.

B. The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the Work in accordance with applicable governmental regulations and these Specifications.

C. **Related Work Specified Elsewhere:** Refer to Sections:

Please refer to Section 01010HM, Scope of Work

1.3 TERMINOLOGY:

The following terms used in these Specifications are defined as listed below:

A. **Abatement:** Procedures to control fiber release from asbestos-containing building materials. Includes securing the Work area, removing the material, cleaning the area, and disposal of the material.

B. **Access Doorway:** A device to allow ingress and egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two or three overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway; or by using a rigid gasket door and HEPA filter vents.

C. **ACCM:** Asbestos Containing Construction Material which contain one-tenth of a percent or greater, but not greater than one percent asbestos.

D. **ACM:** Asbestos Containing Material is a material which contains greater than one percent asbestos.

- E. **Air Filtration Equipment:** A portable local filtration system equipped with HEPA filtration and capable of maintaining a constant, low velocity flow to filter and trap contamination out of the air within the work area and then circulate or exhaust the filtered air to uncontaminated areas. This equipment is also used to establish a reduced pressure within the work area.
- D. **Air Monitoring:** The process of measuring the fiber content of a specific volume of air in a stated period of time.
- F. **Air Lock:** A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, consisting of dual or triple curtained doorways or rigid gasket doors separated by a dead air space of four feet.
- G. **Air Sampling Professional:** The professional contracted or employed to supervise air monitoring and technical deficiencies in Worker protection equipment and procedures during both planning and on-site phases of an abatement project. This individual shall be a certified California Site Surveillance Technician or a California Certified Asbestos Consultant and have specialized experience in air sampling for asbestos.
- H. **Amended Water:** Water to which a surfactant has been added.
- I. **Area Monitoring:** Sampling of asbestos fiber concentrations within the asbestos Work Area and outside the asbestos Work Area which is representative of the airborne concentrations of asbestos fibers which may reach the breathing zone.
- J. **Asbestos:** The term asbestos includes Chrysotile, Amosite, Tremolite, Anthophyllite, and Actinolite.
- K. **Asbestos Fibers:** This expression refers to asbestos fibers having an aspect ratio of 3:1 and longer than 5 micrometers.
- L. **ASTM:** American Society for Testing and Materials.
- M. **Authorized Person or Visitor:** The building owners, or their authorized representative, Contractor's representative, or any representative of a regulatory or other agency having jurisdiction over the Project.
- N. **Ceiling Concentration:** An exposure of airborne concentrations of asbestos fibers at any time in excess of 10 fibers per cubic centimeters of air.
- O. **CFR:** Code of Federal Regulations.
- P. **Clean Room:** An uncontaminated area or room which is a part of the Work decontamination facility with provisions for storage of worker's street clothes and protective equipment.
- Q. **Curtained Doorway:** A device to allow ingress and egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one

sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

- R. **Decontamination Facility:** A series of connected rooms, with access doorways between any two adjacent rooms, for the decontamination of workers and of materials and equipment. A decontamination facility always contains at least one air lock.
- S. **Encapsulant (sealant):** A liquid material which can be applied to asbestos containing material and which controls the possible release of asbestos fiber from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).
- T. **Encapsulation:** Procedures necessary to apply an encapsulant to asbestos containing building materials to control the possible release of asbestos fibers into the ambient air.
- U. **Encasement:** Procedures necessary to apply an encasement product to an asbestos containing building material to control the possible release of asbestos fibers into the ambient air and to provide closure of the asbestos material to the substrate.
- V. **Enclosure:** Procedures necessary to enclose completely asbestos containing material behind airtight, impermeable, permanent barriers.
- W. **Equipment Decontamination Facility:** That portion of a decontamination unit designed for controlled transfer of materials and equipment, typically consisting of a washroom and a holding area.
- X. **Equipment Room:** A contaminated area or room which is part of the worker decontamination facility with provisions for storage of contaminated clothing and equipment.
- Y. **Fixed Object:** A unit of equipment or furniture in the Work area which cannot be removed from the Work area.
- Z. **Friable Asbestos Material: Asbestos Containing Material (ACM) or Asbestos Containing Construction Material (ACCM)** that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- AA. **Glovebag Technique:** A method with limited applications for removing small amounts of friable asbestos-containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contained work area. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of 6-mil transparent regulate plastic), two inward projecting long sleeve rubber gloves, one inward projecting water-wand sleeve, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process. All workers who are permitted to use the glovebag technique must be highly trained, experienced, and skilled in this method.

- BB. **HEPA Filter:** A high efficiency particulate air (HEPA) filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- CC. **HEPA Vacuum Equipment:** Vacuuming equipment with a HEPA filter system.
- DD. **Holding Area:** A chamber in the equipment decontamination facility located between the washroom and an uncontaminated area. The holding area comprises an air lock.
- EE. **Log Book:** A notebook or other book containing essential project data and daily project information and a daily project diary. This book is kept on the Project site at all times.
- FF. **Mini-Enclosure:** A method with limited applications for removing small amounts of friable asbestos containing material typical for small-scale, short duration type projects.
- GG. **Movable Object:** A unit of equipment or furniture in the Work area which can be removed from the Work area.
- HH. **NESHAPS:** National Emission Standards for Hazardous Air Pollutants.
- II. **Negative Air Pressure Equipment:** A portable local exhaust system equipped with HEPA filtration and capable of maintaining constant, low velocity airflow into contaminated areas from adjacent uncontaminated areas.
- JJ. **NIOSH:** National Institute of Occupational Safety and Health.
- KK. **Non-Friable Asbestos Material:** Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not release fibers in excess of the asbestos control limit during any appropriate use, handling, demolition, storage, transportation, processing, or disposal. Also a material which cannot easily be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- LL. **Personnel Monitoring:** Sampling of asbestos fiber concentrations within the breathing zone of an asbestos Worker.
- MM. **Plasticize:** To cover floor, walls, and other surfaces with plastic sheeting as herein specified.
- NN. **Removal:** All herein specified procedures necessary to remove asbestos-containing materials from the designated areas and to dispose of these materials at an acceptable site.
- OO. **Shower Room:** A room between the clean room and the equipment room in the worker decontamination unit with hot and cold or warm running water and suitably arranged for complete showering during decontamination. The shower room comprises an air lock between contaminated and clean areas.
- PP. **Surfactant:** A chemical wetting agent added to water to improve penetration.

QQ. **Washroom:** A room between the Work area and the holding area in the equipment decontamination area; or between the equipment room and non-work area (2-stage decontamination unit). The washroom comprises an air lock.

RR. **Wet Cleaning:** The process of eliminating asbestos-contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.

SS. **Work Area:** Designated rooms, spaces, or areas of the Project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area which has been sealed, plasticized, and equipped with a decontamination enclosure system. A non-contained work area is an isolated or controlled-access work area which has not been plasticized nor equipped with a decontamination enclosure system.

TT. **Worker Decontamination Facility:** That portion of a decontamination facility designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

1.4 **APPLICABLE DOCUMENTS:**

The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements shall apply.

A. **Regulations:** Comply with applicable federal, state, and local regulations.

1. General - Codes, regulations and references applicable to asbestos abatement work include but are not limited to the following:

2. All Federal, State, Local, and South Coast Air Quality Management District regulations.

3. American National Standards Institute (ANSI) publications;

Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems

Z87.1-79 Occupational and Educational Eye and Face Protection

Z88.2-80 Practices for Respiratory Protection

Z89.1-81 Requirements for Protective Headgear for Industrial Workers

Z41-83 Personal Protection - Protective Footwear

Z88.6-84 Respiratory Protection - Respiratory use Physical Qualifications for Personnel

4. American Society for Testing and Materials (ASTM) publications;

D331-56 Surface and Interfacial Tensions of Solutions of Surface Active Agents

5. Code of Federal Regulations (CFR);

29 CFR 1910.12 Construction Work

29 CFR 1910.20 General Safety and Health Provisions Access to Employee Exposure and Medical Records

29 CFR 1910 Subpart 1, Personal Protective Equipment

29 CFR 1910.145 Specifications for Accident Prevention Signs and Tags

29 CFR 1926.1101 Asbestos

29 CFR 1926 Asbestos, Tremolite, Anthophyllite, and Actinolite (Including All Mandatory Appendices)

34 CFR 231 Appendix C, Procedures for Containing and Removing Building Materials Containing Asbestos

40 CFR 61 Subpart A and Subpart M, USEPA, National Emission Standards for Hazardous Air Pollutants (NESHAPS)

6. Compressed Gas, Inc.

G-7.1 Commodity Specification for Air (1973)

7. National Fire Protection (NFPA)

No. 70.1984 National Electrical Code

8. UL 586-77 (R1982) Test Performance of High Efficiency Particulate Air Filter Units (June 10, 1977, 5th Ed.; Rev. March 12, 1982)

9. National Institute for Occupation Safety and Health (NIOSH)

N31, 3rd. Ed., Vol. 1 Manual of Analytical Methods, Method 7400 Fibers

10. Environmental Protection Agency Documents:

EPA 530-SW-85-007 Asbestos Waste Management Guidance, May 1985

EPA 560/5-85-024 Guidance for Controlling Asbestos Containing Material in Buildings, June 1985

EPA 600/4-85-049 Measuring Airborne Asbestos Following and Abatement Action, November 1985

EPA 560 OPTS-86.001 A Guide to Respiratory Protection for the Asbestos Abatement Industry, April 1986

11. Department of Transportation (DOT)

DOT 49 CFR, Parts 171-177 regarding the transport of hazardous materials.

12. California Administrative Code (CAC)

Title 8, Article 2.5 Registration Asbestos-Related work (Section 341.6 through 341.14)

Title 8, Section 5208 General Industry Safety Orders, Asbestos Regulations

Title 22, Division 4, Minimum Standards for Management of Hazardous Chapter 30 and Extremely Hazardous Waste

13. Air Pollution Control District Regulations

South Coast Air Quality Management District Rule 1403

B. **Codes and Ordinances:** Comply with all state, county, and city codes and ordinances as applicable.

1.5 SUBMITTALS AND NOTICES:

Prior to commencement of work and/or within the time-frames specified below:

A. **General:** Requirements are as set forth in the General Conditions and Supplementary Conditions (Owner's) for items required to be submitted under this section.

B. **Product data:** Shall include manufacturer's product data, specifications, samples and application instructions and other pertinent information as necessary.

C. **Alternatives:** Product substitution submittal shall be in accordance with the General Conditions and Supplementary (Owner's) Conditions.

D. **Procedure Plans and Shop Drawings:** Submit to the Owner's consultant Procedure Plans and Shop Drawings and ensure that they are in compliance with this Specification and applicable regulations. Shop Drawings will include: construction of decontamination enclosure systems and/or facilities; isolation of the Work areas; placement of negative air machines and their exhaust, emergency exits, and placements of fire extinguishers and first aid kits.

1. Personal monitoring procedures in accordance with T8 CCR 1529.

2. Phasing of abatement work indicating daily roster of workers for each phase.

3. Security system warning signs locations in accordance with 29 CFR 1910.245, T8 CCR 1532.1, and T8 CCR 1529.

4. Detailed plans for decontamination facilities, toilets, and systems providing inter-room and work area to outside communication showing connections to existing building.
 5. Standard procedures for protecting workers, visitors, and employees and protection of spaces outside work area from contamination.
 6. Engineering systems exposure control indicating number, location, and capacity of supply and exhaust systems, the expected direction of flow, and the range of expected negative air pressure in each area.
- E. **Qualifications: For Public Bid Projects** submit the following documents within seven (7) days from Notice to Proceed or by contract requirements, whichever is greater
1. **License:** Submit copy of current contractor license from the California Contractors State License Board.
 2. **Insurance:** Submit copy of current insurance as required to perform work and as required by the General and Hazardous Materials specifications and Owner and Owner's representative.
 3. **Registration:** Submit copy of the registration for Asbestos-Related Work from the Division of Occupational Safety and Health in accordance with Title 8, Article 2.5 of the California Administrative Code.
 4. **Personnel Training-Superintendent and Foreman (Competent Person):** Submit copy of current certificate signed training institution that he or she has successfully completed a training course in asbestos abatement project supervision (Competent Person) offered by an EPA endorsed and Cal-OSHA accredited educational institution.
 5. **Personnel Training-Workers:** Submit copy of the asbestos abatement employee training program, and certificates signed by each employee that he or she has had instructions on the hazards of asbestos exposure, has had training in asbestos removal, and understands this instruction. Submit copy of current certificate signed by the training institution that he or she has successfully completed a course (or refresher) in asbestos abatement worker training offered by an EPA endorsed and Cal-OSHA accredited educational institution.
 6. **Personal Protection and Exposure Understanding:** Submit documentation to the Owner's consultant indicating that each employee has had instruction on the hazards of asbestos exposure, on use and fitting of respirator, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures and understands this instruction.
 7. **Respirators:** Submit a written standard operating procedure governing selection, fit-testing, and use of respirators in accordance with 29 CFR 1910, Subpart 1, 29 CFR 1926.1101, CGAI Standard G7.1, ANSI Z88.2, and Z88.6. Also submit manufacturer's certification that the respirators to be used in this project comply with these regulatory requirements.

8. **Medical Examination:** Submit proof that personnel who will be entering contaminated areas have had medical examinations, and furnish the results of said exam to Owner's consultant. Comply with 29 CFR 1910.20 for access to employee exposure and medical records.
 - a. **Exam and History:** Before exposure to airborne asbestos, provide each employee with a comprehensive medical exam meeting the general definition outlined in California Administration Code Title 8 California Code of Regulations. No employee shall be allowed to enter the Work Area without having first provided a copy of his Medical History to the Owner's Representative.
 - b. **Employee Roster:** Submit an employee roster to Owner's consultant for each Work shift and confirm in writing within 24 hours of commencement of shift. The roster will consist of a list of employees who have received training and medical examinations per paragraphs Part 1.5, E.4, E.5, E.6, and E.8 of this section. A copy of this list is to be maintained in the Project Logbook.
 - c. **Proof of Documentation to Physician:** Contractor must provide verification to the Owner's consultant that the employer has provided the following information to the examining physician or physicians:
 - i. A copy of OSHA regulation Standard 29 CFR 1926.1101 and Appendices D, E, and F.
 - ii. A description of the affected employee's duties as they relate to the employee's exposure.
 - iii. The employee's representative exposure level or anticipated exposure level.
 - iv. A description of any personal protective and respiratory equipment used or to be used.
 - v. Information from previous medical examinations of the affected employee
 - vi. that is not otherwise available to the examining physician.

F. Notifications, Permits, Communications, and Postings.

1. **Submit copies of notifications to all appropriate Government agencies, including the following:**
 - a. CAL-OSHA (310) 949-7827 Notification shall be in accordance with the Section 341.9 of Title 8 of California Administrative Code.
 - b. South Coast Air Quality Management District (If required) Hazardous Materials Section:

21865 Copely Drive
Diamond Bar, CA 91765-8142
(909) 396-2336

- c. Any Notifications to EPA.
 - d. All Notifications and Copies of Government agency correspondence shall be included in the submittals and copies are to be kept in the Project Logbook.
 - e. Where local police and fire departments have jurisdiction, secure approval of the proposed security and safety plans for the work prior to submittal to Owner's Representative. Contact both departments for the requirements of the approval process.
2. **Proof of Permits, Site Requirements and Disposal of Waste:** Submit proof satisfactory to the Owner's consultant that all required permits, site location, and arrangements for transport and disposal of asbestos containing materials, supplies, and the like have been obtained. Copies of these items are to be kept in the Project Log Book
 3. **Safety Compliance:** In addition to detailed requirements of this Specification, comply with laws, ordinances, rules, and regulations of federal, state, regional, local authorities, and Owner's representative regarding handling, storing, transporting, and disposing of asbestos waste materials. Comply with applicable requirements of the current issue of 29 CFR 1910, 29 CFR 1926.1101, and 40 CFR 61, Subparts A, & M, 40 CFR 61.152, and CAC Section 5208.
 4. **Standards Interpretations:** Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting Work. Where requirements of this Specification and reference documents vary, the most stringent requirement shall apply.
 5. **Availability of Regulatory References:** Contractor shall have at least one copy each of 29 CFR 1910, 29. CFR.1910.134; 29 CFR 1926, 40 CFR Part 261, and CAC, Title 8, Section 5208, at his office and also at the job site.
 6. **Posting of Caution Signs:** Before the commencement of any Work at the site, post bilingual EPA and CAL-OSHA caution signs in and around the Work Area to comply with EPA and OSHA regulations.
 7. **Submit Training and Certifications:** Submit proof to the Owner's consultant that all asbestos workers assigned to this project are currently Cal-OSHA certified and accredited as an Asbestos Worker under the Asbestos Hazard Emergency Response Act. Submit proof to the Owner's consultant that at least one employee on each shift shall be currently Cal-OSHA certified and accredited as a Supervisor and shall have successfully completed in the last 12 months a course of instruction meeting the requirement for "Competent Person" (29 CFR 1926.1101).
 8. **Project Logbook Submittals:** Submit front-end documents of Project Logbook. These documents will include copies of the Contractor's Respiratory Protection Program, HUD, and OSHA documents, worker decontamination procedures, equipment decontamination procedures, authorized personnel list, format of daily report sheets, test reports on waste materials, and format of waste manifests. The completed daily reports and waste manifests shall be submitted along with pay

requests for completed work. Copies of these front-end documents shall be maintained at the site during the asbestos removal phase of the Project.

- a. Superintendent is required to keep the Project Logbook up to date, ensure that all work criteria is followed in the proper sequence, and to fill out the enclosed check list to document the progression of the job. A separate checklist will be required for each individually prepped work area.
9. **Property Condition Assessment:** Owner, Architect/Engineer, or Owner's consultant, and Contractor must agree in writing on building and fixture condition prior to commencement of Work. The Contractor shall submit an inventory of all items removed from the Work area and an inventory of all items remaining in the Work area.
10. **Informing Other Trades:** The asbestos abatement contractor must inform other employers on site of the nature of the Contractor's work with asbestos-containing materials and the existence of and requirements pertaining to regulated areas. Such notification shall be coordinated with, and approved by, the Owner.
11. **Pressure Strip Recordings (Manometer):** At the termination of the project, submit copies of all pressure strip chart recordings.

G. **Field Air Sampling:**

Personal monitoring and other monitoring which is required by law or considered necessary by the Contractor for Worker protection shall be the responsibility of the Contractor and performed by Contractor's Air Sampling Professional.

H. **Certifications:**

1. **Equipment Certification:** Submit manufacturer's certification that vacuums, negative air pressure equipment filters, and other local exhaust ventilation equipment conform to ANSI Z9.2, as well as all Federal, State, Local, and SCAQMD regulations.
2. **Rental Equipment:** When rental equipment is to be used in removal areas or to transport waste materials, a copy of the written notification provided to the rental company informing them of the nature of use of the rented equipment shall be submitted to the Owner or Owner's Representative and signed by the rental company.

I. **Use of Vec-loader Equipment:**

The use of the vacuum equipment, its placement, and safety program shall be submitted for review.

1.6 **PERSONAL PROTECTION AND SAFETY:**

- A. **General:** The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his or her plant, appliances, methods, and for any damages which may result from his or her operations, improper construction practices, or maintenance. He

or she shall erect and properly maintain at all times as required by the conditions and progress of the Work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site.

B. Personal Protective Equipment:

1. Provide workers and authorized visitors with sufficient set of protective full body impervious protective clothing. Personal Protective Equipment shall comply with the requirements of 29 CFR 1910, Subpart I.
2. Work clothes shall consist of fire retarding, disposable, full-body coveralls, head covers, boots, rubber gloves, and steeled-toe boots or equivalent in accordance with 29 CFR 1926.134, and ANSI Z41. Sleeves at wrists and cuffs at ankles shall be secure.
3. Provide eye protection and hardhats as required by applicable safety regulations and shall conform to ANSI 87.1 and 89.1.
4. Provide authorized visitors with suitable protective clothing, headgear, eye protection, and footwear whenever they are required to enter Work area.

C. Respiratory Protection Requirements:

1. Disposable (single use) respirators are not to be worn for protection against asbestos.
2. **Providing of Equipment:** Provide all workers, foremen, superintendents, authorized visitors, and inspectors personally issued and marked respiratory equipment approved by NIOSH. When respirators with disposable filters are employed, provide sufficient filters for replacement as recommended by manufacturers or this specification. Selection of respirators shall be made according to the guidance of 29 CFR 1910 Subpart 1, ANSI Z88.2; CGAI G7.1; EPA 560 OPTS-86.001; and Table I of this section. The Contractor shall provide masks, new in the box, in all sizes produced by the respirator manufacturer (one each). These masks shall be provided for the exclusive use of the Owner's representatives and shall be available at all times.
3. **Approved Respirators:** Contractor will ensure that all respirators used shall be selected from those approved by National Institute of Occupational Safety and Health (NIOSH) for use in atmospheres containing asbestos, solvents, removers, and against other toxic materials which may be used during the project.
4. **Powered Air-Purifying Respirators (PAPR) Usage:** Full containment work activities associated with the abatement of asbestos-containing materials shall be conducted while wearing, at a minimum, a full facepiece, powered air-purifying respirator equipped with HEPA filters during the following tasks or under the following conditions:
 - a. During removal or disturbance of asbestos-containing materials or where the likelihood of disturbance may occur. This determination shall be up to the Owner's consultant.

- b. During all cleanup and wipe down of area. This determination shall be up to the Owner's consultant.
 - c. During any operation where damaged friable asbestos is present during area preparation.
 - d. At any time that air monitoring levels indicate that asbestos concentrations are greater than 0.25 fibers/cc.
 - e. Any situation where gross contamination has occurred because of a tear or rupture in the containment and air sampling indicates that airborne asbestos levels have exceeded 0.25 fibers/cc.
5. **1/2 Mask Respirator Usage:** For the followings tasks or conditions a 1/2 mask air-purifying respirators equipped with high efficiency filters may be used:
- a. Provided maximum airborne fiber concentration outside the respirator is at or below 0.1 fibers/cc.
 - b. Pre-construction sealing of openings and penetrations to the work areas with plastic sheeting.
 - c. Decontamination of removable items.
 - d. Loading asbestos-containing drums on truck for transportation and unloading bags at approved landfill.

TABLE 1

Maximum Airborne Fiber Concentration Outside The Respirator	Protection Factor	Minimum Acceptable Respirator
1 fiber/cc**	10	Half mask and dual cartridge air purifying respirator with cartridges approved for asbestos and with high efficiency filters.*
05 fibers/cc	50	Full face piece respirator and with high efficiency filters.*
10 fibers/cc	1000	Powered air purifying respirator (full face piece) and with high efficiency filters.*
100 fibers/cc**	1000	Type "C" supplied air respirators, full facepiece, pressure demand mode.
Over 100 fibers/cc**	>1000	Type "C" supplied air respirators, full facepiece, pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

*Greater respiratory protection is always acceptable regardless of asbestos concentrations.

**Must demonstrate that the fiber levels will not exceed 0.01 fibers per cubic centimeter (f/cc) inside the respirator based on quantitative mask fit testing for each individual using the respirator protection factor formula.

6. **Type "C" Respirator Usage:** When Type "C" respirators are not required according to the OSHA standard (29 CFR 1926.1101 or this specification, whichever is more stringent), provide workers with approved, permanent, personally-issued and marked respirators with replaceable filters. Provide sufficient quantity of filters approved by NIOSH for use in asbestos environments so that workers can change filters as required by manufacturer during the workday. Filters shall not be used any longer than one workday. Respirator filters shall be stored at job site in clean room and shall be totally protected from exposure to asbestos prior to their use.
7. **Air Supply Compressors:** Compressors shall meet the requirements of 29 CFR 1910 Subpart 1 and the following:
 - a. Periodic inspection of the carbon monoxide monitor shall be evidenced.
 - b. Documentation of adequacy of compressed air system/respiratory protection system shall be retained on site. Documentation shall include a list of compatible components with the maximum number and type of respirators that may be used with the system.
 - c. The full facepiece, type "C" supplied-air respirator system shall be fully approved by appropriate regulatory agencies. The compressor shall be specifically for breathing air and have alarms to indicate compressor failure and overheating. Compressor(s) shall have in-line air-purifying sorbent beds and filters to assure breathing air quality (Grade "D" or better for oil lubricated compressors; Grade "H" or better for electric compressors). The air supply system shall have safeguards to allow for sufficient capacity to allow workers to escape if the air system fails. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon-monoxide alarm, or both. If only a high-temperature alarm is used, a carbon-monoxide converter shall be used.
 - d. The compressor intake shall be designed so as to avoid entry of contaminated air into the system either from the compressor exhaust or from other sources of potential contamination. Periodic testing of compressed air shall insure that systems provide air of sufficient quality.
 - e. A pressure-indicating gauge shall be placed at the point of connection (distribution point) where the respirator supply hose (which is a part of the approved facemask/hose system) is attached to the air filtration system or any supply manifold which is located between the mask/hose apparatus and the compressor/filter system. The pressure gauge shall be capable of measuring pressure levels which are consistent with those specified by the respirator operating specifications.
 - f. The correct pressure level shall be verified at each distribution point each time that the system is engaged. The air supply system will be operated only when operating specifications are maintained.

Fit Testing: Air respirators shall be fit-tested utilizing Saccharin Solution Aerosol Protocol, Bitrex™ (Denatonium Benzoate) Solution Aerosol

Protocol or isoamyl acetate Protocol with organic filters at the beginning of each project or a minimum of every 12 months as described in Appendix C, 29 CFR 1926.1101. Any of the above three protocols or other similar regulatory protocol may be used.

D. Bilingual Worker protection procedures (Posted in both English and Spanish):

Adequate shower facilities shall be provided by the Contractor. An employee leaving the Work area shall follow all decontamination procedures necessary or as described herein.

1. **Posted Procedures:** Provide and post, in the Equipment Room and the Clean Room, the decontamination and work procedures to be followed by workers and authorized visitors as described in these Specifications.
2. **Entering the Work Area:** Each worker and authorized visitor shall, upon entering the job site: put on a respirator and clean protective clothing before entering the Equipment Room or the Work area. Clothing that is appropriate for weather and temperature conditions is worn under the protective clothing.
3. **Personnel Exiting the Work Area:**
 - a. Ensure that personnel do not leave work areas through the equipment decontamination enclosure.
 - b. All workers and authorized visitors shall, each time they leave the Work area; remove gross contamination from clothing before leaving the Work area using a HEPA vacuum; proceed to the Equipment Room and remove all clothing except respirators by carefully rolling down the garment to reduce exposure to dust; clean the outside of the respirator with soap and water while showering; remove the respirator; and thoroughly shampoo and wash themselves.
 - c. Following showering and drying off, each Worker shall proceed directly to the clean change room and dress in clean clothes at the end of each day's Work, or before eating, smoking, or drinking.
 - d. Before reentering the Work area from the Clean Change Room, each worker and authorized visitor shall put on a clean respirator and shall dress in clean protective clothing.
 - e. All workers and authorized visitors shall, at the end of the work day; place disposable clothing in the abatement waste; clean protective gear, including respirators, according to standard procedures; wash hands and face again; proceed to the shower facilities, being certain to wash hair.
 - f. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work area.
 - g. Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of asbestos-containing materials prior to commencing actual abatement and until final cleanup is completed.

4. **Equipment Removal Procedures:** Clean surfaces of contaminated containers and equipment thoroughly by wet sponging or wiping before moving such items into the equipment decontamination enclosure system washroom or through the shower for final cleaning and removal to uncontaminated areas.
- a. Contaminated work footwear shall be stored in the Equipment Room when not in use in the Work area. Upon completion of asbestos abatement, dispose of footwear as contaminated waste.
 - b. Workers removing waste containers from the equipment decontamination enclosure shall enter the holding area from outside wearing a respirator and dressed in clean disposable coveralls. No worker shall use this system as a means to leave or enter the washroom or the Work area.
5. **Safety Issues:**
- a. During the removal operations the Contractor may be placing his or her workers in a potentially hazardous electrical environment. Care and special consideration should be exercised by the Contractor to avoid electrical shock to his employees. The requirements as set forth in the latest edition of the National Electrical Code, shall be adhered to at all times. Particular emphasis shall be placed on the requirements listed in Article 210—BRANCH CIRCUITS, Article 225—OUTSIDE BRANCH CIRCUITS AND FEEDERS, Article 250—GROUNDING, Article 300—WIRING METHODS, and Article 305—TEMPORARY WIRING, whenever and wherever the existing electrical power service shall be deenergized and temporary electrical power utilized.
 - b. During summer work activities the Work area environment may be very hot and humid. The Contractor shall take precautions to protect his or her workers from the hostile environment as well as the asbestos material. First-aid items such as stretchers, water, and cold packs should be kept adjacent to the Work area exits, thus allowing any personnel requiring emergency treatment egress from the Work area with minimum contamination to the clean environment. No worker shall be allowed to reach through the plastic or air lock door to get water or first aid supplies during break periods inside the Work area. Breaks, lunch, or worker rest periods should be held outside the Work area. All decontamination procedures shall be followed prior to exiting the Work area except in extreme emergencies.
 - c. During cold weather periods the workers shall be provided with adequate protection from the environment to not cause harm to the workers.
 - d. If evacuation of the Work area is required by contaminated personnel, due to an emergency, all work efforts shall stop, and all forces shall be directed at minimizing the area contamination, cleanup operations, and first-aid procedures. These activities shall be noted in the daily logbook.
 - e. During work activities requiring decontamination procedures, the Contractor shall provide a means of communication for the workers inside the Work area without requiring personnel to enter or leave the Work area. This method of communications shall be a two-way radio, localized wire-connected telephone,

or similar system. This communication system shall remain intact until the final containment plastic is removed. Then all equipment shall be wiped down, HEPA vacuumed or disposed of as asbestos-contaminated material.

E. Posting of Warning Signs:

Post two safety warning signs which follow the "Sample Format Warning Sign" shown below:

Sample Format Warning Sign
Minimum Size - 24" x 36"
Material - Aluminum or Fiberglass
Script:

DANGER
ASBESTOS
MAY CAUSE CANCER
CAUSES DAMAGE TO LUNGS
AUTHORIZED PERSONNEL ONLY
WEAR RESPIRATORY PROTECTION AND
PROTECTIVE CLOTHING IN THIS AREA

Signs shall be at the entry points to the Work area and shall be clearly read to a distance of 25 feet from the entry point.

F. Emergency Precautions and Procedures:

1. Establish emergency and fire exits from the Work Area. Emergency exits shall be equipped with 2 full sets of protective clothing and respirators.
2. Local medical emergency personnel, both ambulance crews and hospital emergency room staff, shall be notified, prior to commencement of abatement operations, as to the possibility of having to handle contaminated or injured Workers and shall be advised on safe decontamination.
3. Contractor shall be prepared to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated without delay for decontamination. When an injury occurs, the Contractor shall stop Work and implement fiber reduction techniques (e.g., water spraying) until the injured person has been removed from the Work Area.
4. Before starting actual removal of asbestos material(s), local police and fire departments (LA County required) shall be notified as to the danger of entering the Work Area. The Contractor shall make every effort to help these agencies form plans of action should their personnel need to enter the contaminated area.

1.7 **SUPERINTENDENT FOREMAN, CRAFTSMAN:**

The Contractor shall have a job superintendent (Competent person) present at all times while work on this Contract is in progress.

The Project Superintendent (Competent person) shall be thoroughly familiar and experienced with asbestos removal and related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He or she shall be knowledgeable of all EPA, OSHA, and NIOSH requirements and guidelines. He or she shall be trained in the proper use of all personal protection and safety equipment including, but not limited to, air purification and respiratory systems.

In addition to the Superintendent (Competent person), the Contractor shall furnish 1 or more foremen (Competent person when Superintendent is absent) who are familiar and experienced with asbestos removal and its related work, safety procedures, and equipment.

- A. It shall be a requirement of this Contract that the superintendent and/or one or more of the Contractor's foremen be inside the Work area at all times while work is in progress.
- B. It is the intent of these Specifications that all phases of the Work shall be executed by skilled craftsmen experienced or receiving training by experienced personnel in each respective trade.
- C. All superintendents and foremen shall have been trained by attending a five-day AHERA and Cal-OSHA approved Contractor/Supervisor of Asbestos Abatement training course and satisfactorily passing all examinations following the training program to allow and maintain all Federal, State, and local requirements and certifications. Only EPA and Cal-OSHA approved training programs will be accepted.
- D. Workers shall have been trained by attending an AHERA and Cal-OSHA approved Asbestos Worker training course and satisfactorily passing all examinations following the training program to allow and maintain all Federal, State, and local requirements and certifications. Only EPA and Cal-OSHA approved training programs will be accepted.
- E. The Competent person on-site must be able to clearly communicate in a manner so that the Owner's Consultant and Owner can clearly understand.

PART 2 - MATERIAL AND EQUIPMENT

2.1 **MATERIALS:**

- A. **Packaging:** Deliver all materials in the original packages, container, or bundles bearing the name of the manufacturer and the brand name.

- B. **Storage:** Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.
- C. **Plastic:** (Fire retardant polyethylene) Sheet, of 6-mil thickness or greater as specified in sizes to minimize the frequency of joints.
- D. **Tape:** Capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions. Use tape with tough backing which does not leave residue on the adhering surface.

E. **PROTECTIVE PACKAGING**

- 1. **Impermeable containers:** Suitable to receive and retain any asbestos-containing materials until disposal at an approved site, labeled in accordance with OSHA Regulation 29 CFR 1910.1025 and DOT 49 CFR 171-177. Containers must be both air and watertight and must be resistant to damage and rupture. Drums must be appropriately labeled.
 - 2. **Bags:** Appropriately labeled 6-mil sealable polyethylene bags as minimum.
 - 3. **Bilingual labels:** (English and Spanish) on containment glove bags, waste packages, contaminated material packages and other containers shall be in accordance with EPA and/or OSHA standards.
- F. **Warning labels and signs:** As required by 29 CFR 1926.1101 and 29 CFR 1910.145.

G. **Encapsulant use:**

- 1. For bridging encapsulant use:
 - a. Encapsulant to be specified and approved by Owner's representative
- 2. After removal use clear encapsulant as follows:
 - a. Encapsulant to be specified and approved by Owner's representative
- 3. At steam piping lagging to be encapsulated in place use penetrating encapsulant as follows:
 - a. Encapsulant to be specified and approved by Owner's representative
- 4. Protective coating at encapsulated steam, pipe lagging:
 - a. NOT APPLICABLE

H. Surfactants:

Surfactants or wetting agent, for amending water will be 50 percent polyoxyethylene ether and 50 percent polyoxyethylene ester, or equivalent, at a concentration of one ounce per 5 gallons of water.

I. Encasement:

1. Encasement material to be specified and approved by Owner's representative
2. Characteristics
 - a. Meets DNA and EPA 95 guidelines for clean air.
 - b. Non-toxic — Non caustic — Non flammable
 - c. Grease and oil retardant
 - d. Mar resistant
 - e. Crack resistant
3. Suitable Product
 - a. Encapsulant to be specified and approved by Owner's representative

J. Lagging adhesive:

1. Meets NFPA 90A Code;

K. Other materials:

Provide all other materials, such as lumber, nails, and hardware, which may be required to construct and dismantle the decontamination area and the barriers that isolate the Work area.

2.2 TOOLS AND EQUIPMENT:

- A. **Provide suitable tools for asbestos removal.**
- B. **Air filtration equipment:** High efficiency particulate air (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2-79, local exhaust ventilation or equal. **Each HEPA machine will have current permitting stickers, if applicable, placed on the machine and documentation provided on-site.** No air movement system or air filtering equipment shall discharge unfiltered air outside the Work area. If volatile chemicals are used, use manufacturer's guidelines and provide appropriate filters for solvent vapor or other organic based material use.
- C. **Pressure recorder (manometer):** A continuously recording monitor shall measure and record the difference in air pressure inside the Work area from that outside the Work area. The recording system shall be accurate to the nearest 0.001 inches of water pressure differential and shall be equipped with an alarm which sounds if the difference becomes less than 0.02 inches of water gauge.
- D. **Aggressive sampling equipment:** Contractor shall provide a one Hp electric leaf blower and sufficient number of electric box fans for the final air clearance.

PART 3 - EXECUTION

3.1 PREPARATION:

A. **Separation of Work areas:**

Separation of work areas from occupied areas as directed in the scope of work:

1. **Reference:** Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g., other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.
2. **For areas requiring constructed barrier walls:** Separate parts of the building required to remain in use (as shown in Plans) from parts of the building that will undergo asbestos removal by means of airtight barriers, constructed as follows:
 - a. Build suitable wood or metal framing and apply 3/8-inch minimum thickness sheathing on work side only, unless noted otherwise.
 - b. Cover both sides of partition with double layer of plastic sheet with joints staggered and sealed with tape. Edges of partition at floor, walls, and ceiling shall be caulked airtight.

3. **Electrical Shut-down:** Shut down electric power which serves the Work area. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements.
4. **HVAC Shut-down:** Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure. Physically blank off, with light gage metal, all supply and return air ductwork which leads to and from an isolated work area when the air-handling unit serves areas other than within the isolated work area.
5. **Seal off openings:** Seal off all openings, including but not limited to windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetrations of the Work areas, with plastic sheeting (minimum of 4-mils thick) sealed with tape.

B. Preclean work area:

1. **Moveable Objects:** Clean all moveable objects within the Work area using HEPA vacuum equipment and wet cleaning methods. Remove these objects from the Work area to a designated temporary storage location.

Protection of and accounting for the stored materials is the sole responsibility of the Contractor.

2. **Fixed Objects:** Preclean fixed objects within the proposed work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and enclose with minimum of 6-mil polyethylene sealed with tape.
3. **Vacuum & Wet Methods:** Preclean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

C. Prepare work area:

1. **References:** Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g., other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.
2. **Non-Contaminated Lighting:** Remove and clean objects, such as lights and other items not previously sealed off, that may interfere with asbestos removal. Use HEPA vacuum equipment and wet methods during fixture removal to reduce asbestos dispersal. Wrap in plastic and store for reinstallation upon completion of testing procedures.
3. **Protection of Fixed Objects:** Protect all fixtures, grills, lockers, and other non-removable equipment from water. Also, protect painted surfaces and flooring.
4. **Plasticization:** Cover non-impacted floor, wall and/or ceiling surfaces with plastic sheeting sealed with tape. Use a minimum of two layers of 6-mil plastic on floors

and two layers of 4-mil plastic on walls and ceilings. Cover floors first so that plastic extends at least 12 inches up on walls, then cover walls with plastic sheeting to the floor level, thus overlapping the floor material by a minimum of 12 inches.

- a. All criticals (doors, vents, openings, wall penetrations, etc.) will be covered with 2 layers of 6-mil plastic and secured with duct tape to prevent leakage of air.
 - b. The second layer of floor sheeting may be black or dark in color. If floor coverings are scheduled for removal, per Plans and/or Scope of Work, floor plastic is not placed until after floor coverings are removed, which occurs during Asbestos Removal activities, paragraph 3.2.
 - c. All joints in the plastic sheeting shall have a minimum of 12 inches of overlap and shall be securely sealed with tape to prevent leakage of air and water.
5. **Plasticization of carpeted areas:** Where carpet will remain in-place and must be protected during abatement procedures, the following applies for preparation of said surface.
- a. All carpet remaining in place during abatement activities will be covered with 2 layers of 10-mil reinforced plastic and secured with duct tape to prevent moisture intrusion or asbestos contamination.
 - b. Each layer of floor sheeting shall be installed separately and seams between the top and bottom layers must be staggered by approximately three (3) feet.
 - c. Seams on the same layer must have at a minimum 18 inches overlap and be held in place by the use of spray glue in the overlap area and duct tape at both plastic termination edges.
 - d. Both top and bottom layers of plastic must extend to a distance of one (1) foot vertically on all walls and vertical surfaces to be covered. The plastic must be folded, not cut, at wall or corner junctures as it extends vertically. The folds shall be held in place by the use of spray glue and duct tape.
6. **Emergency Exits:** Maintain emergency and fire exits from the Work areas or establish alternative exits satisfactory to fire officials.
7. **Establish a reduced pressure in the Work area:**
- a. **Determine the Ventilation Requirements:**
 - (1) **General:** Provide fully operational negative pressure systems supplying a minimum of one air change every 15 minutes. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total ventilation requirement in cubic feet per minute (cfm) for the work area by dividing this volume by the air change rate.

Ventilation Required (CFM) = Volume of work area (cu. ft.)/15 min.

(2) **Number of Units:** Determine number of units needed to achieve 15 minute change rate by dividing the ventilation requirement (CFM) above by capacity of exhaust units(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machines labeled operating characteristics.

$$\text{Number of Units Needed} = \frac{\text{Ventilation Requirement (CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}}$$

Add one additional working unit as a backup in case of equipment failure or machine shutdown for filter changing.

(3) **Location of Exhaust Units:** Locate exhaust unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses work area as much as possible. This may be accomplished by positioning the exhaust unit(s) at a maximum distance from the worker access opening or other makeup air sources.

Place end of unit, or its exhaust duct, through an opening in the plastic barrier or wall covering. The plastic around the unit or duct shall then be sealed with tape.

(4) **Venting or Exhaust:** Unless authorized in writing by the Local Air Quality Management District, vent negative air exhaust to outside of building. Exhaust outlet shall be a minimum of ten feet above ground level.

(5) **Supplemental makeup air inlets:** Provide where required for proper air flow through the work space in location approved by the Project Coordinator by making openings in the plastic sheeting that allow air from outside the building into the work area.

(6) **Makeup Air Inlets:** Locate auxiliary makeup air inlets as far as possible from the exhaust unit(s) (e.g., on an opposite wall), off the floor, and away from barriers that separate the work area from occupied clean areas. Cover with flaps to reseal automatically if the negative pressure system should shut down for any reason. Spray flap and around opening with spray adhesive so that flap seals if it closes.

b. Use of the Negative Pressure System:

(1) **General:** Each unit shall be serviced by a dedicated minimum 115V-20A circuit with overload device tied into an existing building electrical panel that has sufficient spare capacity to accommodate the load of all negative pressure units connected. Dedication of an existing circuit may be accomplished by shutting down existing loads on the circuit.

(2) **Testing the System:** Test negative pressure system before any asbestos-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the exhaust unit(s)

installed, start the unit(s) (one at a time). Demonstrate operation and testing of negative pressure system to Project Coordinator.

(3) **System Evaluation:** A demonstration of the negative pressure system to the Project Coordinator will include, but not be limited to, the following:

- aa. Plastic barriers and sheeting move slightly in toward work area.
- bb. Curtain of decontamination units move slightly in toward work area.
- cc. There is a noticeable movement of air through the decontamination unit. Use smoke tube to demonstrate air movement from Clean Room to Shower Room, from Shower Room to Equipment Room, and from Equipment Room to Work Area.
- dd. Use smoke tubes to determine a positive motion of air across all area in which work is to be performed.
- ee. Use a differential pressure meter or manometer to demonstrate a pressure difference of at least 0.02 inches of water across every barrier separation the Work Area from the balance of the building or outside.
- ff. Modify the negative pressure system as necessary to successfully demonstrate the above.

D. Decontamination Facilities:

1. **General:** Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g. other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.
2. **Construction Review:** Build suitable decontamination facilities described herein, as previously submitted for review, before start of construction.
3. **Air Locks and Access Doorways:** In all cases access between contaminated and uncontaminated rooms or areas shall be through an air lock previously defined. Passage between any two rooms within the decontamination facility shall be through an access doorway.
4. **3-Stage Decontamination Enclosure:** Construct a worker decontamination enclosure system contiguous to the Work area consisting of three totally enclosed chambers to conform to standard Plans bound herein and as follows.
 - a. A shower room with two access doorways, one to the equipment room and one to the clean room. Plastic, if used, on shower room and adjoining equipment and clean rooms shall be opaque.

- b. The shower room shall contain at least one shower with hot and cold or warm water. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind.
 - c. Shower water shall be captured and filtered. The filtration system shall filter particulates to 3-microns. Filtered water may then be disposed of in the local sanitary/sewage system.
5. **Remote Decontamination Enclosures:** For remote decontamination systems (non-contiguous to the Work area) construction of the shower will conform to Section 2071, Part 3.1,D4, above with the following modifications:
 - a. The enclosure need not be attached to the Work area, but clean room and equipment rooms must be clearly marked at their respective entrances.
 - b. A HEPA filtration machine must be attached to the equipment room and must be operational while the decontamination unit is in use.
6. **Equipment Decontamination Enclosures:** For an equipment decontamination enclosure facility, construct two totally enclosed chambers as follows:
 - a. A washroom, constituting an air lock, with an access doorway to a designated area of the Work area and an access doorway to the holding area.
 - b. A holding area, constituting an air lock, with an access doorway to the washroom and an access doorway to an uncontaminated area.
7. **Entry/Exit systems:** All decontamination systems or entry/exit system air locks will be constructed using Z-flap design incorporating 2 layers of 6-mil plastic with the flaps extending the full height and width of the entrance space.

E. Maintenance of enclosure system:

1. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
2. Visually inspect enclosures at the beginning of each work period.
3. Use smoke methods to test effectiveness of barriers when directed by Owner or representative of Owner.

F. Asbestos removal work shall not commence until:

1. Arrangements have been made for disposal of waste at an acceptable site.
2. Work areas and decontamination facility and parts of the building required to remain in use are effectively segregated.
3. Tools, equipment, and material waste receptors are on hand.
4. Arrangements have been made for building security.

5. All other preparatory steps have been taken and applicable notices posted and permits obtained.
6. Removal work will not begin until the Owner's consultant authorizes work to commence, in writing.

3.2 ASBESTOS REMOVAL:

A. **General:** Prepare the site per paragraph 3.1.

B. **References:** Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g., other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.

C. **Negative pressure system during abatement Operations:**

1. Start exhaust units before beginning work (before any asbestos-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant negative pressure until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.
2. Start abatement work at a location farthest from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and exhaust units are in operation again.
3. At completion of abatement work, allow exhaust units to run to remove airborne dust that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination if dry or only partially wetted asbestos material was encountered during any abatement work.

D. **Contaminated Removable Objects:**

1. For re-installable fixtures: When scheduled to be removed per Plans and/or Section 01010HM, Scope of Work, remove and clean ceiling mounted objects, such as lights and other items not previously sealed off, that may interfere with asbestos removal. Use hand-held water spraying or HEPA vacuum equipment during fixture removal to reduce fiber dispersal. Decontaminate the objects, wrap in plastic and store for reinstallation upon completion of testing procedures.
2. When scheduled for removal per Plans and/or Section 01010HM, Scope of Work, remove carpeting, carpet backing, window curtains, etc., in sections of appropriate size for packaging and dispose of as contaminated waste.

E. **Contaminated Non-Removable Objects:**

1. If a ceiling tile/grid system remains within the Work area: Remove ceiling tiles and grid system within the Work area and dispose of as contaminated waste. If approved by the Owner's consultant or the Engineer/Architect, the grid system may be removed, decontaminated, sealed in plastic, and stored for reinstallation.

F. Amended Water Usage:

1. Spray asbestos material with amended water, using spray equipment capable of providing a "mist" application to reduce the release of fibers. Saturate the material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during work process to maintain wet condition and to minimize asbestos fiber dispersion.
2. Protect all fixtures, grills, lockers, and other non-removable equipment from amended water. Surfactants can cause oxidation. Also, protect painted surfaces and flooring.

G. Gross Removal:

1. Remove the saturated asbestos material in manageable sections. Materials shall not be allowed to dry out. Material drop shall not exceed 15 feet. For heights up to 50 feet provide inclined chutes or scaffolding to intercept drop. For heights exceeding 50 feet provide enclosed dustproof chutes.

H. Containerizing Waste:

1. **Daily containerizing:** During each day's work, the bulk asbestos material shall be bagged in 6-mil thick bags, before it dries. No asbestos material shall be allowed to lie on the floor overnight.
2. **Types of containers:** Place the material in either sealed containers (6-mil double bags or hard sealable containers).
3. **Vec-loaders:** The use of vacuum equipment may be employed to remove gross asbestos material from the Work area. Checking of the entire system, when in use, is required every 1/2 hour. When use of such equipment is practical, a safety program shall be established to control release of asbestos fibers from routine operations and/or accidents.
4. **Labels:** Place caution labels on containers in accordance with OSHA Regulation 29 CFR 1926.1101 and DOT 49 CFR 171-177 if not already preprinted on containers.
5. **Cleaning:** Clean external surfaces of containers thoroughly by wet sponging in the designated area. Move containers to washroom, wet clean each container thoroughly, and move to holding area pending removal to uncontaminated areas. If the holding area is outside containment it will be a locked and secured area with appropriate warning signage at entrance. If holding area is within containment ensure that area is secure and appropriate signage is maintained.

6. **Safety:** Ensure that containers are removed from the holding area by workers who have entered from uncontaminated areas dressed in clean coveralls.
- I. **Post Removal Cleaning:** After completion of stripping work, all surfaces from which asbestos has been removed shall be wet brushed and sponged or cleaned by an equivalent method to remove all visible material. During this work, the surfaces being cleaned shall be kept wet. At the Contractor's option, the layer of plastic exposed to the asbestos may be removed, leaving intact the final layer of plastic.
- J. **Safety:** Ensure that workers do not enter from uncontaminated areas into the washroom or the Work area; ensure that contaminated workers do not exit the Work area through the equipment decontamination enclosure system.

3.3 **CLEANUP AND AIR MONITORING:**

Employ the following procedures in cleaning up the Work area:

- A. **Pre-Cleaning:** Wet clean all surfaces and remove all visible accumulation of asbestos containing material from the Work area including the top layer of plastic if not previously removed. Prepare the Work area for the initial pre-TEM air test (if so specified) which will be performed after a visual inspection.
- B. **Pre-TEM Clearance:** Once the Work area is clean of visible accumulations of asbestos material, the Owner's consultant may perform a pre-TEM clearance test if so outlined in the Scope of Work (Section 01010HM). Such testing shall be within the limits of 0.02 f/cc using the NIOSH method 7400 (PCM). The Contractor will continue the wet cleaning process until the designated fiber level is achieved. It is the Owner's intent to pay for one Pre-TEM Series of air tests per area.
- C. **Encapsulation:** After successful completion of the Pre-TEM air test, if so designated, and visual inspection has been completed finding that no visible debris has been found and/or before the last layer of the plastic sheeting is removed, apply one coat of an asbestos encapsulant sealer following manufacturer's recommendations for application. The encapsulant sealer shall be compatible with any material to be reapplied to the surface.
- D. **Final Plastic Layer Removal:** While still under respirator protection, or other approved respirator usage, remove the final layer of plastic sheeting from the walls and floors after the sealant has dried. The seals on the windows, vents, doors, etc., shall remain, and HEPA filtration equipment and decontamination facilities shall also remain in service. Wet clean or HEPA vacuum work area underneath the plastic and leave the area visibly clean.
- E. **Settling Period:** Enter a 24-hour settling period or other period approved by the Consultant. Dust, both visible and invisible, shall be allowed to settle within the Work area without being disturbed during this period. The minimum settling period shall be 4 hours.

- F. **Final Cleaning:** After the settling period, wet clean or HEPA vacuum all surfaces within the Work area. Once this cleaning operation is complete, visually inspect the Work area to ensure that it is free of contamination.
- G. **Final Visual Inspection:** Owner's consultant will conduct a thorough visual inspection prior to setting air pumps. Upon successful completion of the visual inspection and Owner's consultant determination that all surfaces in the Work area are dry and free of contamination, the final air clearance test will be conducted. A certificate of Visual Inspection shall be issued by the Owner's Representative and shall be signed by both the contractor and the Owner's Representative. The Owner's Representative shall use the attached Form A.
- H. **Final Air Clearance:** For areas where material removal amounts of greater than 160 square feet or 260 lineal feet are performed, air clearance shall be performed per Section 2080. For areas where material removal amounts of \leq 160 square feet or 260 lineal feet are performed, air clearance will consist of five (5) TEM samples within the work area . The NIOSH method 7400 equivalent analysis will be used, as applicable, with a maximum fiber level of 0.01 f/cc being achieved prior to acceptance. In addition to the NIOSH method 7400 equivalent analysis, one of the five TEM sample cassettes shall be analyzed via TEM. TEM sample analysis must also pass as per requirements of Section 2080.
1. Aggressive sampling techniques will be used to reentrain any fibers on the walls or floors in each area to be tested. The Contractor shall provide 1 electric, 1 Hp "Leaf Blower" and 1 electric 20 inch box fan per 10,000 c.f. of air volume in the Work area for use by the Owner's consultant during the aggressive sampling. The Contractor shall also provide the necessary electrical supply for these units. All contractor supplied equipment shall be in good working order. After sampling, the leaf blower and fans shall be cleaned by the Contractor and handled as if contaminated with asbestos.
- I. **Clearance Failure Contingency:** Contractor shall continue cleaning the Work site until the accepted fiber level is achieved.
1. Additional TEM or equivalent testing required after the one initial TEM clearance test set will be the responsibility of the Contractor. Additional consultant's time required for additional visual inspection, clearance sampling, and associated delivery of samples shall be at the Contractor's expense. In the event of additional testing and associated consultants time, the Contractor may reimburse Owner, or reduce the Contract amount by change order. It is the Owner's intent to have, at no charge to the Contractor, one initial TEM test performed in each area. A test set may consist of one sample or a series of samples performed at the same time.
- J. **Dismantling the negative air system:** When a final inspection and the results of final wipe tests indicate that the area has been decontaminated, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

3.4 DISPOSAL OF ASBESTOS-CONTAINING MATERIALS AND ASBESTOS-CONTAMINATED WASTE:

A. Removal from Work area:

1. **General:** As the Work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labeled containers of asbestos waste and dispose of such containers at an authorized disposal site in accordance with the requirements of disposal authority.
2. **Double bagging or containerization:** Bags of asbestos materials removed from the Work area via the equipment decontamination enclosure shall be placed in a mechanically fastened drum or a second clean bag which is then transported in an enclosed vehicle. Appropriate labels shall be affixed to the outside of the container.
3. **Cleaning:** The drums or bags shall be cleaned in the equipment decontamination enclosure as previously described and placed in the transport vehicle. A fully enclosed plastic tunnel shall be provided when loading material contained in double plastic bags. The tunnel shall connect the equipment decontamination enclosure and the transport vehicle.
4. **Respiratory Protection:** Respiratory protection will be required in loading asbestos materials.
5. **On-site storage of waste:** On-site storage of waste will not be permitted for more than 5 working days after completion of last phase or nor more than 30 days per phase, whichever is less.
6. **Wastewater:** All wastewater shall be filtered through a five-micron filter prior to final disposal in a sanitary sewer. In the absence of a sanitary sewer system, the wastewater shall be drummed and transported to a landfill per the previous requirements for disposal.
7. **Other Waste:** Asbestos waste other than contaminated water shall be drummed or bagged and transported as previously described.

B. Transporting waste:

1. **Permits:** Local, state, and federal permits shall be obtained for the transportation of asbestos materials, and all procedures shall be followed as they pertain to transportation of asbestos materials.
2. **Notification of Transport:** Notify the Owner's consultant **48 hours in advance** of the time when contaminated materials are to be removed from the site.
3. **Transport Vehicle:** Transport vehicle shall be lined with 6-mil plastic prior to loading asbestos waste. The vehicle shall be used for the sole purpose of transporting asbestos waste. No other contract materials or supplies shall be stored or transported in the vehicle unless it has been decontaminated.
4. **Documentation:** Activities involving removal of waste, loading onto vehicle, and disposal at the landfill, shall be documented in daily reports. A second document, landfill manifest, shall be completed when material is disposed at landfill. Both

documents shall indicate date and volume of material handled. A bill of lading shall be submitted as per DOT regulations.

- a. It shall be the responsibility of the Contractor to notify the Owner or Owner's Consultant and coordinated having the Hazardous Waste Manifest or Non-Hazardous Waste Manifest properly signed by Owner or Owner's representative. Contractor shall give the Owner or Owner's Representative or Consultant 48 hours notice prior to request for signature and waste pick-up.
- b. Contractor SHALL NOT sign any Hazardous Waste Manifest for the Owner.

5. **Respiratory Protection:** Respiratory protection will be required in unloading asbestos materials.

6. **Safety:** Contractor shall be responsible for safe handling and transportation of hazardous waste generated by this Contract to the designated Hazardous Waste Site.

C. **Hazardous Materials Spills:** Contractor shall hold the Owner and Owner's consultant harmless for claims, damages, losses, and expenses, including attorney's fees arising out of or resulting from, asbestos spills on the site or spills enroute to the disposal site.

3.5 **RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS:**

A. **Relocation of Moveable Objects:** Relocate objects moved to temporary locations in the course of the Work to their proper positions. Only clean objects are to be moved into the areas.

B. **Remounting Objects:** Remount objects removed in the course of the Work in their former positions. Repair any moveable or fixed objects damaged during the course of the Work.

C. **Systems re-establishment:** Reestablish HVAC, mechanical, and electrical systems in proper working order.

1. Install new HVAC filters and dispose of used filters as contaminated waste.

D. **Building repair/repaint:** Repair any damage to building, or building systems (electrical, mechanical, plumbing, etc.) which was not noted in writing prior to work area preparation.

1. Repaint any areas damaged during the course of the Work unless this work is scheduled to be repaired by others. See paragraph 1.2.C, Related Work Specified Elsewhere, of this section. Quality of paint and workmanship shall be consistent with that found within the building prior to this Project, unless otherwise stated. Refer to Section 09900 Painting.

END OF SECTION

SECTION 02074AHM
ASBESTOS REMOVAL
ROOFING PENETRATION AND SEAM SEALANT MATERIAL

PART 1 - GENERAL

1.1 SCOPE:

- A. This Specification covers the removal and disposal of asbestos-containing roofing penetration and seam sealant materials in the locations identified in Section 01010HM, Summary of the Work.

1.2 DESCRIPTION OF WORK:

- A. **General:** The Work specified herein shall be the removal of asbestos-containing and/or contaminated material by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing and/or contaminated material, the subsequent cleaning of the affected environment, and who comply with all Federal, State, and local laws and regulations which mandate work practices, and who are capable of performing the Work in these Specifications.

- B. **Contract Fulfillment:** The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the Work in accordance with all applicable governmental regulations and these Specifications.

- C. **Related Work Specified Elsewhere:**

Section 02071HM, Asbestos Removal.

1.3 TERMINOLOGY:

The terms used in these Specifications are defined in Section 02071HM.

1.4 APPLICABLE DOCUMENTS:

See Section 02071HM for Applicable Documents.

1.5 **SUBMITTALS AND NOTICES:**

Section 02071HM, Part 1.5, Submittals and Notices, shall be modified in the following particulars only.

- A. The use of RB roof cutters on roofing projects involving more than 5,580 square feet require NESHAP notification.

1.6 **PERSONAL PROTECTION AND SAFETY:**

A. **Respiratory protection requirements:**

1. Respiratory protection for removal of asbestos-containing and/or contaminated roofing materials; **1/2 face negative pressure** are required as a minimum.
2. If powered air-purified respirators (PAPR) respirators are required, the respiratory requirements as set forth in Section 02071HM shall govern.
3. Provide authorized visitors with suitable respirators whenever they are required to enter the Work area.
4. If any roofing materials are deemed to be friable to such an extent as the tar matrix loses its binding properties by crumbling using thumb and forefinger pressure, then the following apply:
 - a. While pre-cleaning the Work area, prepping the Work area, loading the asbestos material in the transport vehicle and unloading the transport vehicle at the landfill all activities must be performed while wearing a 1/2 face negative pressure respirator.
 - b. The friability of the materials shall be at the sole discretion of the Owner's consultant, either during the bid walk or prior to abatement.

- B. **Posting of Procedures:** Provide and post, at the Work area, the decontamination and work procedures to be followed by workers and authorized visitors as described in these Specifications.

C. **Worker protection procedures:**

1. The Contractor shall provide adequate shower facilities. An employee leaving the Work area shall follow all decontamination procedures necessary or as described herein.
2. All workers and authorized visitors shall, don 2 sets of protective suits prior to entering the work area.

3. All workers and authorized visitors shall, each time they leave the Work area; remove gross contamination from protective clothing, HEPA vacuum clothing, and remove the outer protective suit and place within a waste bag located within the work area. All workers and authorized visitors shall then don a second disposable suit over the first, before leaving the Work area. Each person will then proceed immediately to the shower room and remove the disposable suits and place in a waste bag. After wet wiping all exposed body and equipment surfaces, workers and/or visitors may then proceed through the exit to the uncontaminated area.
4. Workers loading waste containers from the Work area, which are not directly placed in the waste bin or enclosure, shall wear a respirator and be dressed in clean disposable coveralls.

D. Equipment removal procedures:

1. Clean surfaces of contaminated containers and equipment thoroughly by wet sponging or wiping before moving such items from the Work area and to uncontaminated areas.
2. If gross material cannot be removed from the working end of the equipment (area coming in direct contact with asbestos-containing material), it shall be wrapped in a 6-mil plastic bag, or other suitable 6-mil plastic medium, and sealed with tape prior to leaving the Work area.

1.7 SUPERINTENDENT FOREMAN CRAFTSMAN:

The Contractor shall have a job superintendent (and/or Competent person) present at all times while work on this Contract is in progress.

The Project Superintendent (and/or Competent person) shall be thoroughly familiar and experienced with asbestos removal and related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all EPA, OSHA, and NIOSH requirements and guidelines.

In addition to the Superintendent (an/or Competent person), the Contractor shall furnish one or more foremen who are familiar and experienced with asbestos removal and its related work, safety procedures, and equipment. If the Superintendent is not present then the foremen shall be a Competent person.

- A. It shall be a requirement of this Contract that the superintendent and/or one or more of the Contractor's foremen be inside the Work area at all times while work is in progress.
- B. It is the intent of these Specifications that all phases of the Work shall be executed by skilled craftsmen experienced or receiving training by on-site experienced personnel in each respective trade.
- C. The Competent person on-site must be able to clearly communicate in a manner so that the Owner's Consultant and Owner can clearly understand.

PART 2 - MATERIAL AND EQUIPMENT

2.1 MATERIALS:

See Section 02071HM, Part 2.1 for Materials.

2.2 TOOLS AND EQUIPMENT:

Provide suitable tools for the work at hand.

PART 3 - EXECUTION

3.1 PREPARATION:

A. Separation of work areas from occupied areas:

1. Separate parts of the building required to remain in use from parts of the building that will undergo asbestos removal by means of barriers, constructed as follows:
 - a. Isolate the area in which removal will take place by placing barrier tape at least 25 feet from the work. If applicable, lock from external entry all but one entrance to the Work area.
 - b. Place asbestos warning signs at the barrier and at all open entrances to Work area. Signs must be placed conspicuously and must be easily read. Signs must conform to legal size and wording.
2. Shut down electric power. Provide temporary power and lighting and ensure safe installation of temporary power sources (if required) and equipment per applicable electrical code requirements.
3. Shut down and isolate heating, ventilating, and air cooling (HVAC) systems to prevent contamination and fiber dispersal to other areas of the structure. Isolate all supply intake ducting from Work area by installing 2 layers of 6-mil polyethylene over the intake using 6 inches of duct tape to affix polyethylene to intake housing.

B. Pre-clean work area:

1. Where ACM penetration/seam sealant material is in poor friable condition, clean all moveable objects within the Work area using HEPA vacuum equipment and/or wet cleaning methods as appropriate. In all cases, remove removable objects from the Work area to a designated temporary storage location. Protection of and accounting for the stored materials is the sole responsibility of the Contractor.
2. Where ACM material is in poor friable condition, pre-clean fixed objects within the proposed work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate and, in all cases, cover with minimum of 6-mil polyethylene.

C. Prepare work area:

1. Erect asbestos hazard tape barriers and post the work area to restrict access by unauthorized persons within 25 feet of this area.
2. Place a single layer of 6-mil poly on the ground surface to extend 10 feet beyond the materials extent.
3. Maintain emergency and fire exits from the Work areas, or establish alternative exits satisfactory to fire officials.
4. If a remote decontamination unit is constructed, establish 'Do Not Enter' caution tape barriers extending 10 feet beyond and surrounding the decontamination facility.
5. Roof level heating and ventilation air intake sources shall be isolated by polyethylene wrapping and the ventilation system shut down, or if systems cannot be shut down, devise a sealed system allowing intake air to be derived at a minimum of 15 feet beyond the work area.

D. Decontamination enclosure systems:

1. The decontamination enclosure facility will be constructed of two totally enclosed chambers as follows:
 - a. An equipment room, constituting an air lock, with an access doorway to a designated area of the Work area and an access doorway to the shower area.
 - b. A washroom, constituting an air lock, with an access doorway to the equipment room and an access doorway to an uncontaminated area.
 - c. All floors of the decontamination chamber will be covered with 2 layers of 6-mil plastic. Flooring plastic will extend up 12 inches along the decontamination walls. Flooring will be seamless in its application.
2. All decontamination systems or entry/exit system air locks will be constructed using Z-flap design incorporating 2 layers of 6-mil plastic with the flaps extending the full height and width of the entrance space.
3. Ensure that a water source within the shower room is available for wet wiping of all exposed extremities and respirator prior to exiting the decontamination facility. All protective gear will be removed and be disposed of in the equipment room prior to entering the shower room.

E. Maintenance of Decontamination Enclosure System and Work Area Barrier:

1. Ensure that barriers are maintained and intact at all times. Repair damaged barriers and remedy defects immediately upon discovery.
2. Visually inspect enclosures and barriers at the beginning of each work period.

F. Asbestos removal work shall not commence until:

1. Arrangements have been made for disposal of waste at an acceptable site.
2. Work areas and decontamination systems and parts of the building required to remain in use are effectively segregated.
3. Tools, equipment, and material waste receptors are on hand.
4. Arrangements have been made for building security.
5. All other preparatory steps have been taken and applicable notices posted and permits obtained.
6. Removal work will not begin until the Engineer authorizes work to commence, in writing.

3.2 ASBESTOS REMOVAL – ROOFING PENETRATION/SEAM SEALANT MATERIAL:

A. **General:** The Contractor shall remove all sealant material to the base material or structure or that specified in Section 01010HM, and any loose debris shall be HEPA vacuumed.

B. Removal Methods:

1. Some areas may require intact removal, as outlined in the Scope of Work, and sealant applied component shall be removed with all traces of attached sealant material.
2. Where substrate material remains intact, all sealant shall be removed and a mastic remover shall be used on the substrate surfaces cleaning to a non-three (3) dimensional state.
3. Wet methods shall be used where feasible.
4. Cutting machines shall be continuously misted during use. All engine-powered rotating blade (RB) roof cutters with one or more rotating cutting blades (the edges of which are blunt as opposed to sharp or tapered edges) shall be equipped with a blade guard that completely encloses the blade and extends down close to the roof surface and a device for spraying a fine mist of water inside the blade guard in operation during the cutting of the roof.

5. The use of equipment with blades having sharp or tapered edges used for “slicing” rather than “cutting”, or other methods that do not sand, grind, cut, or abrade the roofing material do not require NESHAP notification regardless of the size of the roof being removed.

C. Transfer of Waste to Bin:

1. All removed non-friable sealant materials shall be expeditiously placed in 6-mil non-hazardous waste bags and shall be immediately lowered to the ground or placed directly into a disposal bin via polyethylene covered, dust-tight chute, crane or hoist, or placed in an impermeable waste bag or wrapped in polyethylene sheeting and lowered to the ground no later than the end of the work shift.
2. If possible, bagged roofing material shall be lowered to the ground directly into a disposal bin. If material must first be lowered to the ground, a 10 foot by 10 foot layer of 6-mil plastic will be set directly below the lowered material. The material will then be either carried or hauled to the disposal bin without touching the ground.
3. If a dust tight chute is used, 6-mil polyethylene will be placed from the base of the disposal bin to a distance of 8 feet beyond the perimeter of said bin. A dust cover of 6-mil polyethylene will be attached from the chute mouth to fully extend over the edges of the disposal bin at any time during its use in order to maintain a ‘closed’ system between the dust chute and the container bin.
4. Contractor shall make every effort to ensure that no over-spill occurs while loading the container bin through the use of a dust-tight chute. If over-spill occurs contractor shall immediately bag and clean the debris from the polyed area.
5. Unwrapped material shall be lowered to the ground unless contained within a dust tight apparatus and into a closed receptacle.
6. Dry sweeping or brushing during removal or clean-up is strictly prohibited. Contractor shall use a HEPA vacuum in lieu of sweeping.

3.3 CLEANUP AND AIR MONITORING:

A. Air Monitoring:

1. If, during removal, visible dust is present, the Contractor shall modify his or her work practices to reduce emissions and provide workers with powered air-purifying respirator protection.

B. Clean-Up:

1. Wet clean all surfaces and remove all visible accumulation of asbestos containing material from the Work area.
2. Where a waste bin is employed, waste within the disposal bin must be covered at all times. At the end of the shift, if waste remains on site, waste must be within a

hard-sided container and covered with 2 layers of 6-mil plastic and securely fastened to the container. During temporary storage, barrier tape must be placed around the perimeter of the bin.

3.4 DISPOSAL OF ASBESTOS-CONTAINING MATERIALS AND ASBESTOS-CONTAMINATED WASTE:

Section 02071HM, Part 3.4, Asbestos-Containing Materials and Asbestos-Contaminated Waste, shall be modified in the following particulars only.

A. Asbestos Materials:

1. All materials shall be disposed of as non-hazardous asbestos containing materials.

3.5 REESTABLISHMENT OF OBJECTS AND SYSTEMS:

See Section 02071HM, Part 3.5 for Reestablishment of Objects and Systems.

END OF SECTION

SECTION 02092HM

LBP, LEAD CONTAINING MATERIALS REMOVAL (Abrasive, Ceramic Tile)

PART 1 - GENERAL

1.1 **SCOPE:**

This Specification covers the abatement of materials containing lead-based paint as described in Section 01010HM, Scope of Work.

1.2 **DESCRIPTION OF WORK:**

- A. **General:** The Work specified herein shall be the removal of lead-containing materials and lead dust environments by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of lead-based paint and lead containing materials, and the subsequent cleaning of the affected environment, and who comply with Federal, State, and Local regulations and guidelines which mandate work practices, and who are capable of performing the Work of this Contract.
- B. **Contract Fulfillment:** The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the Work in accordance with applicable governmental regulations and guidelines and these Specifications.

1.3 **TERMINOLOGY:**

The following terms used in these Specifications are defined as listed below:

- A. **Abatement:** Any measure designed to permanently eliminate lead-based paint hazards in accordance with standard established by EPA Administrator pursuant to Title IV of the Toxic Substances Control Act (TSCA).
- B. **Abatement Area:** The exterior of the building or an area isolated from the building interior by containment.
- C. **Accessible Surface:** Any surface, which is below 5 feet in height from the floor or ground or is exposed in such a way that a child could come in contact with the surface.
- D. **Access Doorway:** A device to allow ingress and egress from one room or area to another while permitting minimal air movement between the rooms, typically constructed by placing two or three overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway; or by using a rigid gasketed door and HEPA filter vents.

- E. **Action Level:** An exposure of airborne concentrations of lead dust particulates in excess of thirty micrograms per cubic meter ($30 \mu\text{g}/\text{m}^3$) of air calculated as an 8 hour time weighted average (TWA).
- F. **Air Filtration Equipment:** A portable local filtration system equipped with HEPA filtration and capable of maintaining a constant, low velocity flow to filter and trap contamination out of the air within the work area and then circulate or exhaust the filtered air to uncontaminated areas. This equipment is also used to establish a reduced pressure within the work area.
- G. **Air Monitoring:** The process of measuring the lead content of a specific volume of air in a stated period of time.
- H. **Air Sampling Professional:** The professional contracted or employed to supervise air monitoring and analysis schemes. This individual is also responsible for recognition of technical deficiencies in Worker protection equipment and procedures during both planning and on-site phases of an abatement project. This individual shall be certified in the comprehensive practice of air sampling for lead by Department of Health Services (DHS) as a Lead Project Monitor or Lead Supervisor.
- I. **Air Lock:** A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, consisting of dual or triple curtained doorways or rigid gasketed doors separated by a dead air space of four feet.
- J. **Authorized Person or Visitor:** The building owners, his or her authorized representative, or any representative of a regulatory or other agency having jurisdiction over the Project.
- K. **Biological Monitoring:** The analysis of a person's blood to determine the level of lead contamination in the body. Biological monitoring for lead hazard reduction work includes blood sampling and analysis for lead and zinc protoporphyrin levels.
- L. **Certified Industrial Hygienist:** A person certified by American Board of Industrial Hygienist and who has at least four years experience and a graduate degree or five years experience; and who has passed a two-day examination offered by the board (see also industrial hygienist).
- M. **Clean Room:** An uncontaminated area or room which is a part of the Work decontamination facility with provisions for storage of worker's street clothes and protective equipment.
- N. **Clearance Testing:** Post abatement procedure as required by DHS. A clearance inspection must be conducted after abatement is completed. Only a DHS certified lead inspector/assessor or a Project Monitor may conduct a clearance inspection.
- O. **Code Enforcement Agency:** The State Lead Poisoning Prevention Program or its agent, or the local board of health or other agency responsible for enforcing the State Sanitary Code or Sections thereof.

- P. **Commissioner:** The commissioner of Public Health.
- Q. **Common Area:** A room or area that is accessible to more than one tenant in a building (e.g., common hallways, stairwells, laundry rooms).
- R. **Containment:** A process for protecting other workers, residents, and the environment by isolating areas from exposures to lead dust and debris created during abatement in a work area.
- S. **Curtained Doorway:** A device to allow ingress and egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway (referred to as Z-fold design).
- T. **Decontamination Facility:** A series of connected rooms, with curtained doorways between any two adjacent rooms for the decontamination of workers and of materials and equipment. A decontamination enclosure system always contains at least one airlock.
- U. **Defective surface:** Peeling, flaking, chalking, scaling, or chipping paint; or, paint over crumbling, cracking, or falling plaster, or plaster with holes in it; paint over a defective or deteriorating substrate; paint that is separating from the substrate; and paint that is damaged in any manner such that a child could be exposed to the paint from the damaged area.
- V. **Employee:** Any person employed or hired by an employer in any lawful employment.
- W. **Employer:** Any person, firm, corporation, partnership, association, or other entity engaged in a business or providing services, including the State and any of its political subdivisions, or any person acting in the direct interest of any of the foregoing in relation to any employee or place of employment.
- X. **Encapsulant (sealant):** A liquid material which can be applied to lead containing material and which controls the possible release of lead from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).
- Y. **Encapsulation:** Procedures necessary to apply an encapsulant to lead containing building materials to control the possible release of lead dust particulates or entrained material into the ambient air.
- Z. **Enclosure:** Procedures necessary to enclose completely lead containing material behind airtight, impermeable, permanent barriers.
- AA. **Entity:** Any person, partnership, firm, association, corporation, sole proprietorship, or any other business concern, state or local government agency or political subdivision or authority thereof, or any religious, social, or union organization, whether operated for profit or otherwise.

- BB. **Equipment Room:** A contaminated area or room, which is part of the Worker decontamination enclosure with provisions for storage of contaminated clothing and equipment.
- CC. **Equipment Decontamination Facility:** That portion of a decontamination facility designed for controlled transfer of materials and equipment, typically consisting of a washroom and a holding area.
- DD. **Equipment Room:** A contaminated area or room which is part of the worker decontamination facility with provisions for storage of contaminated clothing and equipment.
- EE. **Fixed Object:** A unit of equipment or furniture in the Work area which cannot be removed from the Work area.
- FF. **General Trades Contractor:** Shall refer to the contractor responsible for coordination of all filed sub-bids and general construction.
- GG. **Hazardous Level of Lead for Waste Disposal:** 5.0 parts per million (ppm) as defined by RCRA Toxicity Characteristic Leachate Procedure (TLCP) or other requirements set by local or state authorities.
- HH. **High Phosphate Detergent:** Detergent that contains at least five percent (5%) tri-sodium phosphate (TSP) or other equally effective cleaning agent.
- II. **HEPA Filter:** A high efficiency particulate air (HEPA) filter capable of trapping and retaining 99.97 percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- JJ. **HEPA Vacuum Equipment:** Vacuuming equipment with a HEPA filter system.
- KK. **Holding Area:** A chamber in the equipment decontamination facility located between the washroom and an uncontaminated area. The holding area comprises an airlock.
- LL. **Intact Surface:** A defect-free surface with no loose, peeling, chipping, or flaking paint. Painted surfaces must be free from crumbling, cracking, falling plaster, and must not have holes in them. Intact surfaces are not damaged in any way.
- MM. **Log Book:** A notebook or other book containing essential project data and daily project information and a daily project diary. This book is kept on the Project site at all times.
- NN. **Lead-based:** Refers to paints, glazes, and other surface coverings containing a toxic level of lead.
- OO. **Lead-Containing:** Refers to Paints, glazes, and other surface covering containing a detectable level of lead.

- PP. **Mini-Enclosure:** A method with limited applications for removing small amounts of lead-based paint material typical for small-scale, short duration type projects.
- QQ. **Movable Object:** A unit of equipment or furniture in the Work area that can be removed from the Work area.
- RR. **Negative Air Pressure Equipment:** A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated areas from adjacent uncontaminated areas.
- SS. **Paint Removal:** All herein specified procedures necessary to remove or strip lead-based paint from the surfaces of components and to dispose of these materials at an acceptable site. Removal may consist of off-site or on-site paint removal as specified.
- TT. **Permissible Exposure Limit:** An airborne lead concentration of fifty micrograms per cubic meter of air ($50 \mu\text{g}/\text{m}^3$) or greater, averaged over an 8 hour period.
- UU. **Personal Monitoring:** Sampling of lead fiber concentrations within the breathing zone of a lead Worker.
- VV. **Plasticize:** To cover floor and walls with plastic sheeting as herein specified.
- WW. **Qualified Abatement Subcontractor:** A sub-contractor capable of providing a properly trained and equipped work force for abatement work. All employees to perform abatement activities shall have successfully completed a minimum of 24 hours of training in the potential hazards of abating lead-based paint. Abatement contractors must possess the appropriate license or certification from the state or local government.
- XX. **Removal:** A strategy of abatement, which entails the removal of components, such as windows, doors, and trim that contain toxic levels of lead such that new components that are lead free may be installed.
- YY. **Replacement:** A method of abatement that involves removing components that have lead-based paint surfaces and installing new components free of lead-based paint.
- ZZ. **Shower Room:** A room or area in the worker decontamination unit facility with hot and cold or warm running water and suitably arranged for complete showering during decontamination. An alternate site away from the decontamination facility may be used as approved by the Owner's consultant.
- AAA. **Subcontractor:** Shall refer to the Abatement Contractor.
- BBB. **Surfactant:** A chemical wetting agent added to water to improve penetration.
- CCC. **Toxic Characteristic Leachate Procedure (TCLP):** EPA required sample preparation for determine the hazard characteristic of a waste generated at a lead abatement site.
- DDD. **Toxic Level of Lead in Surface Coatings:** 1.0 milligrams or more per square centimeter (mg/cm^2) ($0.7 \text{ mg}/\text{cm}^2$ in Los Angeles County) by XRF methods or 5,000

µg/g (0.5%) by laboratory testing, as defined in HUD Regulation and Lead-Base Paint Poisoning Prevention Act.

- EEE. **Washroom:** An area between the Work area and the holding area in the equipment decontamination area.
- FFF. **Wet Cleaning:** The process of eliminating lead-based paint contamination from building surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with water, and by afterwards disposing of these cleaning tools as lead contaminated waste.
- GGG. **Wet Wall:** Shall refer to walls which contain plumbing fixtures and/or pipes, including both supply and sanitary lines.
- HHH. **Wipe Sampling:** The process of collecting and analyzing lead material from a specific surface area to determine residual lead levels.
- III. **Work Area:** Designated rooms, spaces, or areas of the Project in which lead-based paint abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area that has been sealed, plasticized, and equipped with a decontamination enclosure system. A non-contained work area is an isolated or controlled-access work area that has not been plasticized nor equipped with a decontamination enclosure system.
- JJJ. **Worker Decontamination Facility:** That portion of a decontamination facility designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

1.4 **APPLICABLE DOCUMENTS:**

The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements shall apply.

- A. **Regulations:** Comply with all codes, regulations, and references applicable to lead abatement work include but are not limited to the following:
 - 1. All Federal, State, Local, and South Coast Air Quality Management District regulations.
 - 2. American National Standards Institute (ANSI) publications;
 - Z9.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems
 - Z87.1-79 Occupational and Educational Eye and Face Protection
 - Z88.2-80 Practices for Respiratory Protection
 - Z89.1-81 Requirements for Protective Headgear for Industrial Workers

- Z41-83 Personal Protection - Protective Footwear
- Z88.6-84 Respiratory Protection Respiratory use Physical Qualifications
for Personnel
3. American Society for Testing and Materials (ASTM) publications;
- D1 331-56 Surface and Interfacial Tensions of Solutions of Surface Active
Agents.
4. Code of Federal Regulations (CFR);
- 29 CFR 1910 General Industry Standard
- 29 CFR 1910.1025 Lead Standard for General Industry
- 29 CFR 1910.134 Respiratory Protection
- 29 CFR 1910.1200 Hazard Communication
- 29 CFR 1910.245 Specifications for Accident Prevention (Signs and
Tags)
- 29 CFR 1926 Construction Industry Standards
- 29 CFR 1926.62 Construction Industry Lead Standard
5. Code of Federal Regulations (CFR) (cont'd);
- 40 CFR Part 261 United States Environmental Protection Agency
Regulations
- 40 CFR Part 745 Residential Property Renovation
- 24 CFR Parts 35-37 HUD Lead-Based Paint Regulations.
6. Compressed Gas Association, Inc.
- G-7.1 Commodity Specification for Air
7. National Fire Protection Association (NFPA)
- No. 70. National Electrical Code
8. UL 586-77 (R1 982) Test Performance of High Efficiency Particulate Air Filter
Units (June 10, 1977, 5th Ed.; Rev. March 12, 1982)
9. National Institute for Occupation Safety and Health (NIOSH)
- N31, 3rd. Ed., Vol. 1, Manual of Analytical Methods, Method 7082.

10. Environmental Protection Agency Documents:

EPA 530-SW-85-007	Lead Waste Management Guidance, May 1985
EPA 560/5-85-024	Guidance for Controlling Lead-Base Paint in Buildings, June 1985
EPA 600/4-85-049	Measuring Airborne Lead Following and Abatement Action, November 1985
EPA 560 OPTS-86.001	A Guide to Respiratory Protection for the Lead Abatement Industry, April 1986

11. California Administrative Code (CAQ):

- Title 8, Article 2.5, Sections 341.6 - 341.14, Registration Lead-Related work
- Title 8, Section 5216, General Industry Safety Orders, Lead Regulations
- Title 8, Section 1532.1, Cal/OSHA Construction Safety Orders, Lead
- Title 8, Section 3203, Cal/OSHA Injury and Illness Prevention Program
- Title 17, Division 1, Chapter 8, Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards

12. California Administrative Code (CAQ) (cont'd):

- Title 22, Division 4, Minimum Standards for Management of Chapter 30 Hazardous and Extremely Hazardous Waste

13. South Coast Air Quality Management District Regulations

- Rule 1420, Emissions Standard for Lead

14. Los Angeles County Code

- Title 11, Health and Safety, Chapter 11.28, Lead Hazards
- Title 12, Environmental Protection

1.5 SUBMITTALS AND NOTICES:

Prior to commencement of work and/or within the time-frames specified below:

- A. **General:** Requirements are as set forth in the General Conditions and Supplementary Conditions for items required to be submitted under this section.

- B. **Product data:** Shall include manufacturer's product data, specifications, samples and application instructions and other pertinent information as necessary.
- C. **Alternatives:** Product substitution submittal shall be in accordance with the General Conditions and Supplementary Conditions.
- D. **Procedure Plans and Shop Drawings:** Submit to the Owner's consultant Procedure Plans and Shop Drawings and ensure that they are in compliance with this Specification and applicable regulations. Shop Drawings will include: construction of decontamination enclosure systems and/or facilities; isolation of the Work areas; placement of negative air machines and their exhaust, emergency exits, and placements of fire extinguishers and first aid kits.
1. Personnel monitoring procedures in accordance with T8 CCR 1532.1
 2. Phasing of abatement work indicating daily roster of workers for each phase.
 3. Security system warning signs locations in accordance with 29 CFR 1910.245, and T8 CCR 1532.1.
 4. Detailed plans for decontamination facilities, toilets, and systems providing inter-room and work area to outside communication showing connections to existing building.
 5. Standard procedures for protecting workers, visitors, and employees and protection of spaces outside work area from contamination.
 6. Engineering systems exposure control indicating number, location, and capacity of supply and exhaust systems, the expected direction of flow, and the range of expected negative air pressure in each area.
- E. **Qualifications:** Within 10 days from Notice to Proceed, submit the following documents:
1. **License:** Submit copy of current contractor license from the California Contractors State License Board.
 2. **Personnel Training-Superintendent and Foreman:** Submit copy of certificates of completion from a training course in lead abatement project supervision offered by a California accredited educational institution, and a copy of certification from California Department of Public Health (CDPH) as a lead supervisor. Copies of these documents shall be maintained in the Project Logbook. Substitutions may be made by written notice to Owner's consultant.
 3. **Personnel Training-Workers:** Submit copy of certificates of completion from a training course in lead abatement project supervision offered by a California accredited educational institution, and a copy of certification from California Department of Public Health (CDPH) as a lead worker. Copies of these documents shall be maintained in the Project Logbook. Substitutions may be made by written notice to Owner's consultant.

4. **Personal Protection and Exposure Understanding:** Submit documentation to the Owner's consultant indicating that each employee has had instruction on the hazards of lead exposure, on use and fitting of respirator, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures and understands this instruction.
5. **Respirators:** Submit a written standard operating procedure governing selection, fit-testing, and use of respirators in accordance with 29 CFR 1910, Subpart 1, 29 CFR 1926.1101, CGAI Standard G7.1, ANSI Z88.2, and Z88.6. Also submit manufacturer's certification that the respirators to be used in this project comply with these regulatory requirements.
6. **Medical Examination:** Submit proof that personnel who will be entering contaminated areas have had medical examinations, and furnish the results of said exam to Owner's consultant. Comply with 29 CFR 1910.20 for access to employee exposure and medical records.
 - a. **Exam and History:** Before exposure to lead, provide each employee with a comprehensive medical exam meeting the general definition outlined in California Administration Code Title 8, CCR. No employee shall be allowed to enter the Work Area without having first provided a copy of his or her Medical History to the Owner's Representative.
 - b. **Employee Roster:** Submit an employee roster to Owner's consultant for each Work shift and confirm in writing within 24 hours of commencement of shift. The roster will consist of a list of employees who have received training and medical examinations per paragraphs Part 1.5, E.2, E.3, E.5, and E.6 of this section. A copy of this list is to be maintained in the Project Logbook.

F. Notifications, Permits, Communications and Postings.

1. **Submit copies of notifications to all appropriate Government agencies, including the following:**
 - a. CAL-OSHA (310) 949-7827 Notification shall be in accordance with the Section 341.9 of Title 8 of California Administrative Code.
 - b. California Department of Public Health, Childhood Lead Poisoning Prevention Branch (if applicable - 5 days prior to work).
 - c. Copies of Government agency correspondence shall be included in the submittals.
 - d. Where local police and fire departments have jurisdiction, secure approval of the proposed security and safety plans for the work prior to submittal to Owner's Representative. Contact both departments for the requirements of the approval process.
2. **Proof of Permits, Site Requirements, and Disposal of Waste:** Submit proof satisfactory to the Owner's consultant that all required testing, permits, site

location, and arrangements for transport and disposal of lead-coated or contaminated materials, supplies, and the like have been obtained.

3. **Safety Compliance:** In addition to detailed requirements of this Specification, comply with laws, ordinances, rules, and regulations of federal, state, regional, local authorities, and of Owners regarding handling, storing, transporting, and disposing of lead waste materials. Comply with applicable requirements of the current issue of 29 CFR 1910. 29 CFR 1926.62, and 40 CFR 261, 40 CFR. Parts 35, 36, 37, and CAC Section 5208. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting Work. Where requirements of this Specification and reference documents vary, the most stringent requirement shall apply.
4. **Availability of Regulatory References:** Contractor shall have at least one copy each of 29 CFR 1910; 29 CFR 1910.134; 29 CFR 1926; 40 CFR Part 261; and CAC, Title 8, Section 5208, at his or her office and also at the job site.
5. **Posting of Caution Signs:** Before the commencement of any Work at the site, post bilingual EPA and CAL-OSHA caution signs in and around the Work Area to comply with EPA and OSHA regulations.
6. **Submit Training and Certifications:** All lead workers assigned to this project must be accredited as a Lead Worker under the California Department of Public Health (CDPH). At least one employee on each shift shall be currently accredited as a Supervisor and shall have successfully completed in the last 12 months a course of instruction meeting the requirement for "Competent Person." At least one employee on each shift shall be currently accredited in accordance to the Environmental Protection Agency's (EPA) Renovation, Repair, and Painting (RRP) regulation. In addition, Hazardous Material Contractor must also be certified as a firm in accordance with the EPA's RRP regulation
7. **Project Logbook Submittals:** Submit front-end documents of Project Logbook. These documents will include copies of the Contractor's Respiratory Protection Program, HUD and OSHA documents, worker decontamination procedures, equipment decontamination procedures, authorized personnel list, format of daily report sheets, test reports on waste materials, and format of waste manifests. The completed daily reports and waste manifests shall be submitted along with pay requests for completed work. Copies of these front-end documents shall be maintained at the site during the lead removal phase of the Project.
 - a. The Superintendent is required to keep the Project Logbook up to date, ensure that all work criteria is followed in the proper sequence, and to fill out the enclosed check list to document the progression of the job. A separate checklist will be required for each individually prepped work area.
8. **Property Condition Assessment:** Owner, Architect/Engineer or Owner's consultant, and Contractor must agree in writing on building and fixture condition prior to commencement of Work. The Contractor shall submit an inventory of all items removed from the Work area and an inventory of all items remaining in the Work area.

9. **Informing Other Trades:** The lead abatement contractor must inform other employers on site of the nature of the Contractor's work with lead-based paint and the existence of and requirements pertaining to regulated areas. Such notification shall be coordinated with, and approved by, the Owner.
10. **Pressure Strip Recordings:** At the termination of the project, submit copies of all pressure strip chart recordings.

G. Field Air Sampling:

Personal monitoring and other monitoring which is required by law or considered necessary by the Contractor for Worker protection shall be the responsibility of the Contractor and performed by Contractor's Air Sampling Professional.

H. Certifications:

1. **Equipment Certification:** Submit manufacturer's certification that vacuums, negative air pressure equipment filters, and other local exhaust ventilation equipment conform to ANSI Z9.2, as well as all Federal, State, Local, and SCAQMD regulations (permit to construct).
2. **Rental Equipment:** When rental equipment is to be used in removal areas or to transport waste materials, a copy of the written notification provided to the rental company informing them of the nature of use of the rented equipment shall be submitted to the Owner's representative or Owner and signed by the rental company.

1.6 PERSONAL PROTECTION AND SAFETY:

A. **General:** The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his or her plant, appliances, methods, and for any damages which may result from his or her operations, improper construction practices, or maintenance. He or she shall erect and properly maintain at all times as required by the conditions and progress of the Work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site.

B. Personal Protective Equipment:

1. Provide workers and authorized visitors with sufficient set of protective full body impervious protective clothing. Personal Protective Equipment shall comply with the requirements of 29 CFR 1910, Subpart I., and Title 8 CCR Section 1532.1.
2. Work clothes shall consist of fire retarding, disposable, full-body coveralls, head covers, boots, rubber gloves, and steeled-toe boots or equivalent in accordance with 29 CFR 1926.134, and ANSI Z41. Sleeves at wrists and cuffs at ankles shall be secure.
3. Provide eye protection and hardhats as required by applicable safety regulations and shall conform to ANSI 87.1 and 89.1.

C. Respiratory Protection Requirements:

1. Disposable (single use) respirators are not to be worn for protection against lead.
2. **Providing of Equipment:** Provide all workers, foremen, superintendents, authorized visitors, and inspectors personally issued and marked respiratory equipment approved by NIOSH. When respirators with disposable filters are employed, provide sufficient filters for replacement as recommended by manufacturers or this specification. Selection of respirators shall be made according to the guidance of 29 CFR 1910.134; Title 8 CCR Section 1532.1; ANSI Z88.2; CGAI G7.1; EPA 560 OPTS-86.001; and Table I of this section. The Contractor shall provide masks, new in the box, in all sizes produced by the respirator manufacturer (one each). These masks shall be provided for the exclusive use of the Owner's representatives and shall be available at all times.
3. **Approved Respirators:** Contractor will ensure that all respirators used shall be selected from those approved by National Institute of Occupational Safety and Health (NIOSH) for use in atmospheres containing lead, solvents, removers, and against other toxic materials which may be used during the project.
4. **Powered Air-Purifying Respirators (PAPR) usage:** Full containment work activities associated with the abatement of materials coated with lead-based paint where lead containing dust particulates are expected (i.e., sand blasting) shall be conducted while wearing, at a minimum, a full facepiece, powered air-purifying respirator equipped with HEPA filters during the following tasks or under the following conditions:
 - a. During removal of lead-containing materials.
 - b. During all cleanup and wipe-down of area.
 - c. During final wipe down of work space.
 - d. At any time that air monitoring levels indicate that lead concentrations are at least 500 $\mu\text{g}/\text{m}^3$ or greater.
 - e. Any situation where gross contamination has occurred because of a tear or rupture in the containment and air sampling indicates airborne lead levels have exceeded 500 $\mu\text{g}/\text{m}^3$.
5. **1/2 Face Respirator Usage:** For the following tasks or conditions a 1/2 mask air-purifying respirators equipped with high efficiency filters may be used:
 - a. Provided maximum airborne lead concentration outside the respirator is at or below 250 $\mu\text{g}/\text{m}^3$.
 - b. During intact component removal, paint film stabilization (loose and flaky paint) work.
 - c. Pre-construction sealing of openings and penetrations to the work areas with plastic sheeting.

- d. Decontamination of removable items.
- e. Loading lead-containing drums on truck for transportation and unloading bags at approved landfill.

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Table 1. Respiratory Protection for Lead Aerosols

Airborne concentration of lead or condition of use	Required Respirator
Not in excess of 500 $\mu\text{g}/\text{m}^3$	*1/2 mask air purifying respirator with high efficiency filters. 2,3 *1/2 mask supplied air respirator operated in demand (negative pressure) mode.
Not in excess of 1,250 $\mu\text{g}/\text{m}^3$	* Loose fitting hood or helmet powered air-purifying respirator with high efficiency filters. *Hood or helmet supplied air respirator operated in a continuous - flow mode - e.g., type CE abrasive blasting respirator operated in a continuous - flow mode.
Not in excess of 2,500 $\mu\text{g}/\text{m}^3$	* Full facepiece air purifying respirator with high efficiency filters. *Tight fitting powered air-purifying respirator with high efficiency filters. *Full facepiece supplied air respirator operated in demand mode. *Full facepiece self-contained breathing apparatus (SCBA) operated in demand mode.
Not in excess of 50,000 $\mu\text{g}/\text{m}^3$	*1/2 mask supplied air respirator operated in pressure demand or other positive - pressure mode
Not in excess of 100,000 $\mu\text{g}/\text{m}^3$	*Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode - e.g., type CE abrasive blasting respirators operated in a positive - pressure mode.
Greater than 100,000 $\mu\text{g}/\text{m}^3$ unknown concentration, or fire fighting.	*Full facepiece SCBA operated in pressure demand or other positive - pressure mode.

* Greater respiratory protection is always acceptable regardless of lead concentrations.

6. **Type "C" Respirator Usage:** When Type "C" respirators are not required according to 29 CFR 1926.134, Title 8 CCR, Section 1532.1, or this specification, (whichever is more stringent), provide sufficient quantity of filters jointly approved by NIOSH for use in **lead and other** environments so that workers can change filters as required by manufacturer during the workday. Filters shall not be used any longer than one workday. Respirator filters shall be stored at job site in clean room and shall be totally protected from exposure to lead and other hazardous materials prior to their use.

7. **Air Supply Compressors:** Compressors shall meet the requirements of 29 CFR 1910.134 and the following:
 - a. Periodic inspection of the carbon monoxide monitor shall be evidenced.

 - b. Documentation of adequacy of compressed air system/respiratory protection system shall be retained on site. Documentation shall include a list of compatible components with the maximum number and type of respirators that may be used with the system.

 - c. The full facepiece, type "C" supplied-air respirator system shall be fully approved by appropriate regulatory agencies. The compressor shall be specifically for breathing air and have alarms to indicate compressor failure, and overheating. Compressor(s) shall have in-line air-purifying sorbent beds and filters to assure breathing air quality (Grade "D" or better for oil lubricated compressors; Grade "H" or better for electric compressors). The air supply system shall have safeguards to allow for sufficient capacity to allow workers to escape if the air system fails. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, a carbon monoxide converter shall be used.

 - d. The compressor intake shall be designed so as to avoid entry of contaminated air into the system either from the compressor exhaust or other sources of potential contamination. Periodic testing of compressed air shall ensure that systems provide air of sufficient quality.

 - e. A pressure-indicating gauge shall be placed at the point of connection (distribution point) where the respirator supply hose (which is a part of the approved facemask/hose system) is attached to the air filtration system or any supply manifold which is located between the mask/hose apparatus and the compressor/filter system. The pressure gauge shall be capable of measuring pressure levels that are consistent with those specified by the respirator operating specifications.

 - f. The correct pressure level shall be verified at each distribution point each time the system is engaged. The air supply system will be operated only when operating specifications are maintained.

8. **Fit Testing:** Air respirators shall be fit-tested utilizing isoamyl acetate at the beginning of each project or a minimum of every 12 months as described in Appendix C, 29 CFR 1926.58. Either Isoamyl Acetate Protocol or other similar regulatory protocol may be used.

D. **Bilingual Worker protection procedures (Posted in both English and Spanish):** Adequate shower facilities shall be provided by the Contractor. An employee leaving the Work area shall follow all decontamination procedures necessary or as described herein.

1. **Posted Procedures:** Provide and post, in the Equipment Room and the Clean Room, the decontamination and work procedures to be followed by workers and authorized visitors as described in these Specifications.
2. **Entering the Work Area:** Each worker and authorized visitor shall, upon entering the job site: put on a respirator and clean protective clothing before entering the Equipment Room or the Work area. Clothing that is appropriate for weather and temperature conditions shall be worn under the protective clothing.
3. **Personnel Exiting the Work Area:**
 - a. Ensure that personnel do not leave work areas through the equipment decontamination enclosure.
 - b. All workers and authorized visitors shall, each time they leave the Work area; remove gross contamination from clothing before leaving the Work area using a HEPA vacuum; proceed to the Equipment Room and remove all clothing except respirators by carefully rolling down the garment to reduce exposure to dust; clean the outside of the respirator with soap and water while showering; remove the respirator; and thoroughly shampoo and wash themselves
 - c. Following showering and drying off, each Worker shall proceed directly to the clean change room and dress in clean clothes at the end of each day's Work, or before eating, smoking, or drinking. Before re-entering the Work Area from the clean-change room, each Worker and authorized visitor shall put on a clean respirator and shall dress in clean protective clothing.
 - d. Before re-entering the Work area from the Clean Change Room, each worker and authorized visitor shall put on a clean respirator and shall dress in clean protective clothing.
 - e. All workers and authorized visitors shall, at the end of the work day; place disposable clothing in the abatement waste; clean protective gear, including respirators, according to standard procedures; wash hands and face again; proceed to the shower facilities, being certain to wash hair.
 - f. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work area.

- g. Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of lead-coated or contaminated materials prior to commencing actual lead abatement and until final cleanup is completed.
4. **Equipment removal procedures:** Clean surfaces of contaminated containers and equipment thoroughly by wet sponging or wiping before moving such items into the equipment decontamination enclosure system washroom or through the shower for final cleaning and removal to uncontaminated areas.
- a. Contaminated work footwear shall be stored in the Equipment Room when not in use in the Work area. Upon completion of lead abatement, dispose of footwear as contaminated waste.
 - b. Workers removing waste containers from the equipment decontamination enclosure shall enter the holding area from outside wearing a respirator and be dressed in clean disposable coveralls. No worker shall use this system as a means to leave or enter the washroom or the Work area.
5. **Safety Issues:**
- a. During the removal operations the Contractor may be placing his workers in a potentially hazardous electrical environment. Care and special consideration should be exercised by the Contractor to avoid electrical shock to his or her employees. The requirements as set forth in the latest edition of the National Electrical Code shall be adhered to at all times. Particular emphasis shall be placed on the requirements listed in Article 210-BRANCH CIRCUITS, Article 225-OUTSIDE BRANCH CIRCUITS AND FEEDERS, Article 250-GROUNDING, Article 300-WIRING METHODS, and Article 305-TEMPORARY WIRING, whenever and wherever the existing electrical power service shall be de-energized and temporary electrical power utilized.
 - b. During summer work activities the Work area environment may be very hot and humid. The Contractor shall take precautions to protect his or her workers from the hostile environment as well as the lead material. First-aid items such as stretchers, water, and cold packs should be kept adjacent to the Work area exits, thus allowing any personnel requiring emergency treatment egress from the Work area with minimum contamination to the clean environment. No worker shall be allowed to reach through the plastic or air lock door to get water or firstaid supplies during break periods inside the Work area. Breaks, lunch or worker rest periods should be held outside the Work area. All decontamination procedures shall be followed prior to exiting the Work area except in extreme emergencies.
 - c. During cold weather periods the workers shall be provided with adequate protection from the environment to not cause harm to the workers.
 - d. If evacuation of the Work area is required by contaminated personnel due to an emergency, all work efforts shall stop, and all forces shall be directed at minimizing the area contamination, cleanup operations and first-aid procedures. These activities shall be noted in the daily logbook.

- e. During work activities requiring decontamination procedures, the Contractor shall provide a means of communication for the workers inside the Work area without requiring personnel to enter or leave the Work area. This method of communications shall be a two-way radio, localized wire-connected telephone, or similar system. This communication system shall remain intact until the final containment plastic is removed. Then all equipment shall be wiped down, HEPA vacuumed or disposed of as lead-contaminated material.

E. Posting of Warning Signs:

1. Post two safety warning signs which follow the "Sample Format Warning Sign" shown below:

Sample Format Warning Sign
Minimum Size - 24" x 36"
Material - Aluminum or Fiberglass
Script:
DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

F. Emergency Precautions and Procedures:

1. Establish emergency and fire exits from the Work Area. Emergency exits shall be equipped with 2 full sets of protective clothing and respirators.
2. Local medical emergency personnel, both ambulance crews and hospital emergency room staff, shall be notified prior to commencement of abatement operations as to the possibility of having to handle contaminated or injured Workers, and shall be advised on safe decontamination.
3. Contractor shall be prepared to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated without delay for decontamination. When an injury occurs, the Contractor shall stop Work and implement fiber reduction techniques (e.g., water spraying) until the injured person has been removed from the Work Area.
4. Before starting actual removal of lead material(s), local police and fire departments shall be notified as to the danger of entering the Work Area. The Contractor shall make every effort to help these agencies form plans of action should their personnel need to enter the contaminated area.

1.7 SUPERINTENDENT, FOREMAN, CRAFTSMAN:

The Contractor shall have a job superintendent present at all times while work on this Contract is in progress.

The Project Superintendent (Competent person) shall be thoroughly familiar and experienced with lead removal and related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He or she shall be knowledgeable of all HUD, EPA, OSHA (Federal and State), and NIOSH requirements and guidelines. He or she shall be trained and certified by DHS in the proper use of all personal protection and safety equipment including, but not limited to, air purification and respiratory systems.

In addition to the Superintendent, the Contractor shall furnish one or more foremen who are familiar and experienced with lead removal and its related work, safety procedures, and equipment. The Foreman shall be the Competent person when the Superintendent is not present.

- A. It shall be a requirement of this Contract that the superintendent and/or one or more of the Contractor's foremen be in the Work area at all times while work is in progress.
- B. It is the intent of these Specifications that all phases of the Work shall be executed by skilled craftsmen experienced or receiving training by experienced personnel in each respective trade.
- C. All superintendents and foremen shall have been trained by attending an appropriate HUD approved Lead-Based Paint Supervisor training course and satisfactorily passing a California State Department of Health Services sanctioned examination for the above stated training program. Only formal training programs will be accepted.
- D. Workers shall, at a minimum, receive the appropriate classroom training program covering the topics listed in the HUD guidelines and the OSHA standard and shall have an additional 8 hours of hands-on training prior to beginning abatement work. Training will be through an appropriate HUD approved Lead-Based Paint work training course.
- E. The Competent person on-site must be able to clearly communicate in a manner so that the Owner's Consultant and Owner can clearly understand.

PART 2 - MATERIAL AND EQUIPMENT

2.1 MATERIALS:

- A. **Packaging:** Deliver all materials in the original packages, container, or bundles bearing the name of the manufacturer and the brand name.
- B. **Storage:** Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination. Damaged or deteriorating materials shall not be used and shall be removed from the

premises. Material that becomes contaminated with lead shall be disposed of in accordance with the applicable regulations.

- C. **Chemical removers:** Shall not contain methylene chloride. Chemical removers shall be compatible with and not harm the substrate they are applied to. Chemical removers used on masonry surfaces shall contain anti-stain formulation that inhibits the discoloration of stone, granite, brick, and other masonry construction. Chemical removers used on interior surfaces shall not raise or discolor the surface being abated.
- D. **Chemical stripping agent neutralizers:** May be used on exterior surfaces only. Neutralizers shall be compatible with and not harm the substrate to which they are applied. Neutralizers shall be compatible with the stripping agent that has been applied to the surface substrate.
- E. **Plastic:** (Fire retardant polyethylene) Sheet, of 6-mil thickness or greater as specified in sizes to minimize the frequency of joints.
- F. **Tape:** Capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions. Use tape with tough backing that does not leave residue on the adhering surface.
- G. **Phosphate Wash (TSP Wash):** Shall consist of a solution containing at least one ounce of 5 percent trisodium phosphate (TSP) to each gallon of water.
- H. **Impermeable containers:** Suitable to receive and retain any lead-coated or contaminated materials until disposal at an approved site, labeled in accordance with OSHA Regulation 29 CFR 1910.1025 and DOT 49 CFR 171-177. Containers must be both air and watertight and must be resistant to damage and rupture. Plastic bags shall be a minimum of 6-mil thick.
- I. **Warning labels and signs:** As required by 29 CFR 1926, 29 CFR 1910.245, and Title 8 CCR, Section 1532.1.
- J. **For bridging encapsulant use:**
 - 1. Encapsulant to be specified and approved by Owner's representative
- K. **Encapsulants/primers:**
 - 1. Encapsulant to be specified and approved by Owner's representative
- L. **Surfactants:** Or wetting agent, for amending water will be 50 percent polyoxyethylene ether and 50 percent polyoxyethylene ester, or equivalent, at a concentration of one ounce per 5 gallons of water.
- M. **Other materials:** Provide all other materials, such as lumber, nails, and hardware that may be required to construct and dismantle the decontamination area and the barriers that isolate the Work area.

2.2 TOOLS AND EQUIPMENT:

- A. **Tools:** Provide suitable tools for lead-based paint removal.
- B. **Air filtration equipment:** High efficiency particulate air (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2-79, local exhaust ventilation or equal. No air movement system or air filtering equipment shall discharge unfiltered air outside the Work area. If volatile chemicals are used, use manufacturer's guidelines and provide appropriate filters for solvent vapor or other organic based material use.

PART 3 - EXECUTION

3.1 PREPARATION (Interior Areas):

- A. **Separation of work areas from occupied areas as directed in the Scope of Work:**
 - 1. **Reference:** Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g., other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.
 - 2. **For areas requiring constructed barrier walls:** Separate parts of the building required to remain in use (as shown on Plans) from parts of the building that will undergo lead-containing or lead-based paint removal by means of airtight barriers, constructed as follows:
 - a. Build suitable wood or metal framing and apply 3/8 inch minimum thickness sheathing on work side only, unless noted otherwise.
 - b. Cover both sides of partition with double layer of plastic sheet with joints staggered and sealed with tape. Edges of partition at floor, walls, and ceiling shall be caulked airtight.
 - 3. **Electrical Shut-down:** Shut down electric power which serves the Work area. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements.
 - 4. **HVAC Shut-down:** Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure. Physically blank off, with light gage metal, all supply and return air ductwork which leads to and from an isolated work area when the air-handling unit serves areas other than within the isolated work area.
 - 5. **Seal off openings:** Seal off all openings, including but not limited to windows, corridors, doorways, skylights, ducts, grills, diffusers, and any other penetrations of the Work areas, with plastic sheeting (minimum of 4-mils thick) sealed with tape.

B. Preclean work area:

1. **Moveable Objects:** Clean all moveable objects within the Work area using HEPA vacuum equipment and wet cleaning methods. Remove these objects from the Work area to a designated temporary storage location.

Protection of and accounting for the stored materials is the sole responsibility of the Contractor.

2. **Fixed Objects:** Preclean fixed objects within the proposed work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate, and enclose with minimum of 6-mil polyethylene sealed with tape.
3. **Vacuum and Wet Methods:** Preclean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

C. Prepare work area:

1. **Reference:** Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g. other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.
2. **Non-Contaminated Objects:** Remove and clean objects, such as lights and other items not previously sealed off, that may interfere with lead removal. Use HEPA vacuum equipment and wet methods during fixture removal to reduce lead dispersal. Wrap in plastic and store for reinstallation upon completion of testing procedures.
3. **Protection of Fixed Objects:** Protect all fixtures, grills, lockers, and other non-removable equipment from water. Also, protect painted surfaces and flooring.
4. **Plasticization:** Cover non-impacted floor, walls and ceiling surfaces with plastic sheeting sealed with tape. Use a minimum of two layers of 6-mil plastic on floors and two layers of 4-mil plastic on walls and ceilings. Cover floors first so that plastic extends at least 12 inches up on walls, then cover walls with plastic sheeting to the floor level, thus overlapping the floor material by a minimum of 12 inches.
 - a. All criticals (doors, vents, openings, wall penetrations, etc.) will be covered with 2 layers of 6-mil plastic and secured with duct tape to prevent leakage of air. If windows, doors, door frames, or other interior/exterior transitional items on which lead-based paint is to be removed, place 2 layers of 6-mil plastic just to the outside of the surface area to be removed. All exterior lead-based paint removal is to be performed according to Section 9912, Lead-Based Paint Removal (Exterior).
 - b. The second layer of floor sheeting may be black or dark in color. If floor coverings are scheduled for removal, per Plans and/or Scope of Work, floor

plastic is not placed until after floor coverings are removed, which occurs during Lead Removal activities, paragraph 3.2.

- c. All joints in the plastic sheeting shall have a minimum of 12 inches of overlap and shall be securely sealed with tape to prevent leakage of air and water.
- 5. **Emergency Exits:** Maintain emergency and fire exits from the Work areas, or establish alternative exits satisfactory to fire officials.
- 6. **Establish a reduced pressure in the Work area**
 - a. **Determine the Ventilation Requirements:**

- (1) **General:** Provide fully operational negative pressure systems supplying a minimum of one air change every 15 minutes. Determine the volume in cubic feet of the work area by multiplying floor area by ceiling height. Determine total ventilation requirement in cubic feet per minute (cfm) for the work area by dividing this volume by the air change rate.

Ventilation Required (CFM) = Volume of work area (cu. ft.)/15 min.

- (2) **Number of Units:** Determine number of units needed to achieve 15 minute change-rate by dividing the ventilation requirement (CFM) above by capacity of exhaust units(s) used. Capacity of a unit for purposes of this section is the capacity in cubic feet per minute with fully loaded filters (pressure differential which causes loaded filter warning light to come on) in the machines labeled operating characteristics.

$$\text{Number of Units Needed} = \frac{\text{Ventilation Requirement (CFM)}}{\text{Capacity of Unit with Loaded Filters (CFM)}}$$

Add one (1) additional unit as a backup in case of equipment failure or machine shutdown for filter changing.

- (3) **Location of Exhaust Units:** Locate exhaust unit(s) so that makeup air enters work area primarily through decontamination facilities and traverses work area as much as possible. This may be accomplished by positioning the exhaust unit(s) at a maximum distance from the worker access opening or other makeup air sources.

Place end of unit, or its exhaust duct, through an opening in the plastic barrier or wall covering. The plastic around the unit or duct shall then be sealed with tape.

- (4) **Venting or Exhaust:** Unless authorized in writing by the Project Coordinator, vent negative air exhaust to outside of building. Exhaust outlet shall be a minimum of ten feet above ground level.
 - (5) **Supplemental makeup air inlets:** Provide where required for proper air flow through the work space in location approved by the Project

Coordinator by making openings in the plastic sheeting that allow air from outside the building into the work area.

- (6) **Makeup Air Inlets:** Locate auxiliary makeup air inlets as far as possible from the exhaust unit(s) (e.g., on an opposite wall), off the floor, and away from barriers that separate the work area from occupied clean areas. Cover with flaps to reseal automatically if the negative pressure system should shut down for any reason. Spray flap and around opening with spray adhesive so that flap seals if it closes.

b. Use of the Negative Pressure System:

- (1) **General:** Each unit shall be serviced by a dedicated minimum 115V-20A circuit with overload device tied into an existing building electrical panel that has sufficient spare capacity to accommodate the load of all negative pressure units connected. Dedication of an existing circuit may be accomplished by shutting down existing loads on the circuit.
- (2) **Testing the System:** Test negative pressure system before any lead-containing material is wetted or removed. After the work area has been prepared, the decontamination facility set up, and the exhaust unit(s) installed, start the unit(s) (one at a time). Demonstrate operation and testing of negative pressure system to Project Coordinator.
- (3) **System Evaluation:** A demonstration of the negative pressure system to the Project Coordinator will include, but not be limited to, the following:
 - (a) Plastic barriers and sheeting move slightly in toward work area.
 - (b) Curtain of decontamination units move slightly in toward work area.
 - (c) There is a noticeable movement of air through the decontamination unit. Use smoke tube to demonstrate air movement from Clean Room to Shower Room, from Shower Room to Equipment Room, and from Equipment Room to Work Area.
 - (d) Use smoke tubes to determine a positive motion of air across all area in which work is to be performed.
 - (e) Use a differential pressure meter or manometer to demonstrate a pressure difference of at least 0.02 inches of water across every barrier separation the Work Area from the balance of the building or outside.
 - (f) Modify the negative pressure system as necessary to successfully demonstrate the above.

D. Decontamination Facilities:

1. **General:** Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g., other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.

2. **Construction Review:** Build suitable decontamination facilities described herein, as previously submitted for review, before start of construction.
3. **Air Locks and Access Doorways:** In all cases, access between contaminated and uncontaminated rooms or areas shall be through an air lock previously defined. Passage between any two rooms within the decontamination facility shall be through an access doorway.
4. **3-Stage Decontamination Enclosure:** Construct a worker decontamination enclosure system contiguous to the Work area consisting of three totally enclosed chambers to conform to standard Plans bound herein and as follows.
 - a. A shower room with two access doorways, one to the equipment room and one to the clean room. Plastic, if used, on shower room and adjoining equipment and clean rooms shall be opaque.
 - b. The shower room shall contain at least one shower with hot and cold or warm water. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind.
5. **Remote Decontamination Enclosures:** For remote decontamination systems (non-contiguous to the Work area) construction of the shower will conform to Section 02071HM, Part 3.1, D1, above with the following modifications:
 - a. The enclosure need not be attached to the Work area, but clean room and equipment rooms must be clearly marked at their respective entrances.
 - b. A HEPA filtration machine must be attached to the equipment room and must be operational while the decontamination unit is in use.
6. **Equipment Decontamination Enclosures:** For an equipment decontamination enclosure facility, construct two totally enclosed chambers as follows:
 - a. A washroom, constituting an air lock, with an access doorway to a designated area of the Work area and an access doorway to the holding area.
 - b. A holding area, constituting an air lock, with an access doorway to the washroom and an access doorway to an uncontaminated area.
7. **Entry/Exit systems:** All decontamination systems or entry/exit system air locks will be constructed using Z-flap design incorporating 2 layers of 6-mil plastic with the flaps extending the full height and width of the entrance space.

E. Maintenance of enclosure system:

1. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
2. Visually inspect enclosures at the beginning of each work period.

3. Use smoke methods to test effectiveness of barriers when directed by Owner or representative of Owner.

F. Lead removal work shall not commence until:

1. Arrangements have been made for disposal of waste at an acceptable site.
2. Work areas and decontamination facility and parts of the building required to remain in use are effectively segregated.
3. Tools, equipment, and material waste receptors are on hand.
4. Arrangements have been made for building security.
5. All other preparatory steps have been taken and applicable notices posted and permits obtained.
6. Removal work will not begin until the Owner's consultant authorizes work to commence, in writing.

3.2 LEAD REMOVAL:

A. General: Prepare site per paragraph 3.1.

B. References: Contractor will use the applicable procedures as outlined in Section 01010HM or, if none, use those contained within. Where conflict among requirements (e.g. other concurrent work) or with these Specifications exists, the more stringent requirements shall apply.

C. Negative pressure system during abatement Operations:

1. Start exhaust units before beginning work (before any lead-containing material is disturbed). After abatement work has begun, run units continuously to maintain a constant negative pressure until decontamination of the work area is complete. Do not turn off units at the end of the work shift or when abatement operations temporarily stop.
2. Start abatement work at a location farthest from the exhaust units and proceed toward them. If an electric power failure occurs, immediately stop all abatement work and do not resume until power is restored and exhaust units are in operation again.
3. At completion of abatement work, allow exhaust units to run, to remove airborne dust that may have been generated during abatement work and cleanup and to purge the work area with clean makeup air. The units may be required to run for a longer time after decontamination, if dry or only partially wetted lead material was encountered during any abatement work.

D. Lead-Containing Materials Removal:

1. Ensure that the material is thoroughly soaked with amended water prior to removal.
2. Ensure that the air is misted thoroughly during the removal process.
3. Remove materials intact as much as possible.

E. Containerizing Waste:

1. **Daily Containerizing:** During each day's work, the bulk lead material shall be bagged in 6-mil thick bags, before it dries. No lead material shall be allowed to lie on the floor overnight.
2. **Types of Containers:** Place the bagged material in sealed containers (hard sealable containers).
3. **Labels:** Place caution labels on containers in accordance with OSHA Regulation 29 CFR 1910.1025 and DOT 49 CFR 171-177 if not already preprinted on containers.
4. **Cleaning:** Clean external surfaces of containers thoroughly by wet sponging in the designated area. Move containers to washroom, wet clean each container thoroughly, and move to holding area pending removal to uncontaminated areas. If the holding area is outside containment it will be a locked and secured area with appropriate warning signage at entrance. If holding area is within containment ensure that area is secure and appropriate signage is maintained.
5. **Safety:** Ensure that containers are removed from the holding area by workers who have entered from uncontaminated areas dressed in clean coveralls.

F. Post Removal Cleaning: After completion of stripping work (chemical or abrasive), all surfaces from which lead-based paint or lead containing material has been removed shall be wet brushed and sponged or cleaned by an equivalent method to remove all visible material. During this work, the surfaces being cleaned shall be kept wet. At the Contractor's option, the layer of plastic exposed to the lead may be removed, leaving intact the final layer of plastic.

G. Safety: Ensure that workers do not enter from uncontaminated areas into the washroom or the Work area; ensure that contaminated workers do not exit the Work area through the equipment decontamination enclosure system.

3.3 CLEANUP AND CLEARANCE MONITORING:

Employ the following procedures in cleaning up the Work area:

A. Wet Clean: Wet-clean all surfaces and remove all visible accumulation of lead containing material from the Work area. Prepare the Work area for the initial visual inspection using a sequenced cleaning technique using HEPA vacuuming, a TSP washdown, and a second HEPA vacuuming.

- B. **Initial Visual Inspection:** Once the Work area is clean of visible accumulations of lead material, the Owner's consultant will perform the visual inspection. The Contractor will continue the HEPA vacuuming and washdown process until the area is visible clean.
- C. **Plastic Removal:** When the area is deemed clean by the Owner's consultant, remove plastic from all surfaces
- D. **For surfaces to be stabilized perform the following:**
1. As directed by Owner's Representative, lead painted surfaces shall be sealed with a non-lead containing encapsulating primer after the surface is clean and dry. Apply encapsulant using airless spray equipment or suitable paint applicator where a uniform coat can be applied.
 2. Prepare and apply encapsulating primer according to the manufacturer's specifications. Because application by spraying could cause dissemination of residual LBP, encapsulating primer must be applied with as much caution and at as low a nozzle pressure as possible.
 3. Encapsulating primer shall be applied according to manufacturer's specifications. Encapsulating primer shall be allowed to dry between coats, per manufacturer's recommendations.
 4. Upon completion of paint stabilization work, notify Owner's consultant in writing that stabilization surfaces are ready for review.
- E. **Final Visual Inspection:** Owner's consultant will conduct a thorough visual inspection to determine the completeness of encapsulation and use a damp cloth for wiping abated surfaces prior to collecting the actual wipe samples.
- F. **Clearance Wipe Testing:** Upon successful completion of the visual inspection and Owner's consultant's determination that all surfaces in the Work area are dry and free of contamination, the clearance wipe tests will be conducted. A certificate of Visual Inspection shall be issued by the Owner's Representative and shall be signed by both the contractor and the Owner's Representative.
1. The final wipe clearance test will consist of sampling and analysis in accordance with the HUD guidelines. The levels noted in the HUD Guidelines or Title 17, California Code Of Regulations, Division 1, Chapter 8 (whichever is more stringent at time of work) will be achieved prior to acceptance.
 2. Contractor shall continue cleaning the Work site until the accepted lead level is achieved.
- G. **Additional inspection/testing:** Additional inspection/testing required after the sequence detailed above will be the responsibility of the Contractor. In the event of additional testing, the Contractor may reimburse Owner, or reduce the Contract amount by change order. It is the Owner's intent to have, at no charge to the Contractor, one set of inspections/tests performed in each area. A test may consist of one sample or a series of samples performed at the same time.

- H. **Dismantling the negative air system:** When a final inspection and the results of final wipe tests indicate that the area has been decontaminated, exhaust units may be removed from the work area. Before removal from the work area, remove and properly dispose of pre-filter, and seal intake to the machine with 6-mil polyethylene to prevent environmental contamination from the filters.

3.4 **HANDLING AND DISPOSAL OF LEAD-COATED MATERIALS AND LEAD-CONTAMINATED WASTE:**

Waste Characterization: Contractor shall submit to Owner's consultant, copies of waste characterization testing prior to transportation of all waste.

- A. **Storage:** Store all waste material in a lockable container that is inaccessible to all persons other than employee's of the Contractor. Until TCLP testing proves a category to be non-hazardous, all waste shall be considered hazardous, and stored as such. Any material found to be hazardous by way of testing shall be labeled "**Hazardous Waste - Contains Lead**" and the date that the Contractor began to collect the waste in that container. All hazardous and non-hazardous waste shall be kept in totally and completely separate containers.

B. **Waste Segregation**

1. All categories of waste identified in this specification shall be kept separate from each other. The categories that have been identified include:
 - a. Waste water from shower and cleaning operations
 - b. Disposable suits and respirator cartridges
 - c. Components that are painted with Lead-Based paint
 - d. Components that are lead-laden (e.g., ceramic tile)
 - e. Paint chips, debris and vacuum contents
 - f. Plastic sheeting, duct tape
 - g. Rags, sponges, mops and other items used to conduct clean up activities

- C. **Representative Samples:** Representative material of each of the categories must be sampled and submitted for testing to determine if the material in the category are hazardous.

1. Representative samples of waste materials shall be collected by the Consultant.

D. **Waste Testing**

1. At no time shall waste be removed from the site without the following documentation submitted to the Owner or Owner's representative for approval.
 - a. TCLP, STLC, and TTLC testing results as required by the specifications or according to local and state requirements.

- b. Hazardous waste manifest for those materials identified as hazardous wastes.
 2. Testing of those categories of materials shall be performed to minimize the storage of assumed hazardous materials. Contractor shall collect at least one composite sample from each of the categories listed above in section 3.4.B, "Waste Segregation." The analysis shall be conducted to determine if any of the waste categories are classified as a RCRA hazardous waste. The Contractor shall determine if testing for other compounds, such as pH, Flashpoint, etc., are required for disposal at a particular landfill.
 3. If test results of the composite samples for any of the Waste Segregation categories indicate that the sampled materials are found to contain greater than the action levels indicated below, those materials represented by the composite sample shall be disposed of as Hazardous Waste.
 - a. Greater than or equal to 1000 PPM of the total Lead as determined by the Total Threshold Limit Concentration Procedure (TTLC) by EPA 6010.
 - b. Greater than or equal to five (5) PPM of soluble Lead as determined by the "California Wet Test" or Soluble Threshold Limit Concentration Procedure (STLC) by EPA 200.7.
 - c. Greater than or equal to five (5) PPM of leached Lead as determined by the Toxicity Characteristic Leaching Procedure (TCLP) by EPA 200.7
 4. All waste must be transported by a Certified Hazardous Waste Transporter.
 5. If the test results for any of the waste segregation categories indicate that less than the action levels listed above were detected, those materials represented by the composite sample may be disposed of as construction debris provided they do not meet any other criteria that would designate them as a hazardous waste.
 6. The Abatement Contractor will be required to comply with the Resource Conservation and Recovery Act (RCRA) and/or any other applicable state, county law, regulation and/or guidelines, whichever is the most stringent.
- D. **Waste Transportation:** Submit the method of transport of hazardous waste including name, address, EPA I.D. number, and telephone number of transporter.
 1. If the Abatement Contractor is not a RCRA/DOT/EPA certified Hazardous Waste Transporter, then a contract shall be entered into with a certified Transporter to move the waste. The Abatement Contractor shall require the certified hazardous waste transport firm to follow RCRA, DOT, EPA, and any/all other applicable regulations. Many transporters are also capable of supplying pertinent information and services applicable to necessary rules, regulations, and specifications. The certified Transporter/hauler shall submit to the Owner or Owner's representative for approval their qualifications to perform the work as specified herein. The Abatement Contractor shall be responsible for the actions of the waste hauler as pertaining to waste removal and disposal under this section and all EPA, DOT, and other applicable regulations.

- E. **Hazardous Waste Site:** Submit for approval the name, class, address, EPA I.D. number, and telephone number of hazardous waste site(s) to be utilized for disposal.
1. The Abatement Contractor must supply documents that detail the site(s) to be used for ultimate waste disposal. Documents from these disposal sites must be supplied by the Abatement Contractor to the **Owner or Owner's representative** from the disposal facilities stating that hazardous and/or construction waste will be accepted by these facilities. In addition, the Abatement Contractor must submit documents from these sites proving that they are licensed/permitted to accept such waste and will accept the waste proposed by the Abatement Contractor for treatment or ultimate disposal.
- D. **Containers:** Containers to be loaded for transportation from the Holding Area must be removed by Workers who have entered from uncontaminated areas, dressed in clean overalls. Workers must not enter from the Holding Area into the Washroom or the Work Area.
1. Waste Containers – The Abatement Contractor will comply with EPA and DOT regulations for waste containers. The Abatement Contractor shall contact the State and Local authorities to determine their criteria for containers. In the case of any conflict in regulations, the more stringent regulation shall apply.
 - a. Paint Chips: The Abatement Contractor shall place lead-based paint fragments and debris produced as a result of any abatement activity, and lead dust in 6-mil polyethylene (plastic) bags that are air-tight and puncture-resistant.
 - b. Cleaning Materials: The Abatement Contractor will place all disposable cleaning materials such as sponges, mop heads, filters, disposable clothing, and brooms in six-mil plastic bags or sealable drums. If after testing, those materials are determined to be hazardous, the bags or drums will be sealed, labeled, and considered hazardous waste.
 - c. Contaminated Debris: In Particular, the Abatement Contractor shall separate, label, and containerize the following.
 - (1) All paint fragments removed by chemical strippers, surface preparation, or by any abatement methodology.
 - (2) Grossly contaminated body suits.
 - (3) HEPA vacuum contents, filters, and respirator cartridges: paint chips or other abatement debris on plastic should always be HEPA vacuumed prior to picking up the plastic.
 - (4) Dust/Debris or contaminated materials.
 - (5) All hazardous waste or materials should be kept totally separate from non-hazardous materials.

- (6) Polyethylene Sheeting: Prior to removing any six (6) mil polyethylene sheeting, the Abatement Contractor shall lightly mist the sheeting in order to keep dust down and remove and containerize any debris by folding the polyethylene sheeting inward to contain debris and to form tight bundles to containerize for disposal. The Abatement Contractor shall place all plastic sheeting in six (6) mil thick polyethylene bags or sealable drums, and seal with duct tape.
 - (7) Liquid Waste: The Abatement Contractor shall contain and properly dispose of all liquid waste, including lead-contaminated wash water. The container for waste waters shall be lined 55 gallon metal drums.
 - (8) Solvents: The Abatement Contractor shall place solvent residues and residues from strippers in drums made out of materials that cannot be dissolved or corroded by chemicals. Solvents will be tested by the Abatement Contractor to determine if they are hazardous. Solvents, caustic, and acid waste must be segregated and not stored in the same containers.
2. The Abatement Contractor shall HEPA vacuum the exterior of all waste containers prior to removing the waste containers from the work area and shall wet wipe the containers to ensure that there is no residual contamination. Containers should then be moved out of the work area into the designated storage area.
- F. **Disposal:** The sealed lead containers shall be delivered to Contractor's pre-designated approved Hazardous Waste Site for burial; in accordance with Title 22, CAC, EPA guidelines and 40 CFR 61.156 and local Air Pollution Control District Regulations.
 - G. **Notification of Transport:** Notify the Owner's consultant **48 hours in advance** of the time when contaminated materials are to be removed from the site.
 - H. **Safety:** Contractor shall be responsible for safe handling and transportation of hazardous waste generated by this Contract to the designated Hazardous Waste Site.
 - I. **Hazardous Materials Spills:** Contractor shall hold the Owner and Owner's consultant harmless for claims, damages, losses, and expenses, including attorney's fees arising out of or resulting from, lead spills on the site or spills enroute to the disposal site.

3.5 REESTABLISHMENT OF OBJECTS AND SYSTEMS:

- A. **Relocation of Moveable Objects:** Relocate objects moved to temporary locations in the course of the Work to their proper positions. Only clean objects are to be moved into the areas.
- B. **Remounting Objects:** Remount objects removed in the course of the Work in their former positions. Repair any moveable or fixed objects damaged during the course of the Work.

C. **Systems reestablishment:** Reestablish HVAC, mechanical, and electrical systems in proper working order.

1. Install new HVAC filters and dispose of used filters as contaminated waste.

D. **Building repair/repaint:** Repair any damage to building, or building systems (electrical, mechanical, plumbing, etc.,) which was not noted in writing prior to work area preparation.

1. Repaint any areas damaged during the course of the Work unless this work is scheduled for repair by others. See paragraph 1.2 C, Related Work Specified Elsewhere, of this section. Quality of paint and workmanship shall be consistent with that found within the building prior to this Project, unless otherwise stated. Refer to Section 09900-Painting.

END OF SECTION

SECTION 02093HM

INTERIM CONTROLS REGARDING LOOSE AND FLAKY PAINT (Paint Film Stabilization)

PART 1 - GENERAL

1.1 **SCOPE:**

This Specification covers the implementation of interim controls regarding the removal of loose and flaky lead-based paint from substrates as described in Section 01010HM, Scope of Work.

1.2 **DESCRIPTION OF WORK:**

- A. The Work specified herein shall be the removal of loose and flaky lead-based paint by persons knowledgeable, qualified, and trained in interim controls for the removal, treatment, handling, and disposal of loose and flaky lead-based paint, and the subsequent cleaning of the affected environment, and who comply with Federal, State, and Local regulations and guidelines which mandate work practices, and who are capable of performing the Work of this Contract.
- B. **Contract Fulfillment:** The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the Work in accordance with applicable governmental regulations and guidelines and these Specifications.

1.3 **TERMINOLOGY:**

See Section 02092HM, Part 1.3 for Terminology.

1.4 **APPLICABLE DOCUMENTS:**

Comply with Section 02092HM, Part 1.4 for Applicable Documents.

1.5 **SUBMITTALS AND NOTICES:**

Comply with Section 02092HM, Part 1.5 for Submittals and Notices.

1.6 **PERSONAL PROTECTION AND SAFETY:**

Comply with Section 02092HM, Part 1.6. It shall be modified in the following particulars only.

A. Respiratory Protection Requirements:

1. Disposable (single use) respirators are not to be worn for protection against lead.
2. For the following tasks or conditions, a 1/2 mask air-purifying respirator, equipped with high efficiency filters may be used:
 - a. Provided maximum airborne lead concentration outside the respirator at or below 500 $\mu\text{g}/\text{m}^3$:
 - b. Pre-construction sealing of openings and penetrations to the work areas with plastic sheeting.
 - c. Decontamination of removable items.
 - d. During removal of lead-containing materials.
 - e. During all cleanup and wipe down of area.
 - f. During final wipe down of work space.
 - g. Loading lead-containing drums on truck for transportation and unloading bags at approved landfill.
3. A full facepiece, powered air-purifying respirator equipped with HEPA filters will be required under the following conditions:
 - a. At any time that air monitoring levels indicate that lead concentrations are at least 500 $\mu\text{g}/\text{m}^3$ or greater.
4. All employees and visitors will wear appropriate filters for the work at hand. During chemical use, follow manufacturer guidelines for appropriate personal and respiratory protection.

B. Bilingual Worker Protection Procedures (Posted in both English and Spanish):

1. Each worker and authorized visitor shall: put on a respirator and don one suit of protective clothing before entering the Equipment Room or the Work area. Clothing that is appropriate for weather and temperature conditions is worn under the protective clothing.
2. Each time before leaving the work area, all workers and authorized visitors shall remove gross contamination from the protective clothing using a HEPA vacuum, then remove protective clothing except respirators by carefully rolling down the garment to reduce exposure to dust and place within a labeled hazardous material

6-mil plastic bag which is within the work area. Personnel will then proceed through to the washroom and clean the outside of the respirator with a wet disposable towel; remove the respirator; and thoroughly wet wipe themselves

3. Following wet wiping and decontamination procedures, each Worker shall proceed directly to the outside area at the end of each day's Work, or before eating, smoking, or drinking.
4. Before re-entering the Work Area, each Worker and authorized visitor shall put on a clean respirator and shall dress in clean protective clothing as described above.
5. Contaminated work footwear shall be stored in the Equipment Room or Work area in a labeled 6-mil bag when not in use in the Work area until they are appropriately decontaminated. Upon completion of lead work, dispose of footwear as contaminated waste unless they can be appropriately decontaminated. All porous type footwear will be disposed of as contaminated waste.
6. Workers removing waste containers from the equipment decontamination enclosure shall enter the holding area from outside wearing a respirator and dressed in clean disposable coveralls. No worker shall use this system as a means to leave or enter the washroom or the Work area.
7. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work area.
8. Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of lead-coated or contaminated materials prior to commencing actual lead abatement and until final cleanup is completed.

1.7 SUPERINTENDENT, FOREMAN, CRAFTSMAN:

Comply with Section 02092HM, Part 1.7, Superintendent, Foreman, Craftsman.

PART 2 - MATERIAL AND EQUIPMENT

Comply with Section 02092HM, Part 2.

PART 3 - EXECUTION

3.1 PREPARATION:

A. For exterior work, the contractor shall prepare the area as follows:

1. Doors and Windows: Doors and windows on the side of the building upon which a dust-generating method is being used, and on the same floor and all floors below, must be covered with 6-mil thick polyethylene sheeting.

2. Plants and ground: The ground and any plants or shrubs in the area in which exterior abatement is occurring shall be covered with two layers of 6-mil plastic in a tarp-like fashion, sufficiently bonded together to form a single layer and weighted at all edges so as to prevent blowing. A single 10-mil plastic sheet may be substituted. Such covering shall cover from the side of the structure to a point at least eight feet away from the structure for every story in height (10'). The covering shall be taped or otherwise attached to the structure.
 3. Ground covers shall always be placed in a manner that traps all debris and water. This is best accomplished by elevating the edges.
 4. The plastic ground cover shall be properly disposed of and not re-used.
- B. For exterior work where water blasting occurs, the contractor shall prepare the area as follows:
1. Critical Barriers shall be erected whereby all water and loose paint shall be contained within the Work Area.
 2. Ground: The ground shall be covered with 10-mil or 6-mil reinforced polyethylene and shall extend 18 inches vertically at all perimeter walls.
 3. Vertical Surfaces: A single layer of 6-mil polyethylene shall be constructed as a critical barrier on all vertical walls and shall overlap 12 inches on top of ground poly.
 4. Contractor shall contain all water within the enclosure. Contractor shall construct containment as to prevent water leakage from containment or into buildings.
 5. All containment plastic shall be properly disposed of and not re-used.
 6. All water within the containment shall be filtered with a HEPA filtration device.
- C. For all exterior work:
1. **Special Areas:** Any abatement project being performed on any structure other than a building shall be arranged, equipped, and operated in a manner that will eliminate the possibility of lead contaminates or lead contaminated materials escaping from the work area.
 2. **Maintain Barriers:** The abatement subcontractor shall maintain polyethylene barriers and a clean area as long as needed for the safe and proper completion of the work. Any openings or tears in the work area barriers shall be corrected by the abatement subcontractor at the beginning of each work day and as necessary during the workday with such openings and barriers in place and acceptable to the owner's consultant.
 3. **Prior to barrier removal:** Barriers shall not be removed until the work areas are thoroughly cleaned, and the area is approved by the consultant. All debris must be bagged and removed from work areas, and the lead surface wipe samples must

have passed final clearance test, in accordance with provisions detailed in the barrier removal.

4. **Use of mini-isolation chamber:** At the Owner's, and consultant approval, the Abatement Subcontractor may utilize a portable mini-isolation chamber to create an isolated work area around single components to be removed. This chamber shall still be equipped with an adjacent clean room, and become an isolated work area sealed at all seams to where it is attached to adjacent surfaces. It shall also satisfy all requirements for a work area and satisfy all clearance criteria, as identified in this section and local law.
5. **Signs:** Prior to the preparation of the dwelling for abatement, the abatement subcontractor shall place warning signs immediately outside all entrances and exits to the dwelling, warning that abatement work is being conducted in the vicinity. The signs shall be at least 20" x 14" and read

DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

6. Signs shall be in bold lettering with lettering not smaller than two inches tall.
 7. Construct and maintain suitable polyethylene barriers within the building to isolate the exterior work area from the interior of the building. Make every effort to maintain a distance of 25 feet from the barrier tape to the closet scheduled point of work within the Work area(s).
 8. Maintain emergency and fire exits from Work Areas.
- D. For interior work, the contractor shall prepare the area as follows:
1. **HVAC shut down:** Shut down or isolate heating, cooling, ventilation air systems within the control area to prevent contamination and dust dispersal to other areas of the structure. During the Work, vents within the immediate removal area (to a distance of ten feet from the affected surface) shall be sealed with tape and plastic sheeting and as shown on plans.
 2. **Loose equipment:** Do not begin Work until immediate work area is free of loose equipment.
 3. **Pre-clean:** Pre-clean fixed objects within the proposed Work Areas using HEPA filtered vacuum equipment and/or protect occupants' belongings by covering with one layer of six mil polyethylene and have joints taped. All debris gathered during this clean up shall be disposed of properly. In addition, any loose paint or paint bearing debris found in the buildings are to be assumed hazardous and packaged

and disposed of properly. The amount of the materials should be estimated during the pre-bid walk through.

4. **Use of a mini-containment:** At the Owner's and consultant's approval, the Abatement Subcontractor may utilize a portable mini-isolation chamber to create an isolated work area around single components to be removed. This chamber shall still be equipped with an adjacent clean room, and become an isolated work area sealed at all seams to where it is attached to adjacent surfaces. It shall also satisfy all requirements for a work area and satisfy all clearance criteria, as identified in this section and local law.
5. **Walls and floors:** Lay a single layer of six-mil thick polyethylene sheeting below the impacted area. Sheeting will extend to a distance of six feet beyond the affected area in all direction not bounded by walls or non-moveable partitions. Walls directly below the affected surface will be covered with six-mil thick polyethylene sheeting to extend 4 feet in either direction beyond the affected area.
6. **Surrounding barrier:** A barrier shall be erected at room entrances, which shall be sealed with a single layer of six-mil thick polyethylene sheeting, and a suitable two-stage decontamination unit shall be erected and attached to barrier sheeting.
7. **Maintaining barriers:** The abatement subcontractor shall maintain polyethylene barriers and a clean area as long as needed for the safe and proper completion of the work. Any openings or tears in the work area barriers shall be corrected by the abatement subcontractor at the beginning of each work day and as necessary during the workday with such openings and barriers in place and acceptable to the consultant.
8. **Removal of barriers:** Barriers shall not be removed until the work areas are thoroughly cleaned, and the area approved by the consultant. All debris must be bagged and removed from work areas, and the lead surface wipe samples must have passed final clearance test according to provisions detailed in the barrier removal.
9. **Signs:** Prior to the preparation of the dwelling for abatement, the abatement subcontractor shall place warning signs immediately outside all entrances and exits to the dwelling, warning that abatement work is being conducted in the vicinity. The signs shall be at least 20" x 14" and read:

DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

10. Signs shall be in bold lettering with lettering not smaller than two inches tall.
11. Maintain emergency and fire exits from Work Areas.

12. Construct and maintain suitable polyethylene barriers within the building to isolate the exterior work area from the interior of the building. Make every effort to maintain a distance of 10 feet from the barrier tape to the closet scheduled point of work within the Work area.

13. Maintain emergency and fire exits from Work Areas.

E. Decontamination Facilities:

Build suitable decontamination facilities described herein, as previously submitted for review, before start of construction.

In all cases, access between contaminated and uncontaminated rooms or areas shall be through an air lock previously defined. Passage between any two rooms within the decontamination facility shall be through an access doorway.

1. Locate decontamination facility as close in proximity to the Work area as possible.
2. Construct a two-stage worker decontamination enclosure system consisting of two totally separate areas to conform to standard Plans found herein and as follows.
 - a. A shower area with two access ways: one to the equipment room and one to the outside area. Plastic, if used, on shower room and adjoining equipment rooms shall be opaque.
 - b. The shower area shall contain at least one room with water for wet wiping of hands and face. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind.
3. If needed, provide or construct an equipment decontamination area consisting of two totally separate areas as follows:
 - a. A washroom, with access to a designated area of the Work area and access to the holding area.
 - b. A holding area with access to the washroom and access to an uncontaminated area.
4. At entrances and exits and the decontamination facility name of both the shower and equipment decontamination room, a clearly identifiable label shall be affixed that is visible from a distance of 25 feet.

3.2 INTERIM CONTROL METHODS FOR LOOSE AND FLAKY LBP:

- A. Prepare site per paragraph 3.1.
- B. Remove and clean or clean and wrap objects, such as lights and other items not previously sealed off that may interfere with lead removal. Use HEPA vacuum equipment and wet methods during fixture removal to reduce lead dispersal. Wrap removed items in plastic and store for reinstallation upon completion of testing procedures.

C. **Protection:** Protect all fixtures, grills, lockers, and other non-removable equipment from water. Also, protect painted surfaces and flooring.

D. **Scraping of loose and flaky paint:**

1. All surfaces shall be final scrapped following other flaky paint removal methods.
2. The Contractor shall scrape the material in such a manner as to prevent damage to the substrate.
3. The Contractor shall use wet methods during the scraping process, unless the substrate will result in undo damage from the wetting. If wetting cannot be performed to this condition, scraping shall be slow and deliberate so as to lessen the distance of travel. In all cases, occasional misting of the immediate area over the drop cloth shall be performed. After scraping the impacted area, the area shall be thoroughly HEPA vacuumed.
4. Sufficient scraping of loose and flaky paint for application of lead-bloc or other encapsulation method shall occur when a scraping blade is drawn across the remaining painted surface with heaviness of hand and no additional paint dislodges from the substrate. Sufficient scraping is at the discretion of the consultant and/or inspector.

E. **Paint Stabilization:** Perform paint stabilization process according to Section 2092, Part 3.3.D.

3.3 CLEANUP AND CLEARANCE MONITORING:

Comply with Section 02092HM, Part 3.3, for Cleanup and Clearance Monitoring.

3.4 DISPOSAL OF LEAD-COATED MATERIALS AND LEAD-CONTAMINATED WASTE:

Comply with Section 02092HM, Part 3.4, for Disposal of Lead-Coated Materials and Lead-Contaminated Waste.

3.5 REESTABLISHMENT OF OBJECTS AND SYSTEMS:

Comply with Section 02092HM, Part 3.5 for Reestablishment of Objects and Systems.

END OF SECTION

SECTION 02095HM

LEAD-BASED PAINT REMOVAL (Chemical and Component)

PART 1 - GENERAL

1.1 **SCOPE:**

This Specification covers the abatement of materials coated with lead-based paint as described in Section 01010HM, Scope of Work.

1.2 **DESCRIPTION OF WORK:**

- A. **The Work:** The Work specified herein shall be the removal of those materials coated with lead-based paint by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of lead-based paint, and the subsequent cleaning of the affected environment, and who comply with Federal and State and Local regulations and guidelines which mandate work practices, and who are capable of performing the Work of this Contract.
- B. **Contract Fulfillment:** The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the Work in accordance with applicable governmental regulations and guidelines and these Specifications.

1.3 **TERMINOLOGY:**

See Section 02092HM, Part 1.3, for Terminology.

1.4 **APPLICABLE DOCUMENTS:**

Comply with Section 02092HM, Part 1.4, for Applicable Documents.

1.5 **SUBMITTALS AND NOTICES:**

Comply with Section 02092HM, Part 1.5, for Submittals and Notices.

1.6 **PERSONAL PROTECTION AND SAFETY:**

Comply with Section 02092HM, Part 1.6. It shall be modified in the following particulars only.

A. **Respiratory protection requirements:**

1. Disposable (single use) respirators are not to be worn for protection against lead.

2. For the followings tasks or conditions a 1/2 mask air-purifying respirators equipped with high efficiency filters may be used:
 - a. Provided maximum airborne lead concentration outside the respirator is at or below 500 $\mu\text{g}/\text{m}^3$:
 - b. During component removal were LBP dust is not generated.
 - c. During chemical removal. Suitable air-filter cartridges for use with chemicals must be employed.
 - d. Pre-construction sealing of openings and penetrations to the work areas with plastic sheeting.
 - e. Decontamination of removable items.
 - f. During removal of lead-containing materials.
 - g. During all cleanup and wipe down of area.
 - h. During final wipe down of work space
 - i. Loading lead-containing drums onto truck for transportation and unloading bags at approved landfill.
3. A full facepiece, powered air-purifying respirator equipped with HEPA filters will be required under the following conditions:
 - a. At any time that air monitoring levels indicate that lead concentrations are at least 500 $\mu\text{g}/\text{m}^3$ or greater.
 - b. Any situation where gross contamination has occurred, air sampling indicates airborne lead levels have exceeded 500 $\mu\text{g}/\text{m}^3$.
4. All Employees and visitors will wear appropriate filters for the work at hand. If chemicals are used, follow manufacturer guidelines for appropriate personal and respiratory protection.

B. Bilingual Worker protection procedures for chemical removal(Posted in both English and Spanish):

1. Each worker and authorized visitor shall, upon entering the job site: put on a respirator and don two suits of protective clothing before entering the Equipment Room or the Work area. Clothing that is appropriate for weather and temperature conditions is worn under the protective clothing.
2. Each time before leaving the work area, all workers and authorized visitors shall remove gross contamination from the protective clothing using a HEPA vacuum, then remove the top protective suit and place within a labeled hazardous material 6-mil plastic bag which is within the work area. Personnel will then proceed to the Equipment Room and remove remaining protective clothing except respirators by

carefully rolling down the garment to reduce exposure to dust. Personnel will then proceed through to the washroom and clean the outside of the respirator with a wet disposable towel; remove the respirator; and thoroughly wet wipe themselves

3. Following wet wiping and drying off, each Worker shall proceed directly to the outside area at the end of each day's Work, or before eating, smoking, or drinking.
4. Before re-entering the Work Area each Worker and authorized visitor shall put on a clean respirator and shall dress in clean protective clothing as described above.
5. Contaminated work footwear shall be stored in the Equipment Room or Work area in a labeled 6-mil bag when not in use in the Work area, until they are appropriately decontaminated. Upon completion of lead abatement, dispose of footwear as contaminated waste unless they can be appropriately decontaminated. All porous type footwear will be disposed of as contaminated waste.
6. Workers removing waste containers from the equipment decontamination enclosure shall enter the holding area from outside wearing a respirator and dressed in clean disposable coveralls. No worker shall use this system as a means to leave or enter the washroom or the Work area.
7. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work area.
8. Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of lead-coated or contaminated materials prior to commencing actual lead abatement and until final cleanup is completed.

C. Bilingual Worker protection procedures for component removal(Posted in both English and Spanish):

1. Each worker and authorized visitor shall, upon entering the job site: put on a respirator and don one suit of protective clothing before entering the Equipment Room or the Work area. Clothing that is appropriate for weather and temperature conditions is worn under the protective clothing.
2. Each time before leaving the work area, all workers and authorized visitors shall remove gross contamination from the protective clothing using a HEPA vacuum, then remove protective clothing except respirators by carefully rolling down the garment to reduce exposure to dust and place within a labeled hazardous material 6-mil plastic bag which is within the work area. Personnel will then proceed through to the washroom and clean the outside of the respirator with a wet disposable towel; remove the respirator; and thoroughly wet wipe themselves
3. Following wet wiping, each Worker shall proceed directly to the outside area at the end of each day's Work, or before eating, smoking, or drinking.
4. Before re-entering the Work Area each Worker and authorized visitor shall put on a clean respirator and shall dress in clean protective clothing as described above.

5. Contaminated work footwear shall be stored in the Equipment Room or Work area in a labeled 6-mil bag when not in use in the Work area, until they are appropriately decontaminated. Upon completion of lead work, dispose of footwear as contaminated waste unless they can be appropriately decontaminated. All porous type footwear will be disposed of as contaminated waste.
6. Workers removing waste containers from the equipment decontamination enclosure shall enter the holding area from outside wearing a respirator and dressed in clean disposable coveralls. No worker shall use this system as a means to leave or enter the washroom or the Work area.
7. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work area.
8. Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of lead-coated or contaminated materials prior to commencing actual lead abatement and until final cleanup is completed.

1.7 SUPERINTENDENT, FOREMAN, CRAFTSMAN:

Comply with Section 02092HM, Part 1.7, Superintendent, Foreman, Craftsman.

PART 2 - MATERIAL AND EQUIPMENT

Comply with Section 02092HM, Part 2. It shall be modified in the following particulars only.

2.1 MATERIALS:

- A. **Chemical removers:** Shall not contain methylene chloride. Chemical removers shall be compatible with and not harm the substrate they are applied to. Chemical removers used on masonry surfaces shall contain anti-stain formulation that inhibits the discoloration of stone, granite, brick, and other masonry construction. Chemical removers used on interior surfaces shall not raise or discolor the surface being abated. Chemical removers requiring neutralizers shall not be used on interior surfaces.
- B. **Chemical stripping agent neutralizers:** May be used on exterior surfaces only. Neutralizers shall be compatible with and not harm the substrate to which they are applied. Neutralizers shall be compatible with the stripping agent that has been applied to the surface substrate.

PART 3 - EXECUTION

3.1 PREPARATION:

A. For exterior work, the abatement contractor shall prepare the area as follows:

1. **Doors and Windows:** Doors and windows on the side of the building upon which a dust-generating method is being used, and on the same floor and all floors below, must be covered with 6-mil thick polyethylene sheeting.
2. **Plants and ground:** The ground and any plants or shrubs in the area in which exterior abatement is occurring shall be covered with two layers of 6-mil plastic in a tarp-like fashion, sufficiently bonded together to form a single layer, and weighted at all edges so as to prevent blowing. A single 12-mil plastic sheet may be substituted. Such covering shall cover from the side of the structure to a point at least eight feet away from the structure for every story in height (10'). The covering shall be taped or otherwise attached to the structure.
3. Ground covers shall always be placed in manner that traps all debris and water. This is best accomplished by elevating the edges.
4. The plastic ground cover shall be properly disposed of and not re-used.
5. **Special Areas:** Any abatement project being performed on any structure other than a building shall be arranged, equipped, and operated in a manner which will eliminated the possibility of lead contaminates or lead contaminated materials escaping from the work.
6. **Maintain Barriers:** The abatement subcontractor shall maintain polyethylene barriers and a clean area as long as needed for the safe and proper completion of the work. Any openings or tears in the work area barriers shall be corrected by the abatement subcontractor at the beginning of each work day and as necessary during the workday with such openings and barriers in place and acceptable to the owner's consultant.
7. **Prior to barrier removal:** Barriers shall not be removed until the work areas are thoroughly cleaned and the area approved by the consultant. All debris must be bagged and removed from work areas, and the lead surface wipe samples must have passed final clearance test, in accordance with provisions detailed in the barrier removal.
8. **Use of mini-isolation chamber:** At the Owner's and consultant's approval, the Abatement Subcontractor may utilize a portable mini-isolation chamber to create an isolated work area around single components to be removed. This chamber shall still be equipped with an adjacent clean room, and become an isolated work area sealed at all seams to where it is attached to adjacent surfaces. It shall also satisfy all requirements for a work area and satisfy all clearance criteria, as identified in this section and local law.

9. **Signs:** Prior to the preparation of the dwelling for abatement, the abatement subcontractor shall place warning signs immediately outside all entrances and exits to the dwelling, warning that abatement work is being conducted in the vicinity. The signs shall be at least 20" x 14" and read

DANGER
LEAD WORK AREA
MAY DAMAGE FERTILITY OR THE UNBORN CHILD
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM
DO NOT EAT, DRINK OR SMOKE IN THIS AREA

10. Signs shall be in bold lettering with lettering not smaller than two inches tall.
11. Construct and maintain suitable polyethylene barriers within the building to isolate the exterior work area from the interior of the building. Make every effort to maintain a distance of 25 feet from the barrier tape to the closet scheduled point of work within the Work area.
12. Maintain emergency and fire exits from Work Areas.
- B. For interior work, the abatement contractor shall prepare the area as follows:
1. **HVAC shut down:** Shut down or isolate heating, cooling, ventilation air systems within the control area to prevent contamination and dust dispersal to other areas of the structure. During the Work, vents within the immediate removal area (to a distance of ten feet from the affected surface) shall be sealed with tape and plastic sheeting and as shown on plans.
 2. **Loose equipment:** Do not begin Work until immediate work area is free of loose equipment.
 3. **Pre-clean:** Pre-clean fixed objects within the proposed Work Areas, using HEPA filtered vacuum equipment and/or protect occupants' belongings by covering with one layer of six mil polyethylene and have joints taped. All debris gathered during this clean up shall be disposed of properly. In addition, any loose paint or paint bearing debris found in the buildings are to be assumed hazardous and packaged and disposed of properly. The amount of the materials should be estimated during the pre-bid walk through.
 4. **Use of a mini-containment:** At the Owner's and consultant's approval, the Abatement Subcontractor may utilize a portable mini-isolation chamber to create an isolated work area around single components to be removed. This chamber shall still be equipped with an adjacent clean room, and become an isolated work area sealed at all seams to where it is attached to adjacent surfaces. It shall also satisfy all requirements for a work area and satisfy all clearance criteria, as identified in this section and local law.
 5. **Walls and floors:** Lay a single layer of six-mil thick polyethylene sheeting below impacted area. Sheeting will extend to a distance of six feet beyond the affected

area in all directions not bounded by walls or non-moveable partitions. Walls directly below the affected surface will be covered with six-mil thick polyethylene sheeting to extend 4 feet in either direction beyond the affected area.

6. **Surrounding barrier:** A barrier shall be erected at room entrances, which shall be sealed with a single layer of six-mil thick polyethylene sheeting and a suitable 2 stage decontamination unit, shall be erected and attached to barrier sheeting.
7. **Maintaining barriers:** The abatement subcontractor shall maintain polyethylene barriers and a clean area as long as needed for the safe and proper completion of the work. Any openings or tears in the work area barriers shall be corrected by the abatement subcontractor at the beginning of each work day and as necessary during the workday with such openings and barriers in place and acceptable to the consultant.
8. **Removal of barriers:** Barriers shall not be removed until the work areas are thoroughly cleaned, and the area approved by the consultant. All debris must be bagged and removed from work areas, and the lead surface wipe samples must have passed final clearance test, in accordance with provisions detailed in the barrier removal.
9. **Signs:** Prior to the preparation of the dwelling for abatement, the abatement subcontractor shall place warning signs immediately outside all entrances and exits to the dwelling, warning that abatement work is being conducted in the vicinity. The signs shall be at least 20" x 14" and read:

DANGER

LEAD WORK AREA

MAY DAMAGE FERTILITY OR THE UNBORN CHILD

CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM

DO NOT EAT, DRINK OR SMOKE IN THIS AREA

10. Signs shall be in bold lettering with lettering not smaller than two inches tall.
11. Maintain emergency and fire exits from Work Areas.
12. Construct and maintain suitable polyethylene barriers within the building to isolate the exterior work area from the interior of the building. Make every effort to maintain a distance of 10 feet from the barrier tape to the closet scheduled point of work within the Work area.
13. Maintain emergency and fire exits from Work Areas.

C. Decontamination Facilities:

Build suitable decontamination facilities described herein, as previously submitted for review, before start of construction.

In all cases, access between contaminated and uncontaminated rooms or areas shall be through an air lock previously defined. Passage between any two rooms within the decontamination facility shall be through an access doorway.

1. Locate decontamination facility as close in proximity to the Work area as possible.
2. Construct a two-stage worker decontamination enclosure system consisting of three totally separate areas to conform to standard Plans bound herein and as follows.
 - a. A shower area with two access ways, one to the equipment room and one to the outside area. Plastic, if used, on shower room and adjoining equipment rooms shall be opaque.
 - b. The shower area shall contain at least one room with water for wet wiping of hands and face. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind.
3. If needed, provide or construct an equipment decontamination area consisting of two totally separate areas as follows:
 - a. A washroom, with access to a designated area of the Work area and access to the holding area.
 - b. A holding area with access to the washroom and access to an uncontaminated area.
4. The entrances and exits and the decontamination facility name of both the shower and equipment decontamination room will be appropriately labeled and identifiable from a distance of 25 feet.

3.2 LEAD REMOVAL:

- A. Prepare site per paragraph 3.1.
- B. Remove and clean or clean and wrap objects, such as lights and other items not previously sealed off that may interfere with lead removal. Use HEPA vacuum equipment and wet methods during fixture removal to reduce lead dispersal. Wrap removed items in plastic and store for reinstallation upon completion of testing procedures.
- C. Protect all fixtures, grills, lockers and other non-removable equipment from water. Also, protect painted surfaces and flooring.
- D. **Lead-Based Paint Removal (component):**
 1. Care must be taken so that leaded materials are neither burned, nor dusted, nor result in further exposure to workers, residents, children, or observers.

2. Care shall be taken to avoid damage to adjacent areas during the removal of components to be replaced. The Abatement Subcontractor shall run a utility knife around the edge (score) of the abatement substrate and the adjacent (non-abated) substrate to cut any bonding between the substrates and thereby eliminate damage.
3. If components to be removed contain gross areas of loose or peeling paint, these areas shall be wet scrapped or HEPA vacuumed prior to removal. The paint chips shall be contained either in the HEPA vacuum or in a separate 6-mil polyethylene bag. Temporary encapsulants used expressly for this purpose are also acceptable.
4. Components that are removed for replacement shall be temporarily wrapped for transport to the dumpster. Care shall be taken when transporting leaded components from the work area to the dumpster. All leaded components shall be sealed in airtight containers from transport to the dumpsite. Once the materials have been transferred, it shall be removed from the container and placed in the lined dumpster.
5. A pry device shall be utilized to carefully remove exterior materials. Remove each component and carefully lower to the ground. Care shall be taken to preserve the integrity of the structural elements of the materials. Continuously control dust utilizing an airless spray or apply a light application of water. Containerization shall be accomplished by removing or flattening all nails to prevent punctures or tearing.

E. Lead-Based Paint Removal (Chemically):

1. Use only chemical removers and neutralizers as outlined in Part 2.1.A & B above.
2. Protect all surrounding non-removal surfaces from chemical exposure.
3. Ensure that the chemical is applied and removed in strict accordance with manufacture instructions.
4. Ensure that damaging of the substrate material is prevented while chemical is being removed from the surface. If damage occurs, contractor will prep the material accordingly for a smooth pre-finishing surface.
5. Ensure that any chemical that falls or loses contact with the removal surface is immediately wiped up.
6. Place all hazardous waste immediately upon removal in appropriate containers per manufacturers and regulatory guidelines.

3.3 CLEANUP AND CLEARANCE MONITORING:

Comply with Section 02092HM, Part 3.3, for Cleanup and Clearance Monitoring.

3.4 DISPOSAL OF LEAD-COATED MATERIALS AND LEAD-CONTAMINATED WASTE:

Comply with Section 02092HM, Part 3.4, for Disposal of Lead-Coated Materials and Lead-Contaminated Waste.

3.5 REESTABLISHMENT OF OBJECTS AND SYSTEMS:

Comply with Section 02092HM, Part 3.5, for Reestablishment of Objects and Systems.

END OF SECTION

**APPENDIX A – LIMITED ASBESTOS INSPECTION REPORT
DATED MARCH 15, 2018**



Industrial Hygiene • Air Quality • Lead & Asbestos • Training • Health & Safety

LIMITED ASBESTOS INSPECTION REPORT

Conducted at:

LAKELAND ELEMENTARY SCHOOL
ROOFING AND PAINTING PROJECTS
11224 BOMBARDIER AVENUE
NORWALK, CALIFORNIA 90650

Prepared for:

MR. BRENT GRIFFEN
DIRECTOR OF MAINTENANCE AND OPERATIONS AND CUSTODIAL SERVICES
LITTLE LAKE CITY SCHOOL DISTRICT
10515 SOUTH PIONEER BOULEVARD
SANTA FE SPRINGS, CALIFORNIA 90670

Prepared by:

EXECUTIVE ENVIRONMENTAL
310 EAST FOOTHILL BOULEVARD, SUITE 200
ARCADIA, CALIFORNIA 91006

Project Number EE 18-Z0187-0028
March 15, 2018

Report assembled by:

Yesenia G. Galeana
Technical Report Writer
Executive Environmental

Report generated/reviewed by:

Tim Galeana, CAC # 98-2470
Senior Project Manager
Executive Environmental

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APPENDICES

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APPENDIX B – SITE DRAWING

LIMITED ASBESTOS INSPECTION REPORT

Project Number: EE 18-Z0187-0028

Client: Little Lake City School District
10515 South Pioneer Boulevard
Santa Fe Springs, California 90670

Site Location: Lakeland Elementary School
Roofing and Painting Projects
11224 Bombardier Avenue
Norwalk, California 90650

Site Use: School Property

Contact Person: Mr. Brent Griffen
Director of M&O and Custodial Services
Phone: (562) 868-8241

Inspection Date: February 21 thru 23, 26 and 27, 2018

Inspected By: Mr. George Valverde
Certified Site Surveillance technician, # 10-4615

Mr. Juan A. Lopez
Industrial Hygienist

Report Assembled By: Ms. Yesenia G. Galeana
Technical Report Writer

Report Generated/Reviewed By: Mr. Tim Galeana
Certified Asbestos Consultant, # 98-2470

I. EXECUTIVE SUMMARY

Executive Environmental (EE) provided the services of a Certified Asbestos Consultant, Certified Site Surveillance Technician and an Industrial Hygienist to conduct a limited asbestos inspection of the permanent buildings, portables and covered walkways at Lakeland Elementary School, located at 11224 Bombardier Avenue, Norwalk, California. The inspection was conducted as a precursor to the upcoming exterior painting and roofing projects. Asbestos-Containing Materials (ACM's) were identified during this inspection. *This is considered a limited inspection. The inspection was limited to materials on the permanent buildings, portables and covered walkways that may be impacted by the exterior painting and/or roofing projects as directed by the client.*

II. SAMPLING METHODOLOGY

A visual inspection of the permanent buildings, portables and covered walkways was conducted prior to the collection of any bulk samples. The visual inspection was conducted to identify and record the location and condition of the materials to be sampled. Following the visual inspection, bulk material samples of the identified suspect asbestos-containing building materials were collected. The materials were categorized into homogeneous groupings, and each sample was assigned a unique sample number and placed into a sealed container.

Upon completion of the bulk sample collection, a chain of custody was prepared, and the samples were delivered to the laboratory for analysis. LA Testing of South Pasadena, California analyzed the samples using Polarized Light Microscopy (PLM). LA Testing of South Pasadena is an accredited participant in the National Voluntary Laboratory Accreditation Program (NVLAP), No. 200232-0, and is also accredited by the American Industrial Hygiene Association (AIHA), No. 102814. The principles described in the current Environmental Protection Agency (EPA) 600 method were used in the preparation and analysis of the bulk samples.

III. SAMPLE ANALYSIS

Two hundred and forty-six (246) suspect asbestos-containing material samples were collected during this inspection. The laboratory analysis results are listed in the following table. Materials determined not to contain asbestos are listed as "No Asbestos Detected" (NAD).

Any material found to contain more than 1% of a known asbestos substance is considered an asbestos-containing material (ACM). Materials falling within this category are controlled and must be handled in accordance with the California Occupational Safety & Health Administration (Cal/OSHA), EPA, and South Coast Air Quality Management District (SCAQMD) regulations.

In addition, materials which are characterized as non-ACM by EPA or other local regulatory agencies may fall within the regulatory standards of Cal/OSHA, which further regulates any materials found to contain more than 1/10 of 1%, but 1% or less, of a known asbestos substance as asbestos-containing construction materials (ACCMs). Impacting or handling ACCMs requires special employer registration, documentation, training, and personal protective equipment. When a material is to be impacted, the National Emission Standards for Hazardous Air Pollutants (NESHAPs) regulations require further testing for materials that fall within this category.

The PLM analytical protocol requires each layer of the sample to be analyzed separately. The quantity of analyses will vary based on the number of layers in a sample and whether a "positive stop" is employed. When one sample of a homogeneous area is positive, the remainder of the samples need not be analyzed, because the entire homogeneous area must be considered positive.

**Sampling results begin on the next page.
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POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS DATA

Lakeland Elementary School
11224 Bombardier Avenue
Norwalk, California 90650

Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Covered Walkways						
1	Rolled roofing material (core sample)	Covered Walkway No. 1: Rooftop	450 Square Feet	1802210028JL-01	North	NAD ^A
				1802210028JL-02	Center	NAD
				1802210028JL-03	South	NAD
2	Roof penetration mastic	Covered Walkway No. 1: Rooftop at seams, patches and penetrations	25 Square Feet	1802210028JL-04	South	NAD
				1802210028JL-05	Center	10% Chrysotile
3	Rolled roofing material (core sample)	Covered Walkway No. 2: Rooftop	2,500 Square Feet	1802210028JL-06	North	5% Chrysotile
				1802210028JL-07	South	NAD
				1802210028JL-08	Center	NAD
4	Roof penetration mastic	Covered Walkway No. 2: Rooftop at seams, patches and penetrations	65 Square Feet	1802210028JL-09	North	NAD
				1802210028JL-10	North	NAD
				1802210028JL-11	Center	5% Chrysotile
5	Rolled roofing material (core sample)	Covered Walkway No. 3: Rooftop	750 Square Feet	1802210028JL-12	South	NAD
				1802210028JL-13	South	NAD
				1802210028JL-14	Center	NAD
6	Roof penetration mastic	Covered Walkway No. 3: Rooftop at seams, patches and penetrations	15 Square Feet	1802210028JL-15	North	NAD
				1802210028JL-16	North	10% Chrysotile
				1802210028JL-17	Center	10% Chrysotile
				1802210028JL-18	South	NAD

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^A NAD – No Asbestos Detected

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Limited Asbestos Inspection Report

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Covered Walkways						
7	Rolled roofing material (core sample)	Covered Walkway No. 4: Rooftop	1,900 Square Feet	1802210028JL-19	North	NAD ^B
				1802210028JL-20	Center	NAD
				1802210028JL-21	South	NAD
8	Roof penetration mastic	Covered Walkway No. 4: Rooftop at seams, patches and penetrations	30 Square Feet	1802210028JL-22	South	10% Chrysotile
				1802210028JL-23	Center	10% Chrysotile
				1802210028JL-24	North	5% Chrysotile
9	Rolled roofing material (core sample)	Covered Walkway No. 5: Rooftop	400 Square Feet	1802210028JL-25	North	NAD
				1802210028JL-26	Center	NAD
				1802210028JL-27	South	NAD
10	Roof penetration mastic	Covered Walkway No. 5: Rooftop at seams, patches and penetrations	10 Square Feet	1802210028JL-28	South	7% Chrysotile
				1802210028JL-29	Center	7% Chrysotile
				1802210028JL-30	North	5% Chrysotile
11	Rolled roofing material (core sample)	Covered Walkway No. 6: Rooftop	600 Square Feet	1802210028JL-31	West	NAD
				1802210028JL-32	Center	NAD
				1802210028JL-33	Southeast	NAD
12	Roof penetration mastic	Covered Walkway No. 6: Rooftop at seams, patches and penetrations	5 Square Feet	1802210028JL-34	Southeast	NAD
				1802210028JL-35	Center	NAD
				1802210028JL-36	West	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Covered Walkways						
13	Brick mortar	Covered Walkways No. 4 and 5: Wall with metal handrail	200 Square Feet	1802210028JL-37	Covered walkway No.5 South	NAD ^c
				1802210028JL-38	Covered walkway No. 4, West	NAD
				1802210028JL-39	Covered walkway No. 4, Southeast	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Portables^D						
14	Roof penetration mastic	Portable 17: Rooftop at seams, patches and penetrations	15 Square Feet	1802210028JL-40	South	NAD ^E
				1802210028JL-41	Center	NAD
				1802210028JL-42	Northeast	NAD
15	Roof penetration mastic	Portable 18: Rooftop at seams, patches and penetrations	15 Square Feet	1802210028JL-43	South	NAD
				1802210028JL-44	Center	NAD
				1802210028JL-45	Northeast	NAD
16	Roof penetration mastic	Portable 19: Rooftop at seams, patches and penetrations	5 Square Feet	1802210028JL-46	South	NAD
				1802210028JL-47	Center	NAD
				1802210028JL-48	North	NAD
17	Roof penetration mastic	Portable 20: Rooftop at seams, patches and penetrations	25 Square Feet	1802210028JL-49	South	NAD
				1802210028JL-50	Center	NAD
				1802210028JL-51	North	NAD
18	Roof penetration mastic	Portable 21: Rooftop at seams, patches and penetrations	25 Square Feet	1802210028JL-52	South	NAD
				1802210028JL-53	Center	NAD
				1802210028JL-54	North	NAD
19	Roof penetration mastic	Portable 22: Rooftop at seams, patches and penetrations	15 Square Feet	1802210028JL-55	South	NAD
				1802210028JL-56	Center	NAD
				1802210028JL-57	North	NAD
20	Roof penetration mastic	Portable 23: Rooftop at seams, patches and penetrations	15 Square Feet	1802210028JL-58	West	NAD
				1802210028JL-59	Center	NAD
				1802210028JL-60	East	NAD

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^D NOTE: Portables 17 thru 23: 1) Metal rooftop. 2) Exterior wood walls.

^E NAD – No Asbestos Detected

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building G						
21	Rolled roofing material (core sample)	Upper rooftop	3,500 Square Feet	1802220028JL-61	West	NAD ^F
				1802220028JL-62	Center	NAD
				1802220028JL-63	East	NAD
22	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	10 Square Feet	1802220028JL-64	East	NAD
				1802220028JL-65	Center	NAD
				1802220028JL-66	West	NAD
23	Rolled roofing material (core sample)	Lower rooftop	1,200 Square Feet	1802220028JL-67	West	NAD
				1802220028JL-68	Center	NAD
				1802220028JL-69	East	NAD
24	Roof penetration mastic	Lower roof top at seams, jacks, patches, HVAC duct base and penetrations	40 Square Feet	1802220028JL-70	East	NAD
				1802220028JL-71	Center	5% Chrysotile
25	Window putty	Exterior side of window frames, south side of building	185 Linear Feet	1802220028JL-72	West	NAD
				1802220028JL-73	West	NAD
				1802220028JL-74	Center	NAD
26	Brick mortar	Throughout exterior perimeter walls	600 Square Feet	1802220028JL-75	East	NAD
				1802220028JL-76	Southwest	NAD
				1802220028JL-77	Southeast	NAD
27	Stucco	North exterior at base of wall	100 Square Feet	1802210028JL-78	East	NAD
				1802210028JL-79	Northwest	NAD
				1802210028JL-80	Northwest	NAD
				1802210028JL-81	North	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building F						
28	Rolled roofing material (core sample)	Upper rooftop	3,500 Square Feet	1802220028JL-82	West	NAD ^g
				1802220028JL-83	Center	NAD
				1802220028JL-84	East	NAD
29	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	15 Square Feet	1802220028JL-85	East	NAD
				1802220028JL-86	Center	5% Chrysotile
				1802220028JL-87	West	5% Chrysotile
30	HVAC duct mastic	Lower rooftop at HVAC system ducts	30 Square Feet	1802220028JL-88	Southwest	NAD
				1802220028JL-89	Center	NAD
				1802220028JL-90	Southeast	NAD
31	Rolled roofing material (core sample)	Lower rooftop	1,200 Square Feet	1802220028JL-91	West	NAD
				1802220028JL-92	Center	NAD
				1802220028JL-93	East	NAD
32	Window putty	Exterior side of window frames, south side of building	185 Linear Feet	1802220028JL-94	West	NAD
				1802220028JL-95	Center	NAD
				1802220028JL-96	East	NAD
33	White roofing mastic	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	30 Square Feet	1802220028JL-97	West	NAD
				1802220028JL-98	Center	NAD
				1802220028JL-99	East	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building F						
34	Brick mortar	Throughout exterior perimeter walls	600 Square Feet	1802220028JL-100	Southwest	NAD ^H
				1802220028JL-101	Southeast	NAD
				1802220028JL-102	East	NAD
35	Roof penetration mastic	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	40 Square Feet	1802220028JL-103	East	NAD
				1802220028JL-104	Center	NAD
				1802220028JL-105	West	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building E						
36	Rolled roofing material (core sample)	Upper rooftop	3,500 Square Feet	1802220028JL-106	West	NAD ¹
				1802220028JL-107	Center	NAD
				1802220028JL-108	East	NAD
37	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	10 Square Feet	1802220028JL-109	East	NAD
				1802220028JL-110	Center	5% Chrysotile
				1802220028JL-111	West	NAD
38	Window putty	Exterior side of window frames, south side of building	185 Linear Feet	1802220028JL-112	West	NAD
				1802220028JL-113	Center	NAD
				1802220028JL-114	East	NAD
39	Rolled roofing material (core sample)	Lower rooftop	1,200 Square Feet	1802230028JL-115	West	NAD
				1802230028JL-116	Center	NAD
				1802230028JL-117	East	NAD
				1802230028JL-118	East	NAD
40	Roof penetration mastic	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	40 Square Feet	1802230028JL-119	Center	10% Chrysotile
				1802230028JL-120	West	NAD
				1802230028JL-121	Southeast	NAD
41	Brick mortar	Throughout exterior perimeter walls	600 Square Feet	1802230028JL-122	Southwest	NAD
				1802230028JL-123	West	NAD
				1802230028JL-124	North	NAD
42	Stucco	North exterior at base of wall	100 Square Feet	1802230028JL-125	Northwest	NAD
				1802230028JL-126	West	NAD

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1 NAD – No Asbestos Detected

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building C						
43	Rolled roofing material (core sample)	Upper rooftop	3,500 Square Feet	1802230028JL-127	West	NAD ^J
				1802230028JL-128	Center	NAD
				1802230028JL-129	East	NAD
44	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	50 Square Feet	1802230028JL-130	East	NAD
				1802230028JL-131	Center	10% Chrysotile
				1802230028JL-132	West	5% Chrysotile
45	HVAC duct mastic	Lower rooftop at HVAC system ducts	30 Square Feet	1802230028JL-133	Center	NAD
				1802230028JL-134	Center	NAD
				1802230028JL-135	Center	NAD
46	Rolled roofing material (core sample)	Lower rooftop	1,200 Square Feet	1802230028JL-136	West	NAD
				1802230028JL-137	Center	NAD
				1802230028JL-138	East	NAD
47	Roof penetration mastic	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	60 Square Feet	1802230028JL-139	East	10% Chrysotile
				1802230028JL-140	Center	NAD
				1802230028JL-141	West	3% Chrysotile
48	White roofing mastic	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	40 Square Feet	1802230028JL-142	West	NAD
				1802230028JL-143	Center	NAD
				1802230028JL-144	East	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building C						
49	Brick mortar	Throughout exterior perimeter walls	600 Square Feet	1802230028JL-145	Southeast	NAD ^K
				1802230028JL-146	Southwest	NAD
				1802230028JL-147	West	NAD
50	Window putty	Exterior side of window frames, south side of building	10 Square Feet	1802230028JL-148	West	NAD
				1802230028JL-149	Center	NAD
				1802230028JL-150	East	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building D						
51	Rolled roofing material (core sample)	Upper rooftop	3,500 Square Feet	1802260028JL-151	West	NAD ^L
				1802260028JL-152	Center	NAD
				1802260028JL-153	East	NAD
52	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	10 Square Feet	1802260028JL-154	East	10% Chrysotile
				1802260028JL-155	Center	10% Chrysotile
				1802260028JL-156	West	NAD
53	Window putty	Exterior side of window frames, south side of building	185 Linear Feet	1802260028JL-157	Southwest	NAD
				1802260028JL-158	Center	NAD
				1802260028JL-159	Southeast	NAD
54	Rolled roofing material (core sample)	Lower rooftop	1,200 Square Feet	1802260028JL-160	West	NAD
				1802260028JL-161	Center	NAD
				1802260028JL-162	East	NAD
55	Roof penetration mastic	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	50 Square Feet	1802260028JL-163	East	10% Chrysotile
				1802260028JL-164	Center	10% Chrysotile
				1802260028JL-165	West	10% Chrysotile
56	Brick mortar	Throughout exterior perimeter walls	600 Square Feet	1802260028JL-166	Southeast	NAD
				1802260028JL-167	Southwest	NAD
				1802260028JL-168	West	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building K						
57	Rolled roofing material (core sample)	Upper rooftop	3,500 Square Feet	1802260028JL-169	West	NAD ^M
				1802260028JL-170	Center	NAD
				1802260028JL-171	East	NAD
58	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	10 Square Feet	1802260028JL-172	East	10% Chrysotile
				1802260028JL-173	Center	NAD
				1802260028JL-174	West	NAD
59	Window putty	Exterior side of window frames, south side of building	185 Linear Feet	1802260028JL-175	Southwest	NAD
				1802260028JL-176	Center	NAD
				1802260028JL-177	Southeast	NAD
60	Rolled roofing material (core sample)	Lower rooftop	1,200 Square Feet	1802260028JL-178	Southwest	NAD
				1802260028JL-179	Center	NAD
				1802260028JL-180	Southeast	NAD
61	Roof penetration mastic	Lower rooftop at seams, jacks, patches, HVAC duct base and penetrations	50 Square Feet	1802260028JL-181	Southeast	10% Chrysotile
				1802260028JL-182	Center	10% Chrysotile
				1802260028JL-183	Southwest	NAD

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Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building K						
62	Stucco	Throughout overhangs and eaves	900 Square Feet	1802260028JL-184	Overhang, east	<1% Chrysotile ^N 1000-Pt. Ct.: <0.1% chrysotile
				1802260028JL-185	Overhang, east	<1% Chrysotile 1000-Pt. Ct.: <0.1% chrysotile
				1802260028JL-186	Overhang, west	<1% Chrysotile 1000-Pt. Ct.: <0.1% chrysotile
63	Brick mortar	Throughout exterior perimeter walls	600 Square Feet	1802260028JL-187	Southeast	NAD ^o
				1802260028JL-188	Southwest	NAD
				1802260028JL-189	Southwest	NAD

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^N Samples 184 thru 186 that had a result of less than 1% chrysotile via PLM analysis were further analyzed via the 1000-point count gravimetric method. The analysis by 1000-point count analysis revealed that under Cal/OSHA regulations the stucco is a non-regulated material.

^o NAD – No Asbestos Detected

POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS DATA

Lakeland Elementary School
11224 Bombardier Avenue
Norwalk, California 90650

Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building J						
64	Rolled roofing material (core sample)	Upper rooftop	3,500 Square Feet	1802260028JL-190	West	NAD ^P
				1802260028JL-191	Center	NAD
				1802260028JL-192	East	NAD
65	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	10 Square Feet	1802260028JL-193	East	NAD
				1802260028JL-194	Center	NAD
				1802260028JL-195	West	NAD
66	Window putty	Exterior side of window frames, south side of building	185 Linear Feet	1802270028JL-196	Southwest	NAD
				1802270028JL-197	Center	NAD
				1802270028JL-198	Southeast	<1% Chrysotile ^Q 1000-Pt. Ct.: <0.1% chrysotile
67	Rolled roofing material (core sample)	Lower rooftop	1,200 Square Feet	1802270028JL-199	West	NAD
				1802270028JL-200	Center	NAD
				1802270028JL-201	East	NAD
68	Roof penetration mastic	Lower rooftop at seams, jacks patches and penetrations	40 Square Feet	1802270028JL-202	East	NAD
				1802270028JL-203	Center	NAD
				1802270028JL-204	West	NAD

Note: This table must be used in conjunction with the entire report. This document is not to be used for contract bidding and is intended to be used to identify asbestos-containing materials and their locations only.

**Sampling results continues on the next page.
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^P NAD – No Asbestos Detected

^Q Sample 198 that had a result of less than 1% chrysotile via PLM analysis were further analyzed via the 1000-point count gravimetric method. The analysis by 1000-point count analysis revealed that under Cal/OSHA regulations the window putty is a non-regulated material.

POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS DATA

Lakeland Elementary School
11224 Bombardier Avenue
Norwalk, California 90650

Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building J						
69	Brick mortar	Throughout exterior perimeter walls	600 Square Feet	1802270028JL-205	East	NAD ^R
				1802270028JL-206	Southeast	NAD
				1802270028JL-207	Southwest	NAD
70	Stucco	Throughout overhangs and eaves	900 Square Feet	1802270028JL-208	East	<1% Chrysotile ^S 1000-Pt. Ct.: <0.1% chrysotile
				1802270028JL-209	Southeast	NAD
				1802270028JL-210	Southwest	NAD

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**Sampling results continues on the next page.
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^R NAD – No Asbestos Detected

^S Sample 208 that had a result of less than 1% chrysotile via PLM analysis were further analyzed via the 1000-point count gravimetric method. The analysis by 1000-point count analysis revealed that under Cal/OSHA regulations the stucco is a non-regulated material.

POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS DATA

Lakeland Elementary School
11224 Bombardier Avenue
Norwalk, California 90650

Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Building B						
71	Rolled roofing material (core sample)	Rooftop	4,500 Square Feet	1802270028JL-211	West	NAD ^T
				1802270028JL-212	Center	NAD
				1802270028JL-213	East	NAD
72	Roof penetration mastic	Rooftop at seams, jacks, patches, HVAC duct base and penetrations	50 Square Feet	1802270028JL-214	East	4% Chrysotile
				1802270028JL-215	Center	6% Chrysotile
				1802270028JL-216	West	NAD
73	Brick mortar	Throughout exterior perimeter walls	550 Square Feet	1802270028JL-217	Southwest	NAD
				1802270028JL-218	West	NAD
				1802270028JL-219	Northwest	NAD

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POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS DATA

Lakeland Elementary School
11224 Bombardier Avenue
Norwalk, California 90650

Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Administration Building						
74	Rolled roofing material (core sample)	Throughout roof top	5,600 Square Feet	1802270028JL-220	South	NAD ^u
				1802270028JL-221	Center	NAD
				1802270028JL-222	North	NAD
75	Roof penetration mastic	Roof top at seams, jacks patches and penetrations	10 Square Feet	1802270028JL-223	North	7% Chrysotile
				1802270028JL-224	Northeast	6% Chrysotile
				1802270028JL-225	South	10% Chrysotile
76	Brick mortar	Throughout exterior perimeter walls	460 Square Feet	1802270028JL-226	South	NAD
				1802270028JL-227	East	NAD
				1802270028JL-228	North	NAD

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^u NAD – No Asbestos Detected

Executive Environmental
Limited Asbestos Inspection Report

Lakeland ES – Roofing and Painting Project
Project Number EE 18-Z0187-0028
March 15, 2018

POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS DATA

Lakeland Elementary School
11224 Bombardier Avenue
Norwalk, California 90650

Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Multi-Purpose Building						
77	Rolled roofing material (core sample)	Upper rooftop	4,200 Square Feet	1802270028JL-229	Southwest	NAD ^v
				1802270028JL-230	Center	NAD
				1802270028JL-231	Northeast	NAD
78	Roof penetration mastic	Upper rooftop at seams, jacks patches and penetrations	25 Square Feet	1802270028JL-232	Northeast	6% Chrysotile
				1802270028JL-233	Center	NAD
				1802270028JL-234	Southwest	NAD
79	Stucco	Throughout overhangs and eaves	500 Square Feet	1802270028JL-235	East	Layer A: <1% Chrysotile ^w
						1000-Pt. Ct.: <0.1% chrysotile
						Layer B: NAD
				1802270028JL-236	Southeast	Layer A: <1% Chrysotile
						1000-Pt. Ct.: <0.1% chrysotile
						Layer B: NAD
1802270028JL-237	South	Layer A: <1% Chrysotile				
		1000-Pt. Ct.: <0.1% chrysotile				
						Layer B: NAD

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**Sampling results continues on the next page.
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^v NAD – No Asbestos Detected

^w Samples 235 thru 237 that had a result of less than 1% chrysotile via PLM analysis were further analyzed via the 1000-point count gravimetric method. The analysis by 1000-point count analysis revealed that under Cal/OSHA regulations the stucco is a non-regulated material.

POLARIZED LIGHT MICROSCOPY (PLM) ANALYSIS DATA

Lakeland Elementary School
11224 Bombardier Avenue
Norwalk, California 90650

Homogeneous Material #	Material Description	Material Location	Estimated Quantity	Sample Number	Sample Location	Analytical Results
Multi-Purpose Building						
80	Rolled roofing material (core sample)	Lower rooftop	1,000 Square Feet	1802270028JL-238	South	NAD ^x
				1802270028JL-239	Center	NAD
				1802270028JL-240	North	NAD
81	Roof penetration mastic	Lower rooftop at seams, jacks patches and penetrations	40 Square Feet	1802270028JL-241	North	NAD
				1802270028JL-242	Center	NAD
				1802270028JL-243	South	NAD
82	Brick mortar	Throughout exterior perimeter walls	990 Square Feet	1802270028JL-244	Southeast	NAD
				1802270028JL-245	North	NAD
				1802270028JL-246	West	NAD

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^x NAD – No Asbestos Detected

Executive Environmental
Limited Asbestos Inspection Report

Lakeland ES – Roofing and Painting Project
Project Number EE 18-Z0187-0028
March 15, 2018

IV. FINDINGS

EE conducted a limited asbestos inspection of the permanent buildings, portables and covered walkways at Lakeland Elementary School, located at 11224 Bombardier Avenue, Norwalk, California.

Eighty-two (82) homogeneous material groups were identified during the visual property inspection. Two hundred and forty-six (246) samples of suspect asbestos-containing materials were collected and delivered to LA Testing of South Pasadena, CA for analysis. The homogeneous areas and sampling results are listed on the table in Section III.

The analytical data revealed that the following material contain asbestos:

Covered Walkways:

- **Roof penetration mastic:** The roof penetration mastic located on the rooftops of covered walkways no. 1, 2, 3, 4 and 5 at jacks, seams, patches and penetrations tested positive for asbestos content.

Building G:

- **Roof penetration mastic:** The roof penetration mastic located on the lower rooftop at jacks, HVAC duct base, seams, patches and penetrations tested positive for asbestos content.

Building F:

- **Roof penetration mastic:** The roof penetration mastic located on the upper rooftop at jacks, HVAC duct base, seams, patches and penetrations tested positive for asbestos content.

Building E:

- **Roof penetration mastic:** The roof penetration mastic located on the upper and lower rooftops at jacks, HVAC duct base, seams, patches and penetrations tested positive for asbestos content.

Building C:

- **Roof penetration mastic:** The roof penetration mastic located on the upper and lower rooftops at jacks, HVAC duct base, seams, patches and penetrations tested positive for asbestos content.

Building D:

- **Roof penetration mastic:** The roof penetration mastic located on the upper and lower rooftops at jacks, HVAC duct base, seams, patches and penetrations tested positive for asbestos content.

Building K:

- Roof penetration mastic: The roof penetration mastic located on the upper and lower rooftops at jacks, HVAC duct base, seams, patches and penetrations tested positive for asbestos content.

Building B:

- Roof penetration mastic: The roof penetration mastic located on rooftop at jacks, HVAC duct base, seams, patches and penetrations tested positive for asbestos content.

Administration Building:

- Roof penetration mastic: The roof penetration mastic located on rooftop at jacks, seams, patches and penetrations tested positive for asbestos content.

Multi-Purpose Building:

- Roof penetration mastic: The roof penetration mastic located on the upper rooftop at jacks, seams, patches and penetrations tested positive for asbestos content.

V. CONCLUSIONS/RECOMMENDATIONS

Normally, asbestos-containing material found to be in good condition is not considered a hazard, unless it is disturbed. Prior to the start of any activity, such as remodeling, demolition, or renovation, that might disturb this material, a Certified Asbestos Consultant should be contracted to design and monitor the project. A California-licensed asbestos contractor should be hired to complete the asbestos abatement procedures.

If you have any questions, please call Mr. Tim Galeana at 626-441-7050. We are glad we could be of service to you.

VI. DISCLAIMER/REPORT LIMITATIONS

All reports and recommendations are based on conditions and practices observed and information made available to Executive Environmental (EE) by the client and the designated sites/facilities on the days sampling was conducted. This report does not purport to set forth all hazards, nor to indicate that other hazards do not exist. No responsibility is assumed by EE for the control or correction of conditions or practices existing at the facilities, or at any other premises surveyed by EE, for and on the behalf of the client. Services provided by EE shall be governed by the standard of practice for professional services measured at the time those services are rendered.

All information contained in this report is proprietary and limited to the scope of services, parameters of the analytical methods used and the conditions present at the time of this inspection. Any references to quantities are considered estimates and are not to be construed as actual.

APPENDIX A – LABORATORY ANALYSIS REPORT



LA Testing

520 Mission Street South Pasadena, CA 91030

Tel/Fax: (323) 254-9960 / (323) 254-9962

http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321804502

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Attention: Yesenia Galeana
Executive Environmental Services Corp.
310 East Foothill Blvd.
Suite 200
Arcadia, CA 91006

Phone: (626) 441-7050

Fax: (626) 441-0016

Received Date: 02/22/2018 8:00 AM

Analysis Date: 02/26/2018 - 02/27/2018

Collected Date: 02/21/2018

Project: 18-Z0187-0028 | Sampler: Juan Lopez (18-Z0187-0028)

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802210028JL-01-A 321804502-0001	Gray/Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-01-B 321804502-0001A	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-01-C 321804502-0001B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-01-D 321804502-0001C	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-01-E 321804502-0001D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-02-A 321804502-0002	Gray/Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-02-B 321804502-0002A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-02-C 321804502-0002B	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-02-D 321804502-0002C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-02-E 321804502-0002D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-03-A 321804502-0003	Gray/Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-03-B 321804502-0003A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-03-C 321804502-0003B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-03-D 321804502-0003C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-04 321804502-0004 QC	Gray/Black Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (Other)	None Detected
1802210028JL-05 321804502-0005 QC	Gray/Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile

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LA Testing

520 Mission Street South Pasadena, CA 91030

Tel/Fax: (323) 254-9960 / (323) 254-9982

http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321804502

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802210028JL-06 321804502-0006 QC	Gray/Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802210028JL-07-A 321804502-0007	Gray/Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-07-B 321804502-0007A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-07-C 321804502-0007B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-07-D 321804502-0007C	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-07-E 321804502-0007D	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-08-A 321804502-0008	Gray/Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-08-B 321804502-0008A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-08-C 321804502-0008B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-08-D 321804502-0008C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-08-E 321804502-0008D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-09-A 321804502-0009	Gray/Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-09-B 321804502-0009A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-09-C 321804502-0009B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-09-D 321804502-0009C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-09-E 321804502-0009D	Black/Pink Non-Fibrous Homogeneous	10% Cellulose 20% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-10 321804502-0010	Gray/Black Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (Other)	None Detected
1802210028JL-11 321804502-0011 QC	Gray/Black Non-Fibrous Homogeneous	5% Glass	90% Non-fibrous (Other)	5% Chrysotile
1802210028JL-12 321804502-0012	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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LA Testing

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http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321804502

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802210028JL-13-A 321804502-0013	Gray/Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-13-B 321804502-0013A	Black Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-13-C 321804502-0013B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-13-D 321804502-0013C	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-13-E 321804502-0013D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-14-A 321804502-0014	Gray/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-14-B 321804502-0014A	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-14-C 321804502-0014B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-14-D 321804502-0014C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-14-E 321804502-0014D	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-14-F 321804502-0014E	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-15-A 321804502-0015	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802210028JL-15-B 321804502-0015A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-15-C 321804502-0015B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-15-D 321804502-0015C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-15-E 321804502-0015D	Tan/Black Fibrous Homogeneous	10% Cellulose 20% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-16 321804502-0016 QC	Gray/Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802210028JL-17 321804502-0017 QC	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile

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LA Testing

520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321804502
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802210028JL-18 <small>321804502-0018 QC</small>	Black Non-Fibrous Homogeneous	5% Glass	95% Non-fibrous (Other)	None Detected
1802210028JL-19-A <small>321804502-0019</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802210028JL-19-B <small>321804502-0019A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-19-C <small>321804502-0019B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-19-D <small>321804502-0019C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-19-E <small>321804502-0019D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-19-F <small>321804502-0019E</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802210028JL-20-A <small>321804502-0020</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802210028JL-20-B <small>321804502-0020A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-20-C <small>321804502-0020B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-20-D <small>321804502-0020C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-20-E <small>321804502-0020D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-20-F <small>321804502-0020E</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802210028JL-21-A <small>321804502-0021</small>	Gray/Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802210028JL-21-B <small>321804502-0021A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-21-C <small>321804502-0021B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-21-D <small>321804502-0021C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-21-E <small>321804502-0021D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-21-F <small>321804502-0021E</small>	Pink Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected

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LA Testing

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LA Testing Order: 321804502

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802210028JL-22 321804502-0022 QC	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802210028JL-23 321804502-0023	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802210028JL-24 321804502-0024	Gray/Black Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802210028JL-25-A 321804502-0025	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802210028JL-25-B 321804502-0025A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-25-C 321804502-0025B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-25-D 321804502-0025C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-25-E 321804502-0025D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-25-F 321804502-0025E	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-25-G 321804502-0025F	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802210028JL-26-A 321804502-0026	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802210028JL-26-B 321804502-0026A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-26-C 321804502-0026B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-26-D 321804502-0026C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-26-E 321804502-0026D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-26-F 321804502-0026E	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-26-G 321804502-0026F	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802210028JL-27-A 321804502-0027	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802210028JL-27-B 321804502-0027A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

Initial report from: 02/26/2018 16:05:18



LA Testing

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Tel/Fax: (323) 254-9960 / (323) 254-9982

http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321804502

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802210028JL-27-C 321804502-0027B	Black Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-27-D 321804502-0027C	Black Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-27-E 321804502-0027D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-27-F 321804502-0027E	Pink Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802210028JL-28 321804502-0028	Black Non-Fibrous Homogeneous		93% Non-fibrous (Other)	7% Chrysotile
1802210028JL-29 321804502-0029 QC	Black Non-Fibrous Homogeneous		93% Non-fibrous (Other)	7% Chrysotile
1802210028JL-30 321804502-0030 QC	Gray/Black Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802210028JL-31-A 321804502-0031	White/Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802210028JL-31-B 321804502-0031A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-31-C 321804502-0031B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-31-D 321804502-0031C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-31-E 321804502-0031D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-31-F 321804502-0031E	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-31-G 321804502-0031F	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802210028JL-32-A 321804502-0032 QC	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802210028JL-32-B 321804502-0032A QC	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-32-C 321804502-0032B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-32-D 321804502-0032C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

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LA Testing Order: 321804502

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802210028JL-32-E 321804502-0032D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-32-F 321804502-0032E	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802210028JL-33-A 321804502-0033	Gray/Black Non-Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802210028JL-33-B 321804502-0033A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-33-C 321804502-0033B	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-33-D 321804502-0033C	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-33-E 321804502-0033D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802210028JL-33-F 321804502-0033E	Tan Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802210028JL-34 321804502-0034	White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-35 321804502-0035 QC	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-36 321804502-0036	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-37 321804502-0037	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-38 321804502-0038	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-39 321804502-0039 QC	Gray/Orange Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-40 321804502-0040	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-41 321804502-0041	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-42 321804502-0042	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-43 321804502-0043	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-44 321804502-0044	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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LA Testing Order: 321804502
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802210028JL-45 <small>321804502-0045</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-46 <small>321804502-0046</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-47 <small>321804502-0047</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-48 <small>321804502-0048</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-49 <small>321804502-0049</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-50 <small>321804502-0050</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-51 <small>321804502-0051</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-52 <small>321804502-0052</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-53 <small>321804502-0053</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-54 <small>321804502-0054</small> QC	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-55 <small>321804502-0055</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-56 <small>321804502-0056</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-57 <small>321804502-0057</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-58 <small>321804502-0058</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-59 <small>321804502-0059</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802210028JL-60 <small>321804502-0060</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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LA Testing Order: 321804502
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type

Analyst(s) _____

- Arturo Casas (46)
- Guillermo Hernandez (35)
- Humberto Espinoza (63)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 02/26/2018 16:05:18

 EXECUTIVE ENVIRONMENTAL <small>HEALTH. SAFETY. SIMPLIFIED.</small>	Executive Environmental Laboratory Submittal ASBESTOS	Originating Office: <input checked="" type="checkbox"/> 310 E. Foothill Blvd, Suite 200 Arcadia, CA 91006 Phone: 626 441.7050 Fax: 626 441.0016	Lab Submitted to: <input checked="" type="checkbox"/> LA Testing (Sierra Madre) <input type="checkbox"/> AmeriSci <input type="checkbox"/> EMLab (Glendale)
--	--	--	---

<input checked="" type="checkbox"/> Routine (3 working days)	<input type="checkbox"/> RUSH (surcharges may apply) Circle 6 24 48 One hours hours hours	Results Required by: (date and Time): _____
--	--	---

Project #: 1820187 0028 Submitted by: Juan Lopez Date: 2/21/18 Page 1 of 1

- The receiving Laboratory is required to complete the following:**
- All invoices are to be sent to: 310 E. Foothill Blvd, Ste 200, Arcadia, CA 91006 with a copy of the lab report.
 - All lab reports and invoices are to contain the Project Number from above.
 - Unsigned reports marked "draft" are unacceptable.
 - Report to the attention of: Yesenia Galeana Ph: (562) 889-1327

Optional Items to be completed by the Laboratory if check marked:

Fax report to: 626.441.0016 Other: JLopez@execenv.com
 Email Report to: Info@EXECENV.com Other: _____
 PHONE & Email RESULTS TO: Yesenia Galeana @626-873-2300 & ygaleana@execenv.com

Analyses Codes for Analyses: PCM -- NIOSH 7400 PLM -- PLM EPA 600/R-93/116 TEM -- AHERA 40 CFR, Part 763
 Requested Column for Asbestos: Point Count - 1000 Point Count w/Gravimetric Reduction Other - Contact office & write Method In w/description

Lab No.:	Sample No.:	Media	Air Volume	Analyses Requested
Sample Number Prefix: 1802210028JL	-01	Bulk	N/A	PLM
		-60		

Notes: 1) Laboratory to assign sequential Alpha Letter starting with "A" to each layer of layered samples analyzed.

Relinquished by: [Signature] Date: 2/21/18 Time: 11:30 PM
 Received by: _____ Date: _____ Time: _____
 Received in Lab by: DF Lopez (Drop Box) Date: 2/21/18 Time: 8am



LA Testing

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Tel/Fax: (323) 254-9960 / (323) 254-9982
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LA Testing Order: 321804555
Customer ID: 32EXEC52
Customer PO:
Project ID:

Attention: Yesenia Galeana
Executive Environmental Services Corp.
310 East Foothill Blvd.
Suite 200
Arcadia, CA 91006
Project: 18-Z0187.0028 / Juan Lopez

Phone: (626) 441-7050
Fax: (626) 441-0016
Received Date: 02/23/2018 8:00 AM
Analysis Date: 02/27/2018 - 02/28/2018
Collected Date: 02/22/2018

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802220028JL-61-A <small>321804555-0001</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-61-B <small>321804555-0001A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-61-C <small>321804555-0001B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-61-D <small>321804555-0001C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-61-E <small>321804555-0001D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-61-F <small>321804555-0001E</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-62-A <small>321804555-0002</small>	White/Black Non-Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-62-B <small>321804555-0002A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-62-C <small>321804555-0002B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-62-D <small>321804555-0002C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-62-E <small>321804555-0002D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-62-F <small>321804555-0002E</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-63-A <small>321804555-0003</small>	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-63-B <small>321804555-0003A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-63-C <small>321804555-0003B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-63-D <small>321804555-0003C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

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LA Testing Order: 321804555

Customer ID: 32EXEC52

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802220028JL-63-E <small>321804555-0003D</small>	Tan/Black Fibrous Homogeneous	10% Cellulose 30% Glass	60% Non-fibrous (Other)	None Detected
1802220028JL-64 <small>321804555-0004</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-65-A <small>321804555-0005</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-65-B <small>321804555-0005A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-66 <small>321804555-0006</small>	Gray/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-67-A <small>321804555-0007</small>	White/Black Fibrous Heterogeneous	5% Cellulose 20% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-67-B <small>321804555-0007A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-67-C <small>321804555-0007B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-67-D <small>321804555-0007C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-67-E <small>321804555-0007D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-68-A <small>321804555-0008</small>	White/Black Fibrous Homogeneous	5% Cellulose 20% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-68-B <small>321804555-0008A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-68-C <small>321804555-0008B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-68-D <small>321804555-0008C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-68-E <small>321804555-0008D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-69-A <small>321804555-0009</small>	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-69-B <small>321804555-0009A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-69-C <small>321804555-0009B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-69-D <small>321804555-0009C</small>	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

Initial report from: 02/28/2018 12:55:58



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LA Testing Order: 321804555

Customer ID: 32EXEC52

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Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802220028JL-70 321804555-0010 QC	White/Black Non-Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
1802220028JL-71 321804555-0011	Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802220028JL-72 321804555-0012	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-73 321804555-0013	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-74 321804555-0014	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-75 321804555-0015	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-76 321804555-0016	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-77 321804555-0017 QC	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-78 321804555-0018	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-79 321804555-0019	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-80-A 321804555-0020	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-80-B 321804555-0020A	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-81-Finish Coat 321804555-0021	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-81-Base Coat 321804555-0021A	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-82-A 321804555-0022 QC	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-82-B 321804555-0022A QC	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-82-C 321804555-0022B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-82-D 321804555-0022C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

Initial report from: 02/28/2018 12:55:58



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Customer ID: 32EXEC52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802220028JL-82-E 321804555-0022D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-82-F 321804555-0022E	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-83-A 321804555-0023	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-83-B 321804555-0023A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-83-C 321804555-0023B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-83-D 321804555-0023C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-83-E 321804555-0023D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-83-F 321804555-0023E	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-83-G 321804555-0023F	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-84-A 321804555-0024	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-84-B 321804555-0024A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-84-C 321804555-0024B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-84-D 321804555-0024C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-84-E 321804555-0024D	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-85 321804555-0025 QC	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-86 321804555-0026	Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802220028JL-87 321804555-0027 QC	Gray/Black Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802220028JL-88 321804555-0028	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-89 321804555-0029	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 02/28/2018 12:55:58



LA Testing

520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321804555
Customer ID: 32EXEC52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802220028JL-90 <small>321804555-0030</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-91-A <small>321804555-0031</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-91-B <small>321804555-0031A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-91-C <small>321804555-0031B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-91-D <small>321804555-0031C</small>	Brown/Black Fibrous Heterogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-91-E <small>321804555-0031D</small>	Pink Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802220028JL-92-A <small>321804555-0032</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-92-B <small>321804555-0032A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-92-C <small>321804555-0032B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-92-D <small>321804555-0032C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-92-E <small>321804555-0032D</small>	Pink Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802220028JL-93-A <small>321804555-0033</small>	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-93-B <small>321804555-0033A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-93-C <small>321804555-0033B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-93-D <small>321804555-0033C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-93-E <small>321804555-0033D</small>	Pink Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802220028JL-94 <small>321804555-0034</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-95 <small>321804555-0035</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-96 <small>321804555-0036</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
QC				

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802220028JL-97 <small>321804555-0037</small>	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-98 <small>321804555-0038</small>	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-99 <small>321804555-0039</small>	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-100 <small>321804555-0040</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-101 <small>321804555-0041</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-102 <small>321804555-0042</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-103 <small>321804555-0043 QC</small>	Black Non-Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
1802220028JL-104 <small>321804555-0044</small>	Black Non-Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
1802220028JL-105 <small>321804555-0045</small>	Gray/Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802220028JL-106-A <small>321804555-0046</small>	White/Black Fibrous Heterogeneous	5% Cellulose 20% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-106-B <small>321804555-0046A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-106-C <small>321804555-0046B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-106-D <small>321804555-0046C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-106-E <small>321804555-0046D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-106-F <small>321804555-0046E</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-106-G <small>321804555-0046F</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-107-A <small>321804555-0047</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802220028JL-107-B <small>321804555-0047A</small>	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-107-C <small>321804555-0047B</small>	Black Non-Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected

Initial report from: 02/28/2018 12:55:58



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LA Testing Order: 321804555
 Customer ID: 32EXEC52
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802220028JL-107-D <small>321804555-0047C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-107-E <small>321804555-0047D</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-107-F <small>321804555-0047E</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-107-G <small>321804555-0047F</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-108-A <small>321804555-0048</small>	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802220028JL-108-B <small>321804555-0048A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-108-C <small>321804555-0048B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-108-D <small>321804555-0048C</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802220028JL-109 <small>321804555-0049 QC</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-110 <small>321804555-0050 QC</small>	Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802220028JL-111 <small>321804555-0051</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-112 <small>321804555-0052</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-113 <small>321804555-0053 QC</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802220028JL-114 <small>321804555-0054 QC</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 02/28/2018 12:55:58



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LA Testing Order: 321804555
Customer ID: 32EXEC52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	% Fibrous	Non-Asbestos		Asbestos
			% Non-Fibrous	% Type	

Analyst(s) _____

Arturo Casas (37)

Humberto Espinoza (87)


Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 02/28/2018 12:55:58

#321804555

 EXECUTIVE ENVIRONMENTAL <small>HEALTH & SAFETY GROUP, INC.</small>	Executive Environmental Laboratory Submittal ASBESTOS	Originating Office: <input checked="" type="checkbox"/> 310 E. Foothill Blvd, Suite 200 Arcadia, CA 91006 Phone: 626 441 7050 Fax: 626 441 0016	Lab Submitted to: <input checked="" type="checkbox"/> LA Testing (Sierra Madre) <input type="checkbox"/> AmeriSci <input type="checkbox"/> EMLab (Glendale)
--	--	--	---

Routine
(3 working days)

RUSH (surcharges may apply)
 Circle **6** **24** **48**
 One **hours** **hours** **hours**

Results Required by: (date and Time): _____

Project #: 19-20187-0028 Submitted by: Juan Lopez Date: 2/22/18 Page 1 of 1

- The receiving Laboratory is required to complete the following:**
- All invoices are to be sent to: 310 E. Foothill Blvd, Ste 200, Arcadia, CA 91006 with a copy of the lab report.
 - All lab reports and invoices are to contain the Project Number from above.
 - Unsigned reports marked "draft" are unacceptable.
 - Report to the attention of: Yesenia Galeana Ph: (562) 889-1327

Optional Items to be completed by the Laboratory if check marked:

Fax report to: 626.441.0016 Other: JLOPEZ@EXECENV.COM

Email Report to: Info@EXECENV.com Other: _____

PHONE & Email RESULTS TO: Yesenia Galeana @626-873-2300 & ygaleana@execenv.com

Analyses Codes for Analyses: **PCM** - NIOSH 7400 **PLM** - PLM EPA 600/R-93/116 **TEM** - AHERA 40 CFR, Part 763
 Requested Column for Asbestos: **Point Count - 1000 Point Count w/Gravimetric Reduction** Other - Contact office & write Method In w/description

Lab No.:	Sample No.:	Media	Air Volume	Analyses Requested
Sample Number Prefix: 1902220028 JL	-Cel	Bulk	N/A	PLM
		-114		

Notes: 1) Laboratory to assign sequential Alpha Letter starting with "A" to each layer of layered samples analyzed.

Relinquished by: [Signature] Date: 2/22/18 Time: 11:30pm
 Received by: [Signature] Date: 2/23/18 Time: 82
 Received in Lab by: _____ Date: _____ Time: _____



LA Testing

520 Mission Street South Pasadena, CA 91030
Tel/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321804566
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Attention: Yesenia Galeana
Executive Environmental Services Corp.
310 East Foothill Blvd.
Suite 200
Arcadia, CA 91006

Phone: (626) 441-7050
Fax: (626) 441-0016
Received Date: 02/26/2018 8:00 AM
Analysis Date: 03/01/2018
Collected Date: 02/23/2018

Project: 18-Z0187-0028 | Sampler: Juan Lopez (18-Z0187-0028)

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802230028JL-115-A 321804566-0001	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-115-B 321804566-0001A	Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802230028JL-115-C 321804566-0001B	Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802230028JL-116-A 321804566-0002	White/Black Fibrous Heterogeneous	15% Glass	85% Non-fibrous (Other)	None Detected
1802230028JL-116-B 321804566-0002A	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-116-C 321804566-0002B	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-117-A 321804566-0003	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802230028JL-117-B 321804566-0003A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-117-C 321804566-0003B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-118 321804566-0004 QC	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802230028JL-119 321804566-0005 QC	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802230028JL-120 321804566-0006	Gray/Black Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
1802230028JL-121 321804566-0007	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-122 321804566-0008	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-123 321804566-0009	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-124-A 321804566-0010	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 03/01/2018 11:24:55



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LA Testing Order: 321804566
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802230028JL-124-B <small>321804566-0010A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-125-A <small>321804566-0011</small>	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-125-B <small>321804566-0011A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-126-A <small>321804566-0012 QC</small>	Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-126-B <small>321804566-0012A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-127-A <small>321804566-0013</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-127-B <small>321804566-0013A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-127-C <small>321804566-0013B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-128-A <small>321804566-0014</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802230028JL-128-B <small>321804566-0014A</small>	Black Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-128-C <small>321804566-0014B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-128-D <small>321804566-0014C</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802230028JL-129-A <small>321804566-0015</small>	Gray/Black Fibrous Homogeneous	25% Glass	75% Non-fibrous (Other)	None Detected
1802230028JL-129-B <small>321804566-0015A</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-129-C <small>321804566-0015B</small>	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-129-D <small>321804566-0015C</small>	Black/Pink Fibrous Homogeneous	5% Cellulose 25% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-130 <small>321804566-0016 QC</small>	Black Non-Fibrous Homogeneous	8% Cellulose	92% Non-fibrous (Other)	None Detected
1802230028JL-131 <small>321804566-0017 QC</small>	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile

Initial report from: 03/01/2018 11:24:55



LA Testing

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LA Testing Order: 321804566

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802230028JL-132 321804566-0018	Gray/Black Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
1802230028JL-133 321804566-0019	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-134 321804566-0020	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-135 321804566-0021	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-136-A 321804566-0022	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802230028JL-136-B 321804566-0022A	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-136-C 321804566-0022B	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-137-A 321804566-0023	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802230028JL-137-B 321804566-0023A	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-137-C 321804566-0023B	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802230028JL-137-D 321804566-0023C	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802230028JL-138-A 321804566-0024	Gray/Black Fibrous Homogeneous	10% Cellulose 20% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-138-B 321804566-0024A	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-138-C 321804566-0024B	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-138-D 321804566-0024C	Black Fibrous Homogeneous	30% Glass	70% Non-fibrous (Other)	None Detected
1802230028JL-139 321804566-0025	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802230028JL-140 321804566-0026	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802230028JL-141 321804566-0027 QC	Gray/Black Non-Fibrous Homogeneous	7% Cellulose	90% Non-fibrous (Other)	3% Chrysotile
1802230028JL-142 321804566-0028	White Non-Fibrous Homogeneous	3% Glass	97% Non-fibrous (Other)	None Detected

Initial report from: 03/01/2018 11:24:55



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LA Testing Order: 321804566
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802230028JL-143 <small>321804566-0029</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-144 <small>321804566-0030</small>	White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-145 <small>321804566-0031</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-146 <small>321804566-0032</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-147 <small>321804566-0033</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-148 <small>321804566-0034</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-149 <small>321804566-0035</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802230028JL-150 <small>321804566-0036</small> QC	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Arturo Casas (21)
Rosa Mendoza (40)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 03/01/2018 11:24:55

 EXECUTIVE ENVIRONMENTAL <small>HEALTH • SAFETY • COMPLIANCE</small>	Executive Environmental Laboratory Submittal ASBESTOS	Originating Office: <input checked="" type="checkbox"/> 310 E. Foothill Blvd, Suite 200 Arcadia, CA 91006 Phone: 626.441.7050 Fax: 626.441.0016	Lab Submitted to: <input checked="" type="checkbox"/> LA Testing (Sierra Madre) <input type="checkbox"/> AmeriSci <input type="checkbox"/> EMLab (Glendale)
---	--	--	---

<input checked="" type="checkbox"/> Routine (3 working days)	<input type="checkbox"/> RUSH (surcharges may apply) Circle 6 24 48 One hours hours hours	Results Required by: (date and Time): _____
--	--	---

Project #: 15-20187-00258
 Submitted by: Juan Lopez
 Date: 2/23/18
 Page 1 of 1

- The receiving Laboratory is required to complete the following:**
- All invoices are to be sent to: 310 E. Foothill Blvd, Ste 200, Arcadia, CA 91006 with a copy of the lab report.
 - All lab reports and invoices are to contain the Project Number from above.
 - Unsigned reports marked "draft" are unacceptable.
 - Report to the attention of: Yesenia Galeana Ph: (562) 889-1327

Optional Items to be completed by the Laboratory if check marked:

Fax report to: 626.441.0016
 Other: JLopez@execenv.com
 Email Report to: Info@EXECENV.com
 Other: _____
 PHONE & Email RESULTS TO: Yesenia Galeana @626-873-2300 & ygaleana@execenv.com

Analyses Codes for Analysis: PCM -- NIOSH 7400
 PLM -- PLM EPA 600/R-93/116
 TEM -- AHERA 40 CFR, Part 763
 Requested Column for Asbestos: Point Count -- 1000 Point Count w/Gravimetric Reduction
 Other -- Contact office & write Method In w/description

Lab No.:	Sample No.:	Media	Air Volume	Analyses Requested
Sample Number Prefix: <u>15022300258JL</u>	<u>115</u>	<u>Bulk</u>	<u>N/A</u>	<u>PLM</u>
		<u>150</u>		

Notes: 1) Laboratory to assign sequential Alpha Letter starting with "A" to each layer of layered samples analyzed.

Relinquished by: [Signature]
 Date: 2/25/18
 Time: 10:00pm
Received by: _____
 Date: _____
 Time: _____
Received in Lab by: D Flores (Drp3 CA)
 Date: 2/26/18
 Time: 8:30



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LA Testing Order: 321804806
Customer ID: 32EXEC52
Customer PO:
Project ID:

Attention: Yesenia Galeana
 Executive Environmental Services Corp.
 310 East Foothill Blvd.
 Suite 200
 Arcadia, CA 91006
Project: 18-Z0187-0028 | Sampler: Juan A. Lopez

Phone: (626) 441-7050
Fax: (626) 441-0016
Received Date: 02/27/2018 8:00 AM
Analysis Date: 03/02/2018
Collected Date: 02/26/2018

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802260028JL-151-A <small>321804806-0001</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-151-B <small>321804806-0001A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-151-C <small>321804806-0001B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-151-D <small>321804806-0001C</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-152-A <small>321804806-0002</small>	White/Black Fibrous Heterogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-152-B <small>321804806-0002A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-152-C <small>321804806-0002B</small>	Black Non-Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-152-D <small>321804806-0002C</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802260028JL-153-A <small>321804806-0003</small>	Gray/Black Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-153-B <small>321804806-0003A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-153-C <small>321804806-0003B</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-153-D <small>321804806-0003C</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-153-E <small>321804806-0003D</small>	Brown/Black Fibrous Heterogeneous	10% Cellulose 12% Glass	78% Non-fibrous (Other)	None Detected
1802260028JL-154 <small>321804806-0004</small>	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802260028JL-155 <small>321804806-0005</small> QC	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802260028JL-156 <small>321804806-0006</small> QC	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

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LA Testing Order: 321804806

Customer ID: 32EXEC52

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802260028JL-157 <small>321804806-0007</small>	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-158 <small>321804806-0008</small>	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-159 <small>321804806-0009</small>	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-160-A <small>321804806-0010</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-160-B <small>321804806-0010A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-160-C <small>321804806-0010B</small>	Black Non-Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-161-A <small>321804806-0011</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-161-B <small>321804806-0011A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-161-C <small>321804806-0011B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-162-A <small>321804806-0012</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-162-B <small>321804806-0012A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-162-C <small>321804806-0012B</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-162-D <small>321804806-0012C</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-162-E <small>321804806-0012D</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-162-F <small>321804806-0012E</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-162-G <small>321804806-0012F</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802260028JL-163 <small>321804806-0013</small>	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802260028JL-164 <small>321804806-0014</small>	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802260028JL-165 <small>321804806-0015</small>	Gray/Black Non-Fibrous Heterogeneous		90% Non-fibrous (Other)	10% Chrysotile

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LA Testing Order: 321804806

Customer ID: 32EXEC52

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802260028JL-166 321804806-0016	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-167 321804806-0017	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-168 321804806-0018	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-169-A 321804806-0019	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-169-B 321804806-0019A	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-169-C 321804806-0019B	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-170-A 321804806-0020	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-170-B 321804806-0020A	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-170-C 321804806-0020B	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-171-A 321804806-0021	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-171-B 321804806-0021A	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-171-C 321804806-0021B	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-171-D 321804806-0021C	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-171-E 321804806-0021D	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-171-F 321804806-0021E	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-171-G 321804806-0021F	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-171-H 321804806-0021G	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-171-I 321804806-0021H	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802260028JL-172 321804806-0022	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile

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LA Testing Order: 321804806
Customer ID: 32EXEC52
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802260028JL-173 <small>321804806-0023 QC</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802260028JL-174 <small>321804806-0024</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-175 <small>321804806-0025</small>	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-176 <small>321804806-0026</small>	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-177 <small>321804806-0027</small>	Gray/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-178-A <small>321804806-0028</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-178-B <small>321804806-0028A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-178-C <small>321804806-0028B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-179-A <small>321804806-0029</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-179-B <small>321804806-0029A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-179-C <small>321804806-0029B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-179-D <small>321804806-0029C</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802260028JL-180-A <small>321804806-0030</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-180-B <small>321804806-0030A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-180-C <small>321804806-0030B</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-180-D <small>321804806-0030C</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-180-E <small>321804806-0030D</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-180-F <small>321804806-0030E</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-180-G <small>321804806-0030F</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected

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LA Testing Order: 321804806
 Customer ID: 32EXEC52
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802260028JL-180-H <small>321804806-0030G</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802260028JL-181 <small>321804806-0031 QC</small>	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802260028JL-182 <small>321804806-0032</small>	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802260028JL-183 <small>321804806-0033 QC</small>	Gray/Black Fibrous Homogeneous	10% Cellulose 10% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-184 <small>321804806-0034</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802260028JL-185 <small>321804806-0035</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802260028JL-186 <small>321804806-0036</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802260028JL-187 <small>321804806-0037</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-188-A <small>321804806-0038</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-188-B <small>321804806-0038A</small>	Red Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-189 <small>321804806-0039</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-190-A <small>321804806-0040</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-190-B <small>321804806-0040A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-190-C <small>321804806-0040B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-190-D <small>321804806-0040C</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802260028JL-191-A <small>321804806-0041</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-191-B <small>321804806-0041A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-191-C <small>321804806-0041B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802260028JL-192-A <small>321804806-0042</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected

Initial report from: 03/02/2018 15:41:33



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LA Testing Order: 321804806

Customer ID: 32EXEC52

Customer PO:

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802260028JL-192-B <small>321804806-0042A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802260028JL-192-C <small>321804806-0042B</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-192-D <small>321804806-0042C</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-192-E <small>321804806-0042D</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-192-F <small>321804806-0042E</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-192-G <small>321804806-0042F</small>	Black Fibrous Homogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802260028JL-192-H <small>321804806-0042G</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802260028JL-193 <small>321804806-0043 QC</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802260028JL-194 <small>321804806-0044 QC</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802260028JL-195 <small>321804806-0045</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Analyst(s)

Julie Vong (47)

Rosa Mendoza (55)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 03/02/2018 15:41:33



LA Testing

520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order: 321805446
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Attention: Yesenia Galeana
Executive Environmental Services Corp.
310 East Foothill Blvd.
Suite 200
Arcadia, CA 91006
Project: REF PLM REPORT: 321804806 | 18-Z0187-0028 | Sampler: Juan A. Lopez (18-Z0187-0028)

Phone: (626) 441-7050
Fax: (626) 441-0016
Received: 03/06/2018 12:50 PM
Analysis Date: 03/07/2018
Collected: 02/26/2018

Test Report: Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using the 1,000 Point Count Procedure

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
180226-0028JL-184 321805446-0001		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile
180226-0028JL-185 321805446-0002		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile
180226-0028JL-186 321805446-0003		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile

Analyst(s)

Arturo Casas (3)

Jerry Drapala Ph.D, Laboratory Manager
or other approved signatory

Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. The limit of detection as stated in the method is 0.1%. EMSL Analytical Inc suggests that samples reported as <0.1% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc. bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc liability is limited to the cost of sample analysis. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 03/07/2018 13:04:42

 <p>EXECUTIVE ENVIRONMENTAL HEALTH & SAFETY DIVISION</p>	<p>Executive Environmental Laboratory Submittal ASBESTOS</p>	<p>Originating Office:</p> <input checked="" type="checkbox"/> 310 E. Foothill Blvd., Suite 200 Arcadia, CA 91006 Phone: 626.441.7050 Fax: 626.441.0016	<p>Lab Submitted to:</p> <input checked="" type="checkbox"/> LA Testing (Sierra Madre) <input type="checkbox"/> AmeriSci <input type="checkbox"/> EMLab (Glendale)
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<input checked="" type="checkbox"/> Routine (3 working days)	<input type="checkbox"/> RUSH (surcharges may apply) Circle 6 24 48 One hours hours hours	Results Required by: (date and Time): _____
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Project #: 16-20167-0028 Submitted by: Juan A. Lopez Date: 2/24/18 Page 1 of 1

- The receiving Laboratory is required to complete the following:**
- All invoices are to be sent to: 310 E. Foothill Blvd, Ste 200, Arcadia, CA 91006 with a copy of the lab report.
 - All lab reports and invoices are to contain the Project Number from above.
 - Unsigned reports marked "draft" are unacceptable.
 - Report to the attention of: Yesenia Galeana Ph: (562) 889-1327

Optional Items to be completed by the Laboratory if check marked:

Fax report to: 626.441.0016 Other: JLopez@execenv.com
 Email Report to: Info@EXECENV.com Other: _____
 PHONE & Email RESULTS TO: Yesenia Galeana @626-873-2300 & ygaleana@execenv.com

Analyses Codes for Analyses: PCM - NIOSH 7400 PLM - PLM EPA 600/R-93/116 TEM - AHERA 40 CFR, Part 763
 Requested Column for Asbestos: Point Count - 1000 Point Count w/Gravimetric Reduction Other - Contact office & write Method In w/description

Lab No.:	Sample No.:	Media	Air Volume	Analyses Requested
Sample Number Prefix: 1802260028 JL	-151	Bulk	N/A	PLM
		-195		

Notes: 1) Laboratory to assign sequential Alpha Letter starting with "A" to each layer of layered samples analyzed.

Relinquished by: [Signature] Date: 2/26/18 Time: 11:30pm
 Received by: [Signature] Date: 2/27/18 Time:
 Received in Lab by: _____ Date: _____ Time: _____



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LA Testing Order: 321804891

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Attention: Yesenia Galeana
Executive Environmental Services Corp.
310 East Foothill Blvd.
Suite 200
Arcadia, CA 91006

Phone: (626) 441-7050

Fax: (626) 441-0016

Received Date: 02/28/2018 8:00 AM

Analysis Date: 03/03/2018 - 03/05/2018

Collected Date: 02/27/2018

Project: 18-Z0187-0028 | Sampler: Juan Lopez (18-Z0187-0028)

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802270028JL-196 <small>321804891-0001</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-197 <small>321804891-0002</small>	White/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-198 <small>321804891-0003 QC</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802270028JL-199-A <small>321804891-0004</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-199-B <small>321804891-0004A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-200-A <small>321804891-0005</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-200-B <small>321804891-0005A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-200-C <small>321804891-0005B</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802270028JL-201-A <small>321804891-0006</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-201-B <small>321804891-0006A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802270028JL-201-C <small>321804891-0006B</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802270028JL-202 <small>321804891-0007</small>	Gray/Black Non-Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802270028JL-203 <small>321804891-0008</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802270028JL-204 <small>321804891-0009</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802270028JL-205 <small>321804891-0010</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-206 <small>321804891-0011</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 03/05/2018 07:35:46



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LA Testing Order: 321804891

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802270028JL-207 <small>321804891-0012</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-208-A <small>321804891-0013</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802270028JL-208-B <small>321804891-0013A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-209-A <small>321804891-0014 QC</small>	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-209-B <small>321804891-0014A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-210-A <small>321804891-0015 QC</small>	White/Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-210-B <small>321804891-0015A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-211-A <small>321804891-0016</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-211-B <small>321804891-0016A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-211-C <small>321804891-0016B</small>	Brown/Black Fibrous Heterogeneous	10% Cellulose 10% Glass	80% Non-fibrous (Other)	None Detected
1802270028JL-212-A <small>321804891-0017</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-212-B <small>321804891-0017A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-212-C <small>321804891-0017B</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802270028JL-213-A <small>321804891-0018</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-213-B <small>321804891-0018A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802270028JL-213-C <small>321804891-0018B</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802270028JL-214 <small>321804891-0019</small>	Gray/Black/Silver Non-Fibrous Heterogeneous		96% Non-fibrous (Other)	4% Chrysotile
1802270028JL-215 <small>321804891-0020</small>	Gray/Black/Silver Non-Fibrous Heterogeneous		94% Non-fibrous (Other)	6% Chrysotile
1802270028JL-216 <small>321804891-0021</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos % Type
		% Fibrous	% Non-Fibrous	
1802270028JL-217 <small>321804891-0022</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-218 <small>321804891-0023</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-219 <small>321804891-0024</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-220-A <small>321804891-0025</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-220-B <small>321804891-0025A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-220-C <small>321804891-0025B</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802270028JL-221-A <small>321804891-0026</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-221-B <small>321804891-0026A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-221-C <small>321804891-0026B</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802270028JL-222-Shingle <small>321804891-0027</small>	White/Black Fibrous Heterogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-222-Felt <small>321804891-0027A</small>	Black Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-223 <small>321804891-0028</small>	Gray/Black Non-Fibrous Heterogeneous		93% Non-fibrous (Other)	7% Chrysotile
1802270028JL-224 <small>321804891-0029</small>	Gray/Black Non-Fibrous Heterogeneous		94% Non-fibrous (Other)	6% Chrysotile
1802270028JL-225 <small>321804891-0030</small>	Black Non-Fibrous Homogeneous		90% Non-fibrous (Other)	10% Chrysotile
1802270028JL-226 <small>321804891-0031</small>	Gray/Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-227 <small>321804891-0032</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-228 <small>321804891-0033</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-229-A <small>321804891-0034</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-229-B <small>321804891-0034A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected

Initial report from: 03/05/2018 07:35:46



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LA Testing Order: 321804891

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802270028JL-229-C <small>321804891-0034B</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802270028JL-230-A <small>321804891-0035</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-230-B <small>321804891-0035A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-230-C <small>321804891-0035B</small>	Black Fibrous Homogeneous	10% Synthetic	90% Non-fibrous (Other)	None Detected
1802270028JL-231-A <small>321804891-0036</small>	White/Black Non-Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802270028JL-231-B <small>321804891-0036A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802270028JL-231-C <small>321804891-0036B</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802270028JL-232-A <small>321804891-0037</small> <i>Penetration Mastic</i> QC	Gray/Black Non-Fibrous Homogeneous		94% Non-fibrous (Other)	6% Chrysotile
1802270028JL-232-B <small>321804891-0037A</small> <i>Mastic</i> QC	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-233 <small>321804891-0038</small> QC	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802270028JL-234 <small>321804891-0039</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802270028JL-235-A <small>321804891-0040</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802270028JL-235-B <small>321804891-0040A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-236-A <small>321804891-0041</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802270028JL-236-B <small>321804891-0041A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-237-A <small>321804891-0042</small>	Gray/Pink Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
1802270028JL-237-B <small>321804891-0042A</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-238-A <small>321804891-0043</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected

Initial report from: 03/05/2018 07:35:46



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LA Testing Order: 321804891

Customer ID: 32EXEC52

Customer PO:

Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type
1802270028JL-238-B <small>321804891-0043A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-238-C <small>321804891-0043B</small>	Black Fibrous Homogeneous	10% Synthetic	90% Non-fibrous (Other)	None Detected
1802270028JL-239-A <small>321804891-0044</small>	Gray/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-239-B <small>321804891-0044A</small>	Black Fibrous Homogeneous	12% Glass	88% Non-fibrous (Other)	None Detected
1802270028JL-239-C <small>321804891-0044B</small>	Brown Fibrous Homogeneous	95% Cellulose	5% Non-fibrous (Other)	None Detected
1802270028JL-239-D <small>321804891-0044C</small>	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-240-A <small>321804891-0045</small>	White/Black Fibrous Heterogeneous	10% Glass	90% Non-fibrous (Other)	None Detected
1802270028JL-240-B <small>321804891-0045A</small>	Black Fibrous Homogeneous	20% Glass	80% Non-fibrous (Other)	None Detected
1802270028JL-240-C <small>321804891-0045B</small>	Brown Fibrous Homogeneous	98% Cellulose	2% Non-fibrous (Other)	None Detected
1802270028JL-241 <small>321804891-0046</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802270028JL-242 <small>321804891-0047</small>	Black Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
1802270028JL-243 <small>321804891-0048</small>	Black Non-Fibrous Homogeneous	5% Cellulose	95% Non-fibrous (Other)	None Detected
1802270028JL-244 <small>321804891-0049</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-245 <small>321804891-0050</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
1802270028JL-246 <small>321804891-0051</small>	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 03/05/2018 07:35:46



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LA Testing Order: 321804891
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Appearance	Non-Asbestos		Asbestos
		% Fibrous	% Non-Fibrous	% Type

Analyst(s)

Julie Vong (59)

Rosa Mendoza (28)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 03/05/2018 07:35:46



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LA Testing Order: 321805442
Customer ID: 32EXEC52
Customer PO:
Project ID: 18-Z0187-0028

Attention: Yesenia Galeana
Executive Environmental Services Corp.
310 East Foothill Blvd.
Suite 200
Arcadia, CA 91006
Phone: (626) 441-7050
Fax: (626) 441-0016
Received: 03/06/2018 12:05 PM
Analysis Date: 03/07/2018
Collected: 02/27/2018
Project: REF PLM REPORT: 321804891 | 18-Z0187-0028 | Sampler: Juan Lopez (18-Z0187-0028)

Test Report: Asbestos Analysis of Bulk Material via EPA 600/R-93/116. Quantitation using the 1,000 Point Count Procedure

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
180227-0028JL-198 321805442-0001		Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile
180227-0028JL-208 -A 321805442-0002		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile
180227-0028JL-235 -A 321805442-0003		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile
180227-0028JL-236 -A 321805442-0004		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile
180227-0028JL-237 -A 321805442-0005		Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<0.1% Chrysotile

Analyst(s)

Guillermo Hernandez (5)

Jerry Drapala Ph.D, Laboratory Manager
or other approved signatory

Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. The limit of detection as stated in the method is 0.1%. EMSL Analytical Inc suggests that samples reported as <0.1% or none detected undergo additional analysis via TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval EMSL Analytical Inc. This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the United States Government. EMSL Analytical Inc. bears no responsibility for sample collection activities, analytical method limitations, or the accuracy of results when requested to separate layered samples. EMSL Analytical Inc liability is limited to the cost of sample analysis. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 03/07/2018 13:48:53

#321804891

	Executive Environmental Laboratory Submittal ASBESTOS	Originating Office: <input checked="" type="checkbox"/> 310 E. Foothill Blvd., Suite 200 Arcadia, CA 91006 Phone: 626 441 7050 Fax: 626 441 0016	Lab Submitted to: <input checked="" type="checkbox"/> LA Testing (Sierra Madre) <input type="checkbox"/> AmeriSci <input type="checkbox"/> EMLab (Glendale)
---	--	--	--

Routine
(3 working days)

RUSH (surcharges may apply)
 Circle **6** **24** **48**
 One hours hours hours
 Results Required by: (date and Time): _____

Project #: 18-20187-0028 Submitted by: Juan Lopez Date: 2/27/18 Page 1 of 1

The receiving Laboratory is required to complete the following:

- All invoices are to be sent to: 310 E. Foothill Blvd, Ste 200, Arcadia, CA 91006 with a copy of the lab report.
- All lab reports and invoices are to contain the Project Number from above.
- Unsigned reports marked "draft" are unacceptable.
- Report to the attention of: Yesenia Galeana Ph: (562) 889-1327

Optional Items to be completed by the Laboratory if check marked:

- Fax report to: 626.441.0016 Other: JLopez@execenv.com
- Email Report to: Info@EXECENV.com Other: _____
- PHONE & Email RESULTS TO:** Yesenia Galeana @626-873-2300 & ygaleana@execenv.com

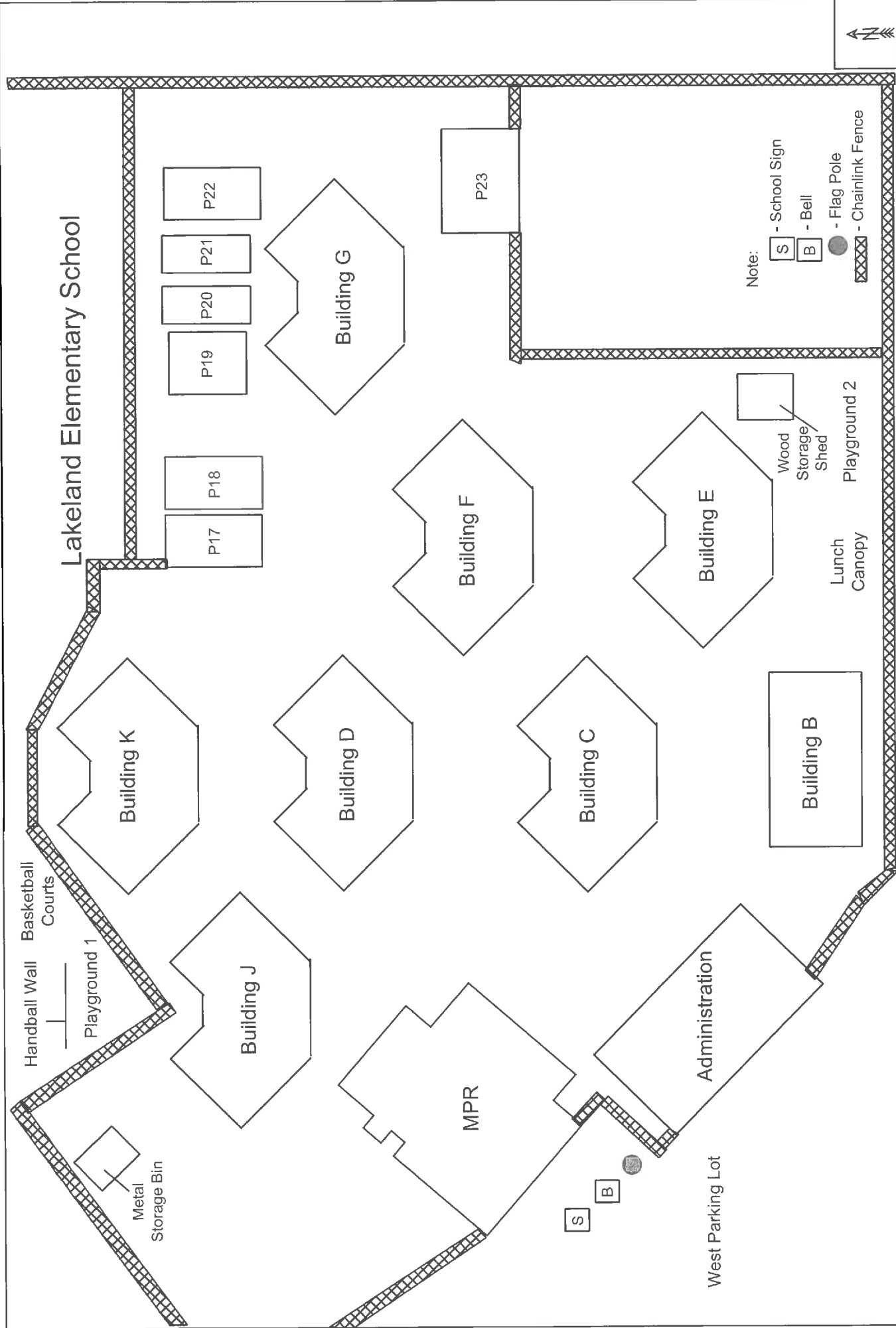
Analyses Codes for Analyses: **PCM** -- NIOSH 7400 **PLM** -- PLM EPA 600/R-93/116 **TEM** -- AHERA 40 CFR, Part 763
 Requested Column for Asbestos: **Point Count** - 1000 Point Count w/Gravimetric Reduction **Other** - Contact office & write Method In w/description

Lab No.:	Sample No.:	Media	Air Volume	Analyses Requested
Sample Number Prefix: 1802270028	196	Bulk	N/A	PLM
		246		

Notes: 1) Laboratory to assign sequential Alpha Letter starting with "A" to each layer of layered samples analyzed.

Relinquished by: [Signature] Date: 2/27/18 Time: 11:00 PM
 Received by: D Flores (Dir. Box) Date: 2/28/18 Time: 8am
 Received in Lab by: _____ Date: _____ Time: _____

APPENDIX B – SITE DRAWING



Lakeland Elementary School

Project #: 18-Z0187-0028

Client: Little Lake City SD

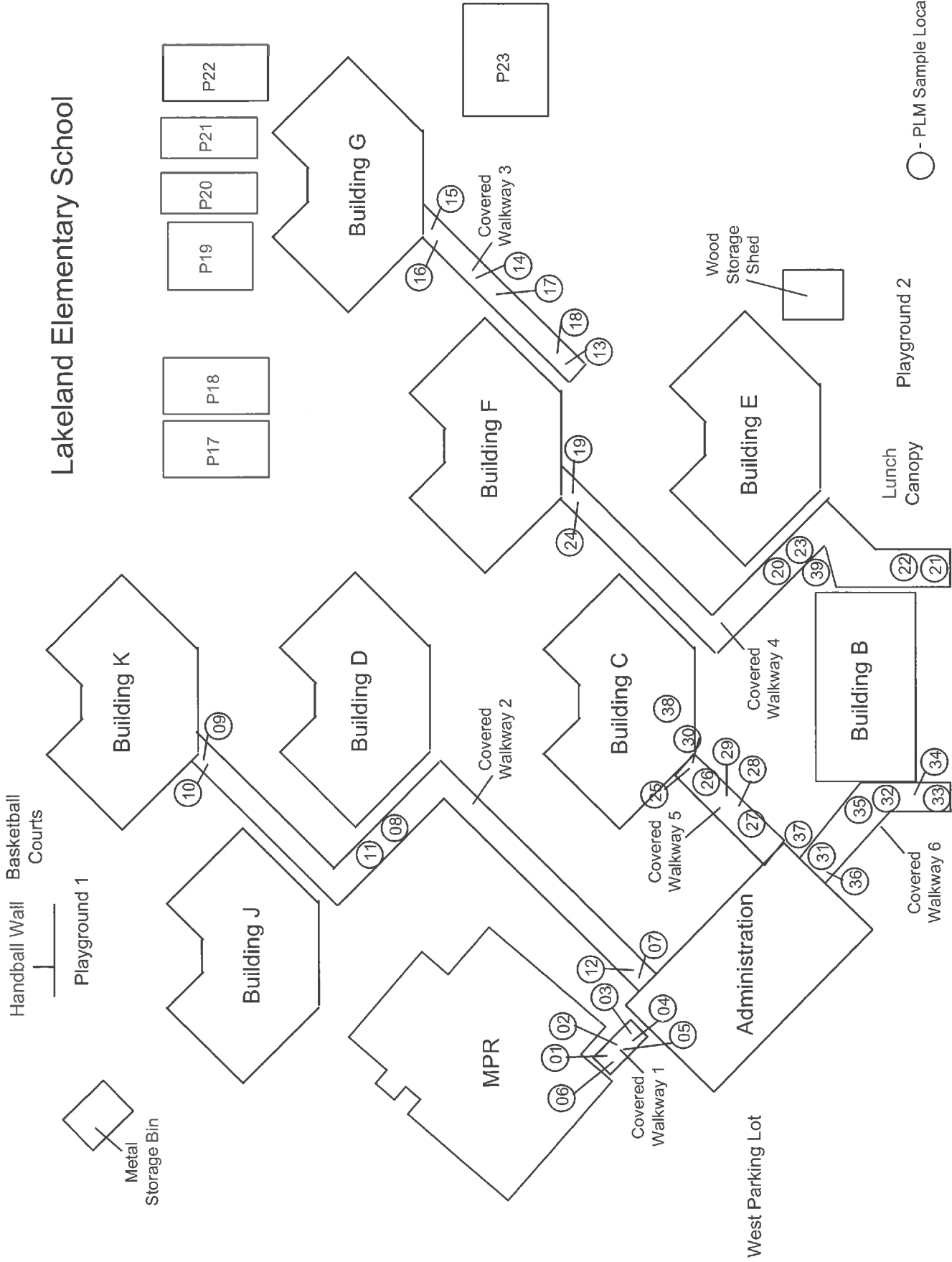
Info: Campus Map

EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

Lakeland Elementary School



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: PLM Sample Locations

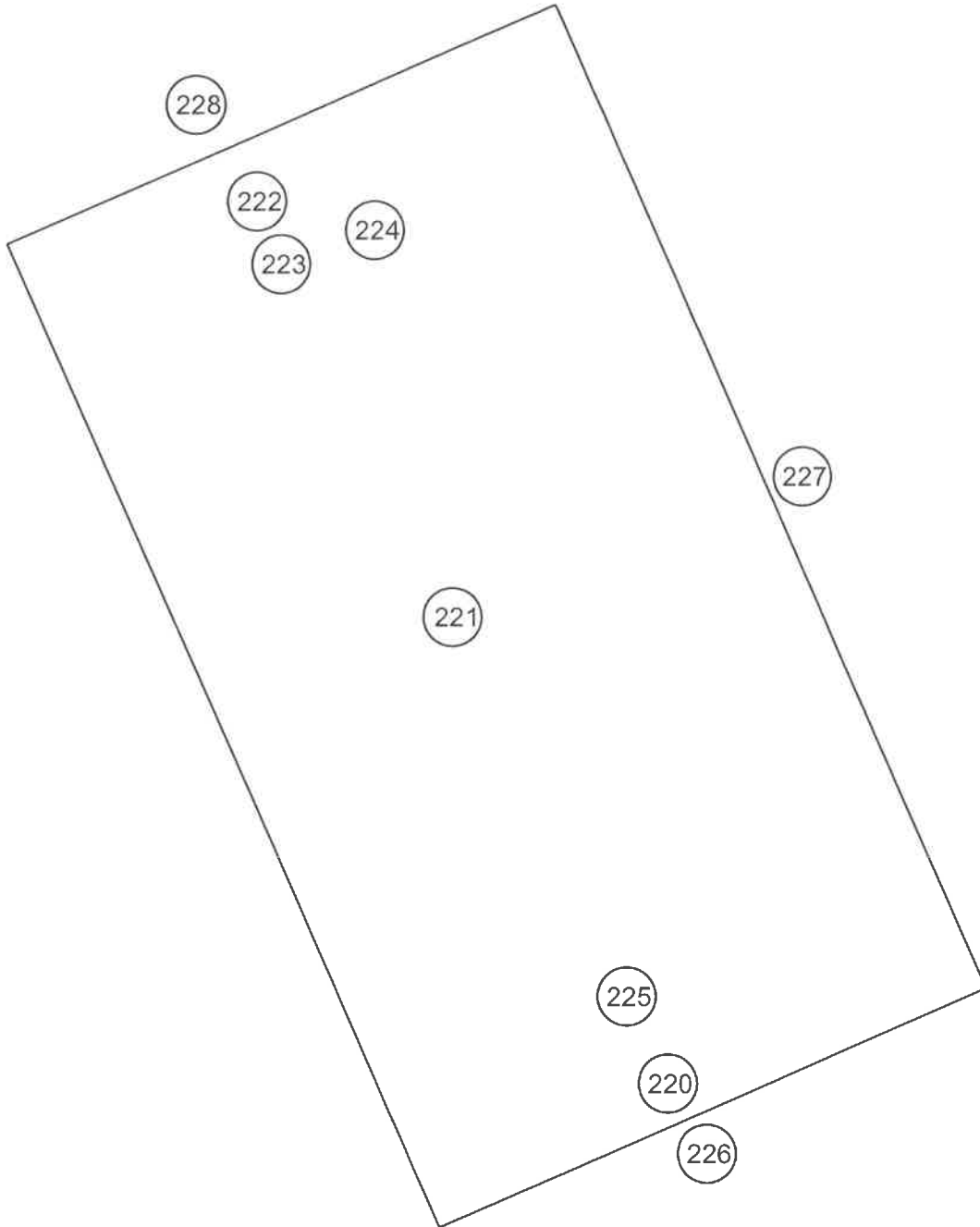


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
11224 Bombardier Avenue
Address: Norwalk, CA 90650

Drawing Not to Scale - © 2012

Administration Building



○ - PLM Sample Location



Client: Little Lake City SD

Project#: 18-Z0187-0028

Info:

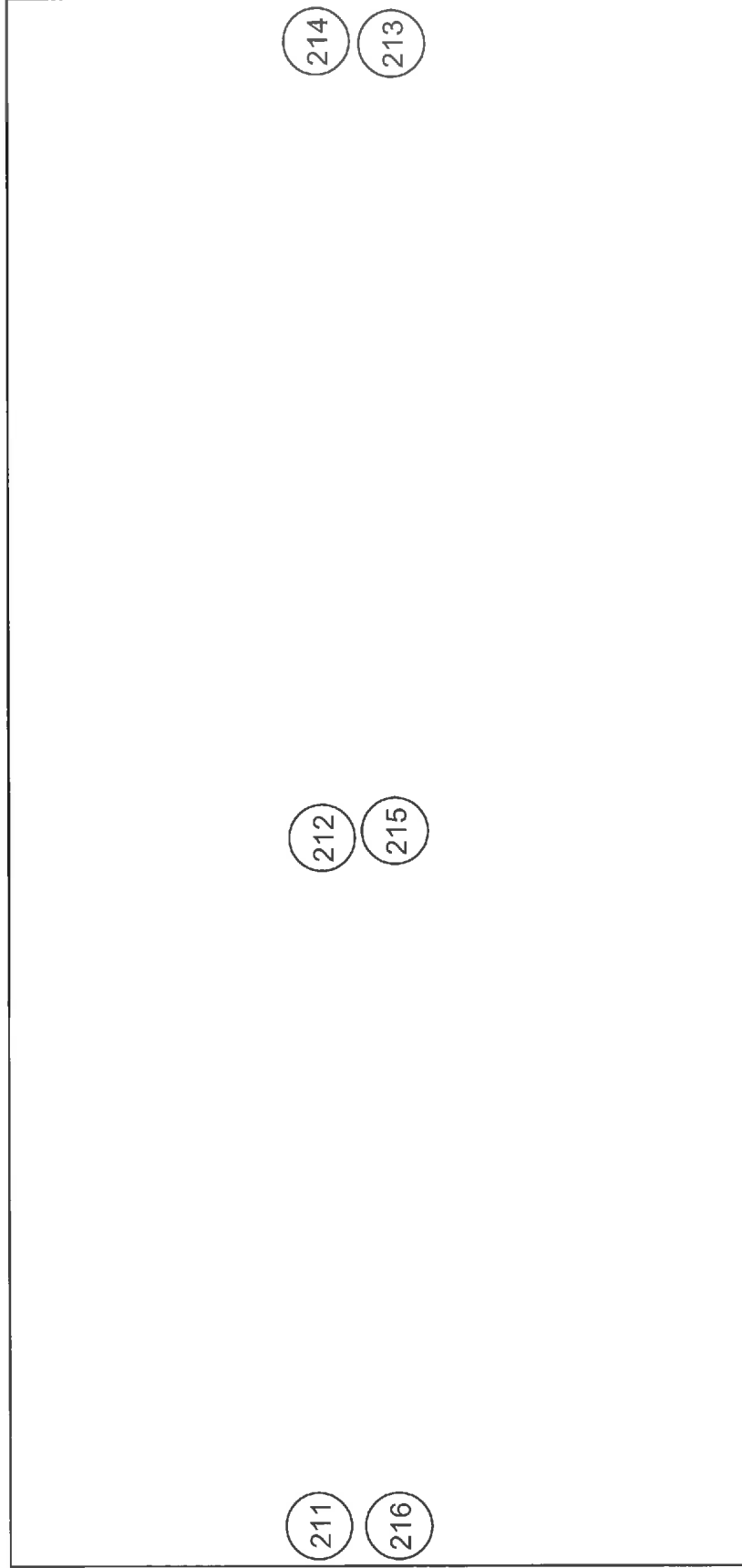


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Door Replacement Project
Address: 11224 Bombardier Avenue
Norwalk, California 90650

Drawing Not to Scale - © 2012

Building B



Overhang

○ - PLM Sample Location

Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: PLM Sample Locations

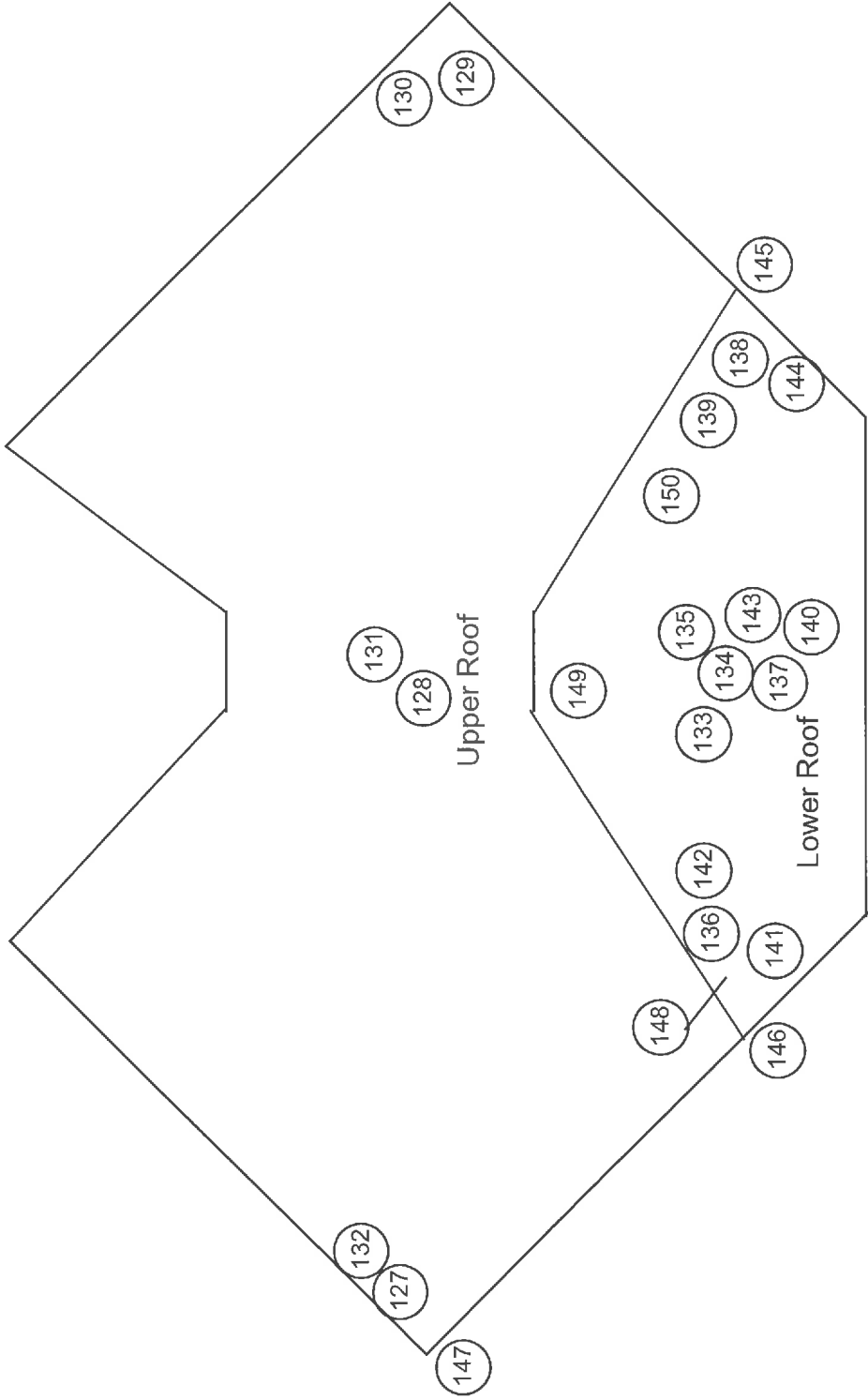


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

Building C



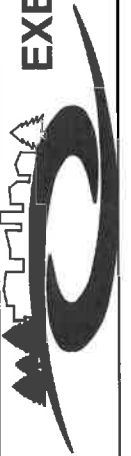
○ - PLM Sample Location



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: PLM Sample Locations

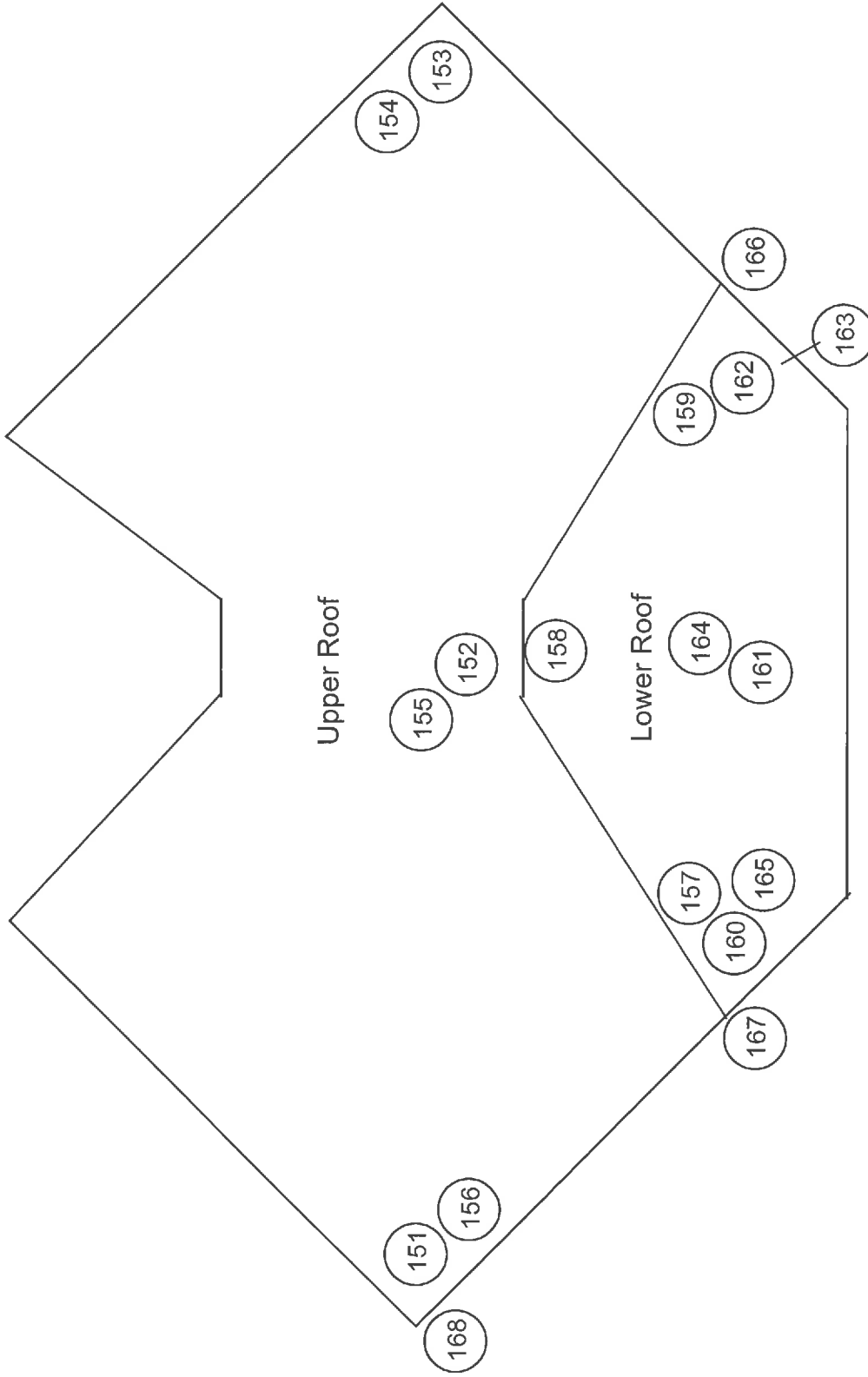


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

Building D



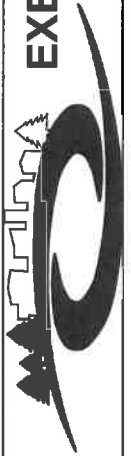
○ - PLM Sample Location



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: PLM Sample Locations

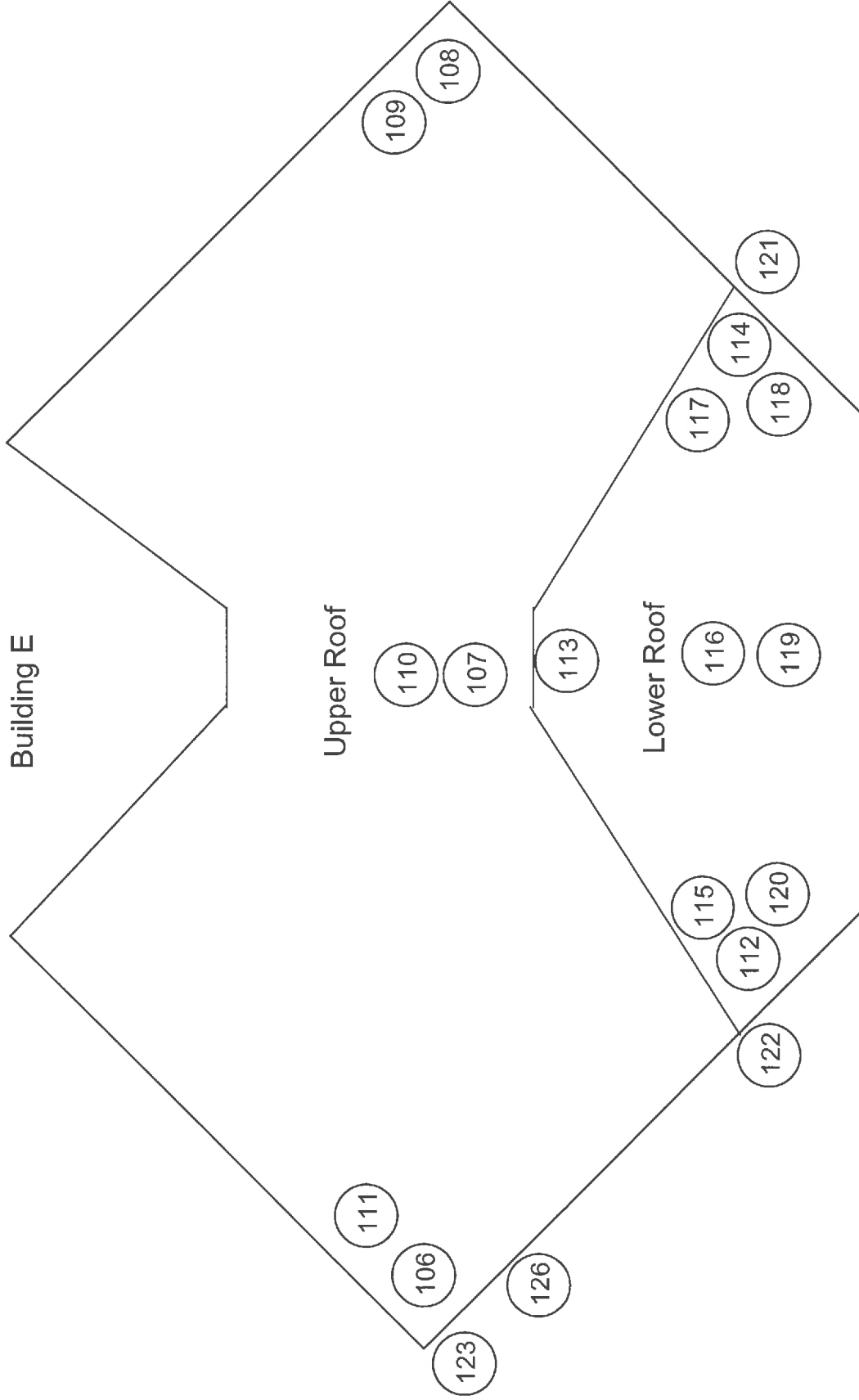


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

Building E



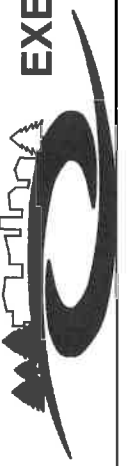
○ - PLM Sample Location



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: PLM Sample Locations

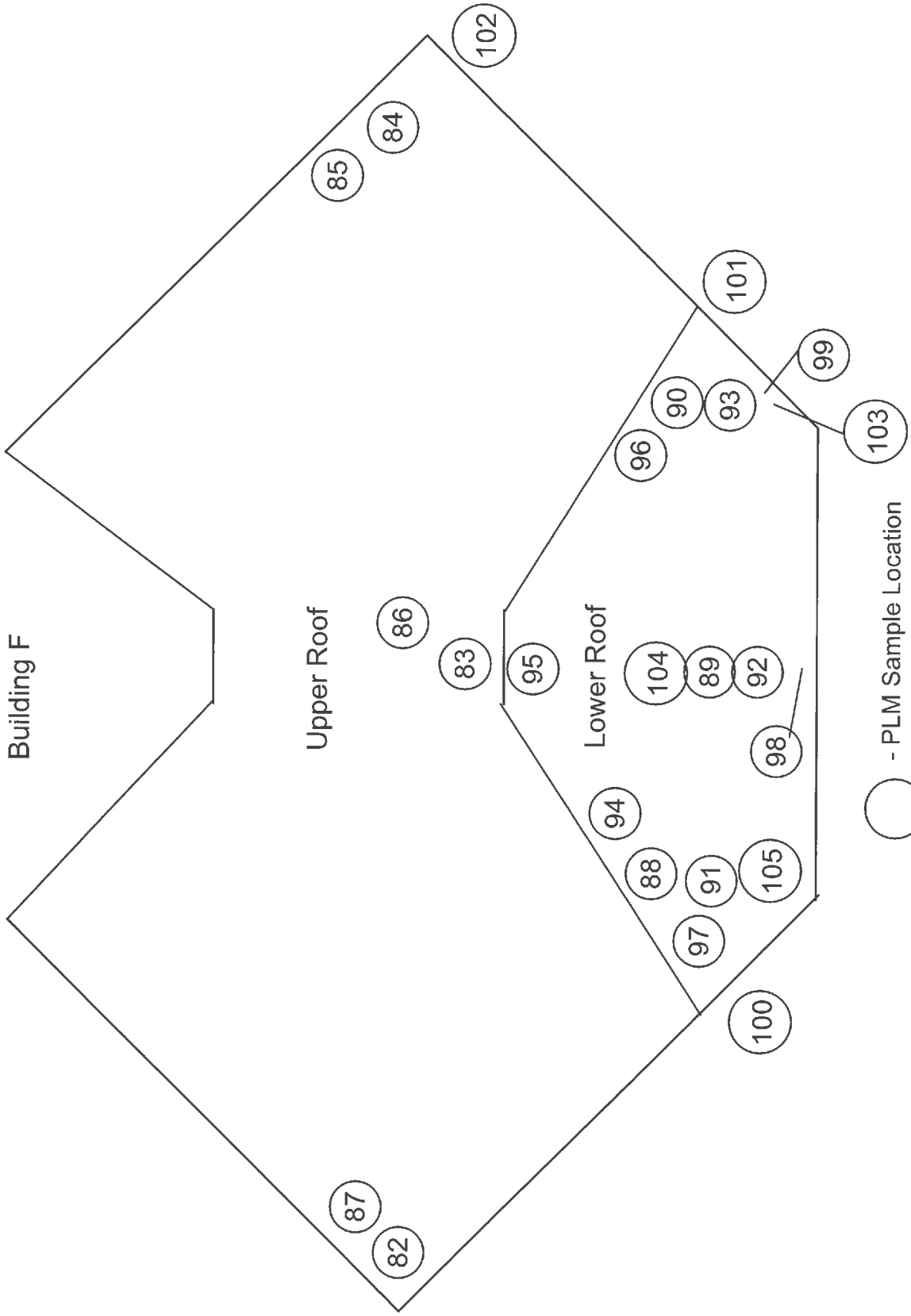


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
11224 Bombardier Avenue
Address: Norwalk, CA 90650

Drawing Not to Scale - © 2012

Building F



Client: Little Lake City SD

Project #: 18-Z0187-0028

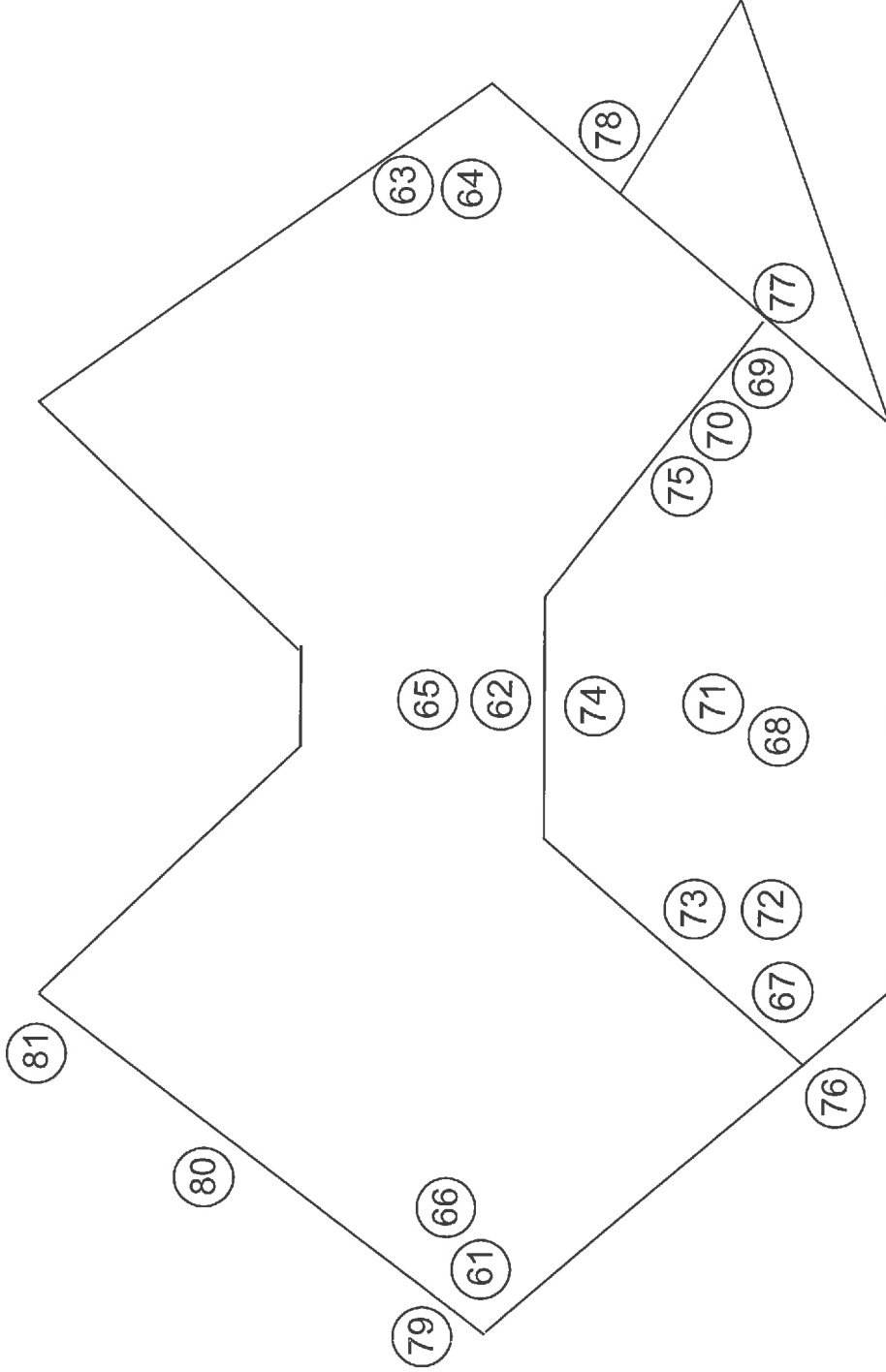
Info: PLM Sample Locations



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
11224 Bombardier Avenue
Address: Norwalk, CA 90650

Building G



○ - PLM Sample Location



Client: Little Lake City SD

Project #: 18-Z0187-0028

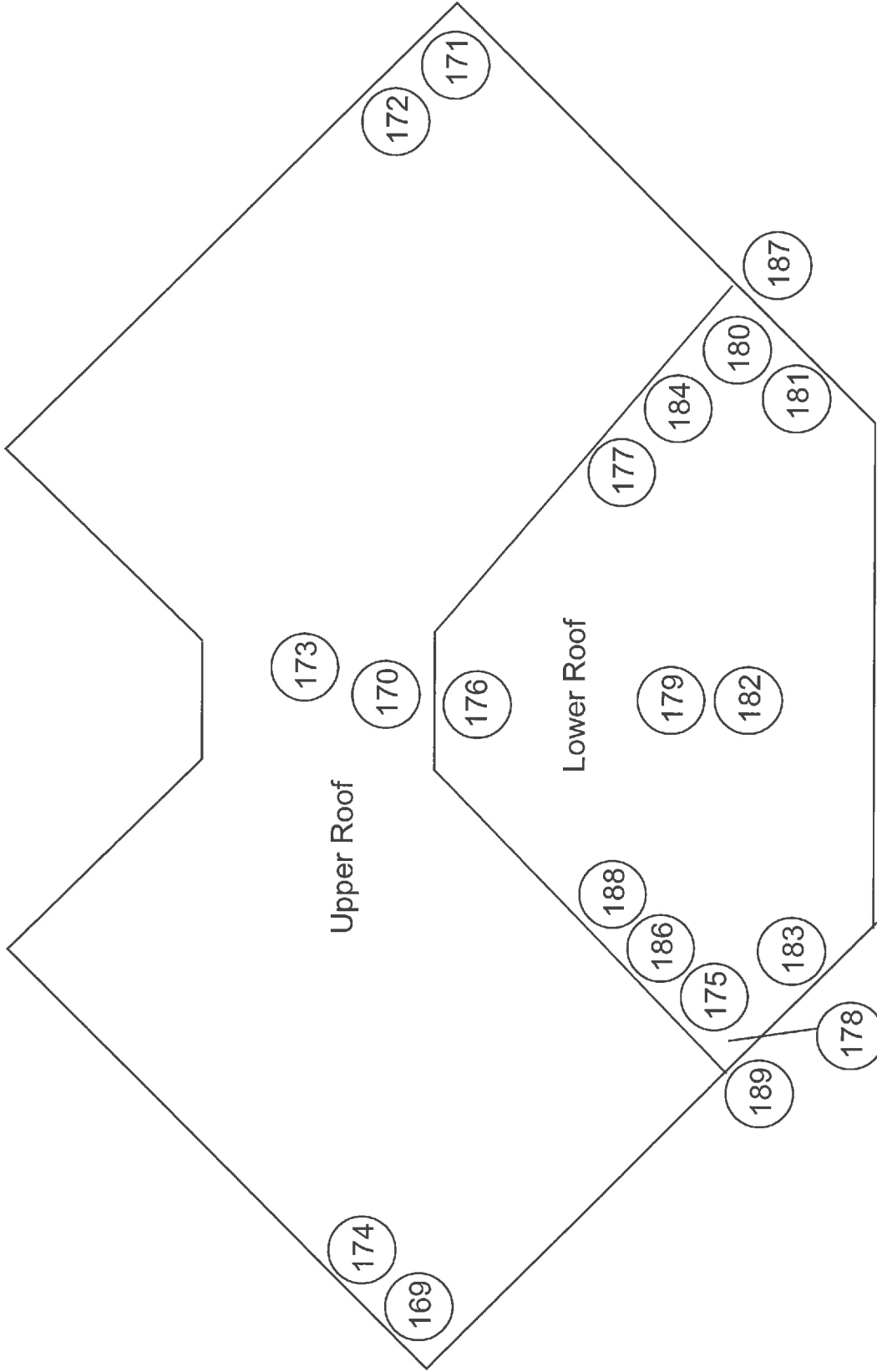
Info: PLM Sample Locations



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

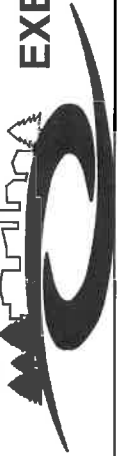
Building K



Client: Little Lake City SD

Project #: 18-Z0187-0028

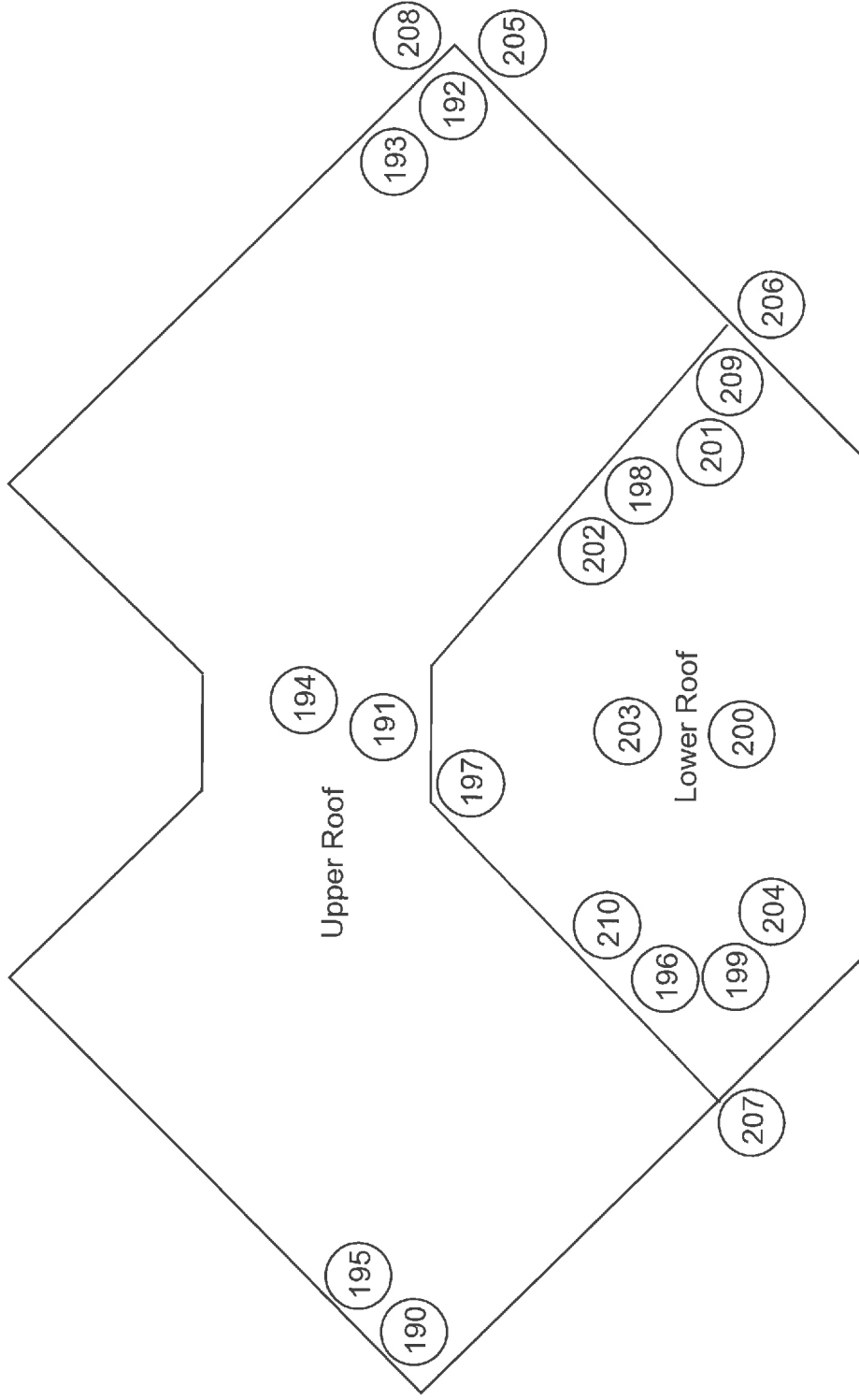
Info: PLM Sample Locations



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
11224 Bombardier Avenue
Address: Norwalk, CA 90650

Building J



Client: Little Lake City SD

Project #: 18-Z0187-0028

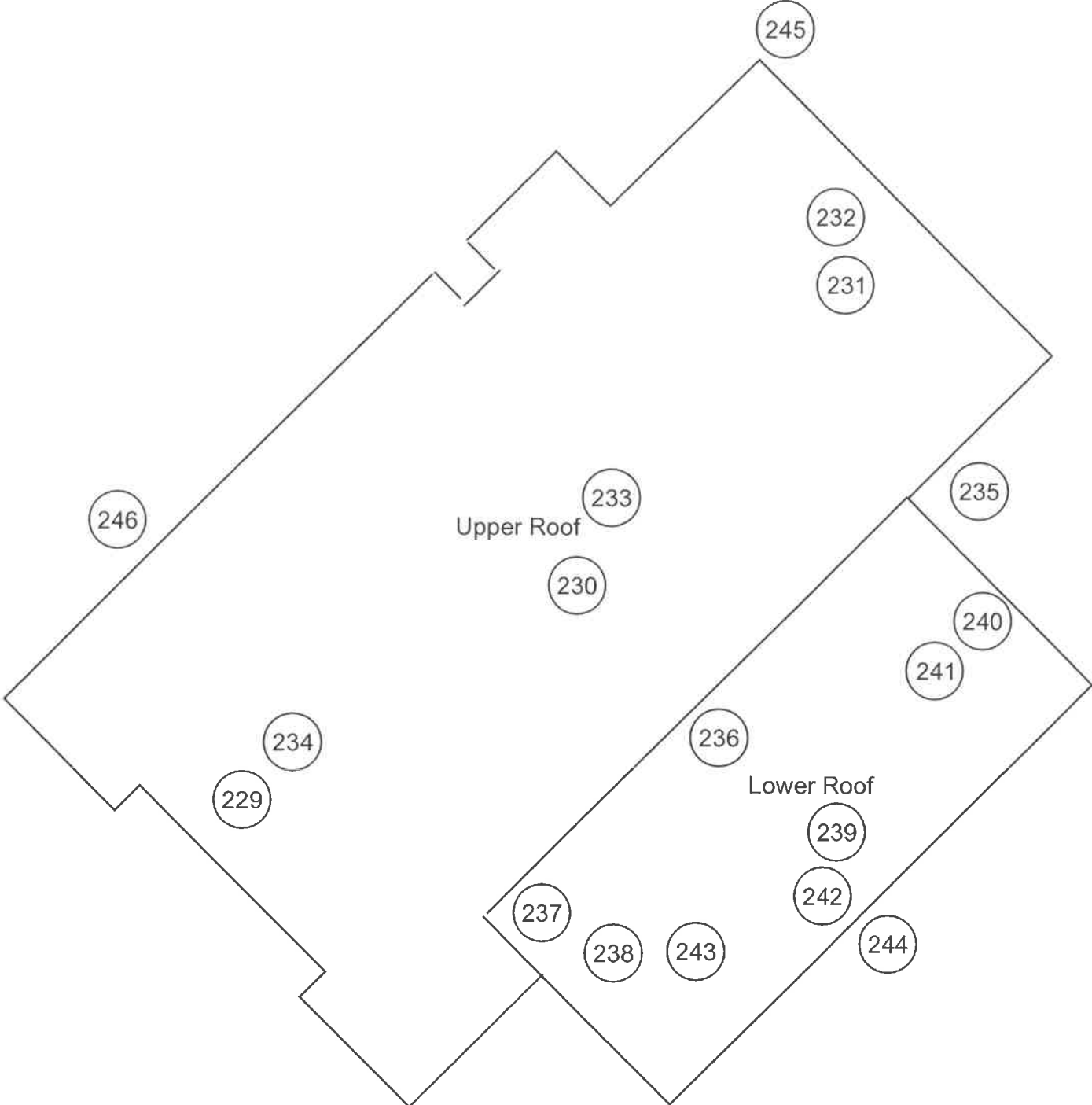
Info: PLM Sample Locations



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
11224 Bombardier Avenue
Address: Norwalk, CA 90650

Multi-Purpose Building



○ - PLM Sample Location



Client: Little Lake City SD

Project#: 18-Z0187-0028

Info: PLM Sample Locations

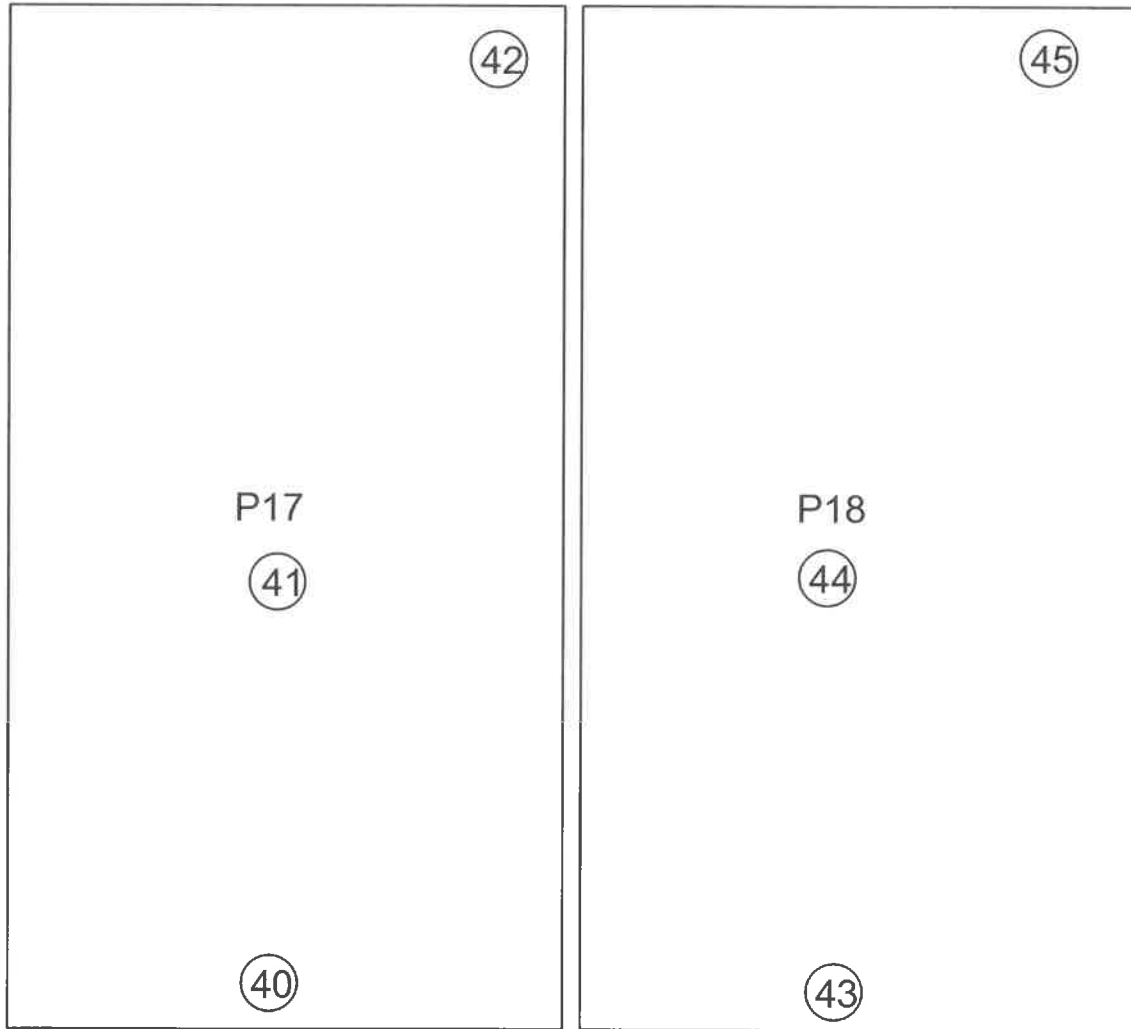


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, California 90650

Drawing Not to Scale - © 2012

Portable



○ - PLM Sample Location



Client: Little Lake City SD

Project#: 18-Z0187-0028

Info: PLM Sample Locations

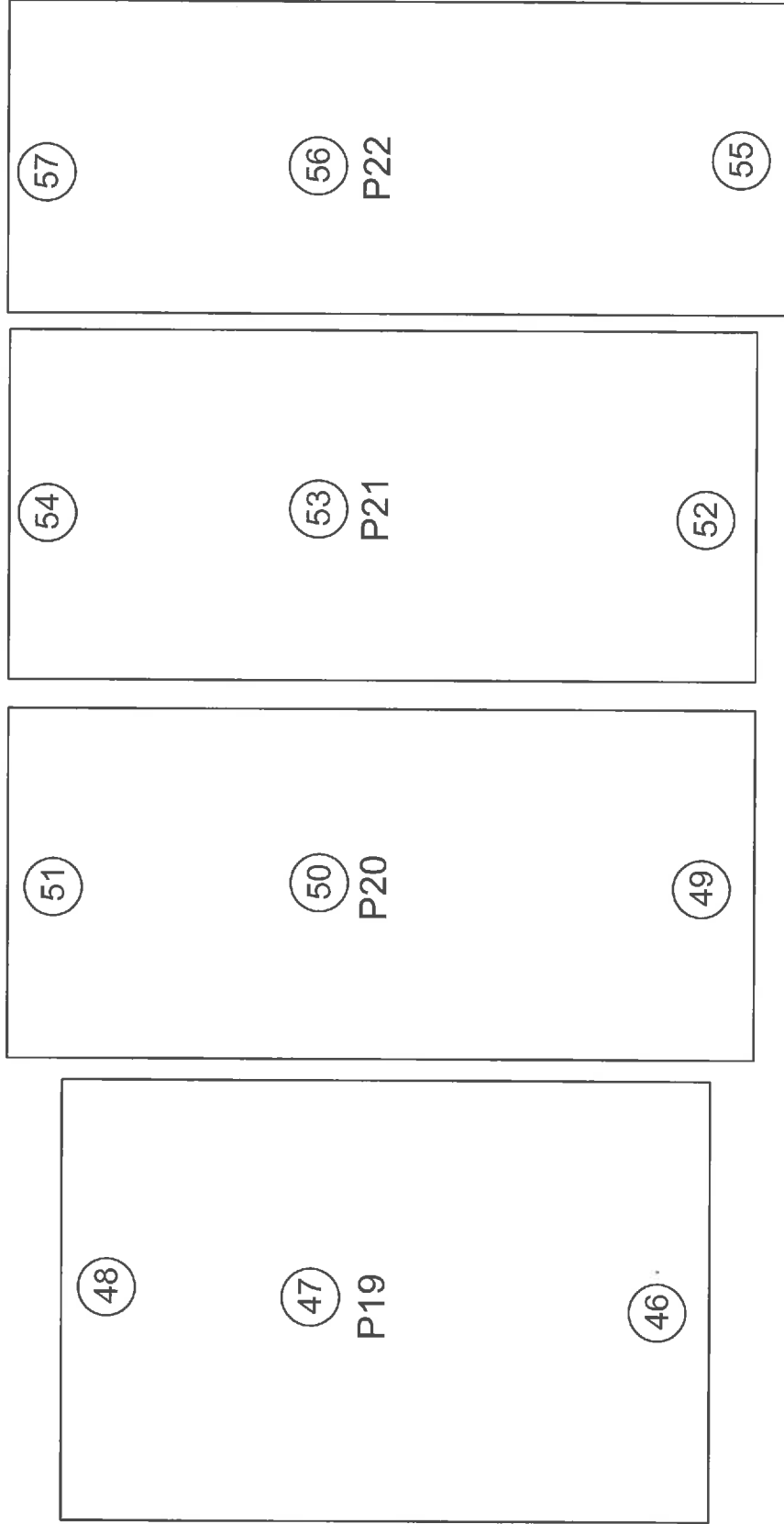


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, California 90650

Drawing Not to Scale - © 2012

Portable



○ - PLM Sample Location



Client: Little Lake City SD

Project #: 18-Z0187-0028

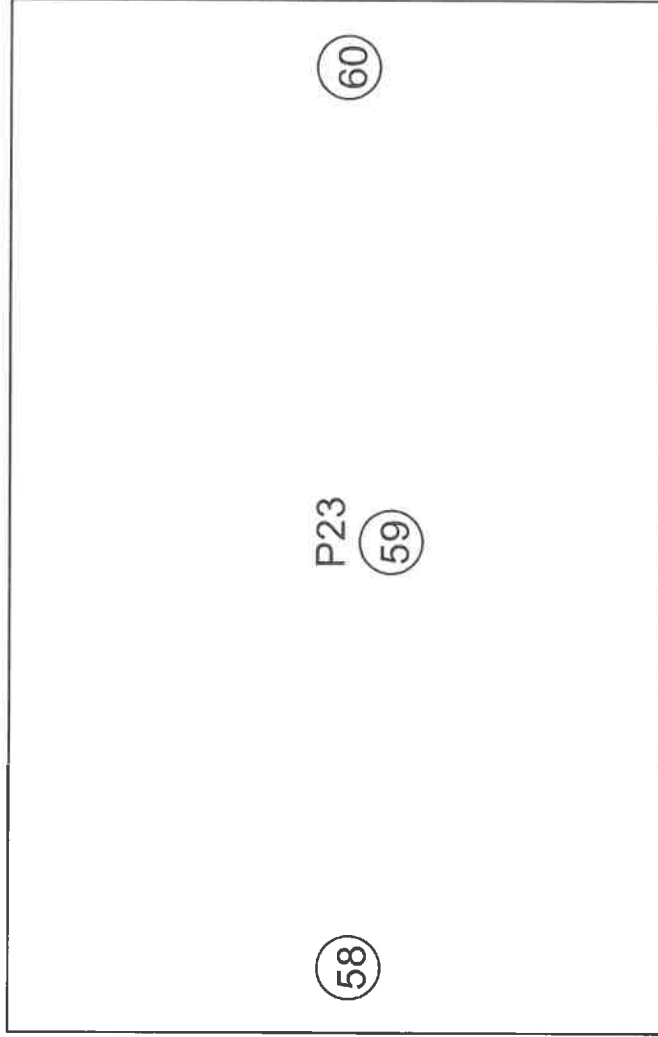
Info: PLM Sample Locations



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
11224 Bombardier Avenue
Address: Norwalk, CA 90650

Portable



○ - PLM Sample Location



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: PLM Sample Locations



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

**APPENDIX B – LIMITED LEAD-BASED PAINT/CERAMIC TILE INSPECTION
REPORT DATED MARCH 15, 2018**



Industrial Hygiene • Air Quality • Lead & Asbestos • Training • Health & Safety

LIMITED LEAD-BASED PAINT/CERAMIC TILE INSPECTION REPORT

Conducted at:

LAKELAND ELEMENTARY SCHOOL
ROOFING AND PAINTING PROJECTS
11224 BOMBARDIER AVENUE
NORWALK, CALIFORNIA 90650

Prepared for:

MR. BRENT GRIFFEN
DIRECTOR OF MAINTENANCE AND OPERATIONS AND CUSTODIAL SERVICES
LITTLE LAKE CITY SCHOOL DISTRICT
10515 SOUTH PIONEER BOULEVARD
SANTA FE SPRINGS, CALIFORNIA 90670

Prepared by:

EXECUTIVE ENVIRONMENTAL
310 EAST FOOTHILL BOULEVARD, SUITE 200
ARCADIA, CALIFORNIA 91006

Project Number EE 18-Z0187-0028
March 15, 2018

Report assembled by:

Yesenia G. Galeana
Technical Report Writer
Executive Environmental

Report generated/reviewed by:

Tim Galeana, CDPH No. 3732
Senior Project Manager
Executive Environmental

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- I. EXECUTIVE SUMMARY
- II. SAMPLING PROTOCOL
- III. SAMPLING METHODOLOGY
- IV. SAMPLE ANALYSIS
- V. CONCLUSIONS/RECOMMENDATIONS
- VI. DISCLAIMER/REPORT LIMITATIONS

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APPENDIX A – SITE DRAWINGS

APPENDIX B – XRF SUMMARY RESULTS

APPENDIX C – LEAD HAZARD EVALUATION REPORT

APPENDIX D – XRF PERFORMANCE CHARACTERISTICS SHEET

LIMITED LEAD-BASED PAINT/CERAMIC TILE INSPECTION

Project Number: EE 18-Z0187-0028

Client: Little Lake City School District
10515 South Pioneer Boulevard
Santa Fe Springs, California 90670

Site Location: Lakeland Elementary School
Roofing and Painting Projects
11224 Bombardier Avenue
Norwalk, California 90650

Site Use: School Property

Contact Person: Mr. Brent Griffen
Director of M&O and Custodial Services
Phone: (562) 868-8241

Inspection Date: February 21 thru 23, 26 and 27, 2018

Inspected By: Mr. George Valverde
Certified Lead Professional, CDPH #24605

Report Assembled By: Ms. Yesenia G. Galeana
Technical Report Writer

Report Generated/Reviewed By: Mr. Tim Galeana
Certified Lead Professional, CDPH # 3732

I. EXECUTIVE SUMMARY

Executive Environmental (EE) was retained by the Little Lake City School District to conduct a limited lead-based paint/ceramic tile inspection of permanent buildings, portables and covered walkways at Lakeland Elementary School, located at 11224 Bombardier Avenue, Norwalk, California. The inspection was conducted as a precursor to upcoming roofing and exterior painting projects. EE provided a California Department of Public Health Certified Lead Inspector to conduct the inspection. Regulated lead-based paint and/or ceramic tile was detected during this inspection. EE's Certified Lead Professional (CLP) conducted these services on February 21 thru 23, 26 and 27, 2018. *This is considered a limited inspection. The inspection was limited to exterior surfaces and components anticipated to be impacted by the roofing project and/or the exterior painting project, as directed by the client.*

II. SAMPLING PROTOCOL

According to the United States Department of Housing and Urban Development's (HUD) guideline document, Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing, and Section 1017 of Title X, Residential Lead-Based Paint Hazard Reduction Act of 1992, Public Law 102-550, paint found to have a lead concentration of

at least 1.0 mg/cm² (milligrams per centimeter squared) by X-Ray Fluorescence (XRF) analysis, or 0.5 percent (5000 parts per million) by weight, is regulated as lead-based paint.

Los Angeles County Childhood Lead Poisoning Prevention Program established in 1991, further regulates that paint found to have a lead concentration greater than 0.7 mg/cm² via XRF readings, or 0.06 weight-to-weight percent by Atomic Absorption Spectrometry (AAS) analysis, is considered to be lead-based paint. The Los Angeles County 0.7 mg/cm² action level was used for determining the lead-based paint in this inspection because it is more stringent than the HUD guidelines.

Any material containing any detectable level of lead is subject to the Occupational Safety and Health Administration's (OSHA) Lead Exposure in Construction Rule 29 Code of Federal Regulation (CFR) 1926.62 and California Code of Regulations Title 8, Section 1532.1 Lead (8CCR1532.1) and Title 8, Section 5198, Lead (8CCR5198). All work that disturbs this type of material must be performed in accordance with this and any other applicable standards.

All facilities built prior to 1979 for residential buildings and prior to 1993 for schools are suspect for lead-containing materials. Federal and state regulations recognize only the following methods of identification: analysis by an XRF instrument, paint bulk sample collection and analysis, or a combination of both. This inspection was conducted via XRF instrumentation. The parameters used to interpret the XRF results are outlined in the HUD guidelines and the XRF Performance Characteristics Sheets (PCS).

III. SAMPLING METHODOLOGY

A visual inspection of the exterior of the permanent buildings, portables and covered walkways was conducted by EE's CLP to identify major site features and surfaces and/or components suspected of being coated with lead-based paint or ceramic glaze that will be impacted by the roofing and painting projects. After identifying the materials suspected of being coated with a lead-based paint, EE grouped the components, substrates, and room equivalents into testing combinations. A testing combination is defined as the room equivalent, component, and substrate. A room equivalent is an identifiable part of a building (e.g., classrooms, restrooms, mechanical rooms, exterior). Color does not accurately indicate painting history, and is not included when assigning testing combinations. If there was any reason to suspect that materials may have been installed or painted at different times even though they appeared uniform, they were assigned to separate testing combinations.

Following the visual inspection, screening for the presence of lead-based paint and/or glaze was performed on-site using a portable XRF instrument. The XRF has the ability to measure lead content in paint within the range of 0 to 50 milligrams per centimeter squared (mg/cm²). The on-site inspection capability of the XRF instrument typically reduces the number of paint-chip samples that may need to be collected and sent for laboratory analysis. The portable XRF instrument used in this inspection was manufactured by Niton Corporation.

The following specifications apply to the Niton XRF:

- Ability to report both the K and L shell line x-ray emission energies simultaneously and report the lead concentration in mg/cm².
- Accuracy for a single reading on all building materials within 0.2 mg/cm², at 95 percent confidence, at 0 to 1 mg/cm².

- Equipped with a 40 milli-curie (mCi) cadmium, 109-sealed, radioactive source. Substrate effects are automatically corrected through a complex algorithm and calibration.

IV. SAMPLE ANALYSIS

According to local, state, and federal standards, the following surfaces and/or components that were analyzed with the Niton XRF instrument during this inspection are considered to be coated with a regulated lead-based paint or ceramic glaze.

XRF SAMPLE ANALYSIS DATA Lakeland Elementary School 11224 Bombardier Avenue Norwalk, California 90650				
Location	Component	Substrate	Estimate Quantity	XRF Result Mg/cm ²
Covered Walkways^A				
Covered walkway No. 2	Ceiling	Wood	1,800 Square Feet	0.7
	Beam	Wood	400 Linear Feet	5.4
Covered Walkway No. 2 Covered Walkway No. 4 Covered Walkway No. 6	Fascia	Wood	1,020 Linear Feet	1.5-2.3
Covered walkway No. 5	Downspout	Metal	7 Linear Feet	0.7
No regulated lead-based paint and/or ceramic glaze was identified on the surfaces or components of the Covered Walkways No. 1 and 3.				
Portables				
No regulated lead-based paint and/or ceramic glaze was identified on the exterior surfaces or components of the following Portables 17, 18, 19, 20, 21, 22 and 23.				
Campus				
No regulated lead-based paint and/or ceramic glaze was identified on the exterior surfaces or components of the Metal Storage Bin, Basketball Court, Handball Court, Playgrounds, Field, Wood Shed, Parking Lots, Lunch Canopy, Flag pole, School Sign, Perimeter Gates and Fences.				

Note: This table must be used in conjunction with the entire report.

^A NOTE: Paint on the ceiling and beams of covered walkway #2 and fascia of covered walkways #2, 4 & 6 were identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

XRF SAMPLE ANALYSIS DATA				
Lakeland Elementary School 11224 Bombardier Avenue Norwalk, California 90650				
Location	Component	Substrate	Estimate Quantity	XRF Result Mg/cm²
Building G^B				
Exterior – side B	Wall	Wood	680 Square Feet	3.8
	Door (with windows) and transom	Metal	2 Total	1.6-2.2
	Door frame (with windows)	Metal	60 Linear Feet	2.5
Exterior – side C	Downspout	Metal	8 Linear Feet	1.7
Exterior	Overhang	Wood	650 Square Feet	1
	Fascia	Wood	110 Linear Feet	1.6
Exterior – sides C & D	Window components	Metal	228 Linear Feet	0.8-1.6
Exterior – side D	Vent	Metal	2 Square Feet	2.2
Exterior – sides C & D	Window flashing	Metal	62 Linear Feet	1.1
Building F^C				
Exterior – side B	Wall	Wood	680 Square Feet	2.4
Exterior	Window components	Metal	380 Linear Feet	1.1-1.2
Exterior – side B	Door (with windows) and transom	Metal	2 Total	1.5-2.6
	Door frame (with windows)	Metal	60 Linear Feet	1.8
Exterior – side D	Mesh window cover	Metal	8 Square Feet	1.4
Exterior – side D	Vent	Metal	2 Square Feet	1.4
Exterior	Overhang	Wood	1,250 Square Feet	1.2-2.7
	Fascia	Wood	56 Linear Feet	0.9
Exterior – sides C & D	Window flashing	Metal	62 Linear Feet	1.1

Note: This table must be used in conjunction with the entire report.

^B NOTE: Paint on the wood walls and overhang were identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

^C NOTE: Paint on the wood walls, fascia and overhang were identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

XRF SAMPLE ANALYSIS DATA				
Lakeland Elementary School 11224 Bombardier Avenue Norwalk, California 90650				
Location	Component	Substrate	Estimate Quantity	XRF Result Mg/cm²
Building E^D				
Exterior – side B	Wall	Wood	680 Square Feet	1.8
Exterior	Window components	Metal	380 Linear Feet	0.9-1.2
Exterior – side B	Door (with windows) and transom	Metal	2 Total	1.6-2.7
	Door frame (with windows)	Metal	60 Linear Feet	3.7
Exterior	Overhang	Wood	1,250 Square Feet	1.4-2.1
	Fascia	Wood	56 Linear Feet	1.4
	Window flashing	Metal	62 Linear Feet	1.4
Building B^E				
Exterior	Door trim, includes transom	Wood	100 Square Feet	1.8
	Window components	Metal	384 Linear Feet	2
	Fascia	Wood	360 Square Feet	1.2-2.7
	Vent	Metal	4 Square Feet	1.7
	Overhang	Wood	1,280 Square Feet	1.1
	Downspout	Metal	88 Linear Feet	1-1.4

Note: This table must be used in conjunction with the entire report.

^D NOTE: Paint on the wood walls and overhang were identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

^E NOTE: Paint on the wood overhang was identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

XRF SAMPLE ANALYSIS DATA				
Lakeland Elementary School 11224 Bombardier Avenue Norwalk, California 90650				
Location	Component	Substrate	Estimate Quantity	XRF Result Mg/cm ²
Building C				
Exterior – side D	Vent	Metal	2 Square Feet	1.9
Building D^F				
Exterior – side B	Wall	Wood	680 Square Feet	2
Exterior	Window components	Metal	380 Linear Feet	0.8-1.2
Exterior – side B	Door (with windows) and transom	Metal	2 Total	1.3-2.4
	Door frame (with windows)	Metal	60 Linear Feet	1.9
Exterior	Overhang	Wood	1,250 Square Feet	0.9-1.3
Exterior – side D	Window flashing	Metal	62 Linear Feet	1.3
Building K^G				
Exterior – side B	Door (with windows) and transom	Metal	2 Total	0.9-1
	Door frame (with windows)	Metal	60 Linear Feet	1.2
Exterior	Fascia	Wood	288 Linear Feet	0.9-1.1
Building J				
No regulated lead-based paint and/or ceramic glaze was identified on the exterior surfaces or components of Building J.				

^F NOTE: Paint on the wood walls was identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

^G NOTE: Paint on the wood fascia was identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

XRF SAMPLE ANALYSIS DATA				
Lakeland Elementary School 11224 Bombardier Avenue Norwalk, California 90650				
Location	Component	Substrate	Estimate Quantity	XRF Result Mg/cm²
Multi-Purpose Building				
No regulated lead-based paint and/or ceramic glaze was identified on the exterior surfaces or components of Multi-Purpose Building.				
Administration Building^H				
Exterior	Window components	Metal	650 Linear Feet	0.8-1.6
	Door (with windows) and transom	Wood	88 Linear Feet	1.8-1.9
	Vent	Metal	4 Square Feet	1.1
	Overhang	Wood	3,200 Square Feet	1.4

Note: This table must be used in conjunction with the entire report.

V. CONCLUSIONS/RECOMMENDATIONS

EE conducted a limited lead-based paint and/or ceramic glaze inspection of the permanent buildings, portables and covered walkways at Lakeland Elementary School, located at 11224 Bombardier Avenue, Norwalk, California. The following conclusions and/or recommendations apply:

Limited Lead-Based Paint/Ceramic Tile Inspection

- Exterior painted surfaces and components of the permanent buildings, portables and covered walkways at Lakeland Elementary School were tested via the Niton XRF for the presence of lead.
- The items listed in the previous table were identified as being coated with a regulated lead-based paint and/or ceramic glaze.
- The surfaces/components were observed to be in intact to poor condition during this inspection.
- A fully representative number of XRF readings were taken at the project site. The results of these assays are presented in the XRF Summary Results spreadsheets.

It is recommended that all renovation, remodelling, construction, or demolition actions that might potentially disturb surfaces covered with lead-based paint and/or ceramic glaze be performed by properly trained and qualified personnel.

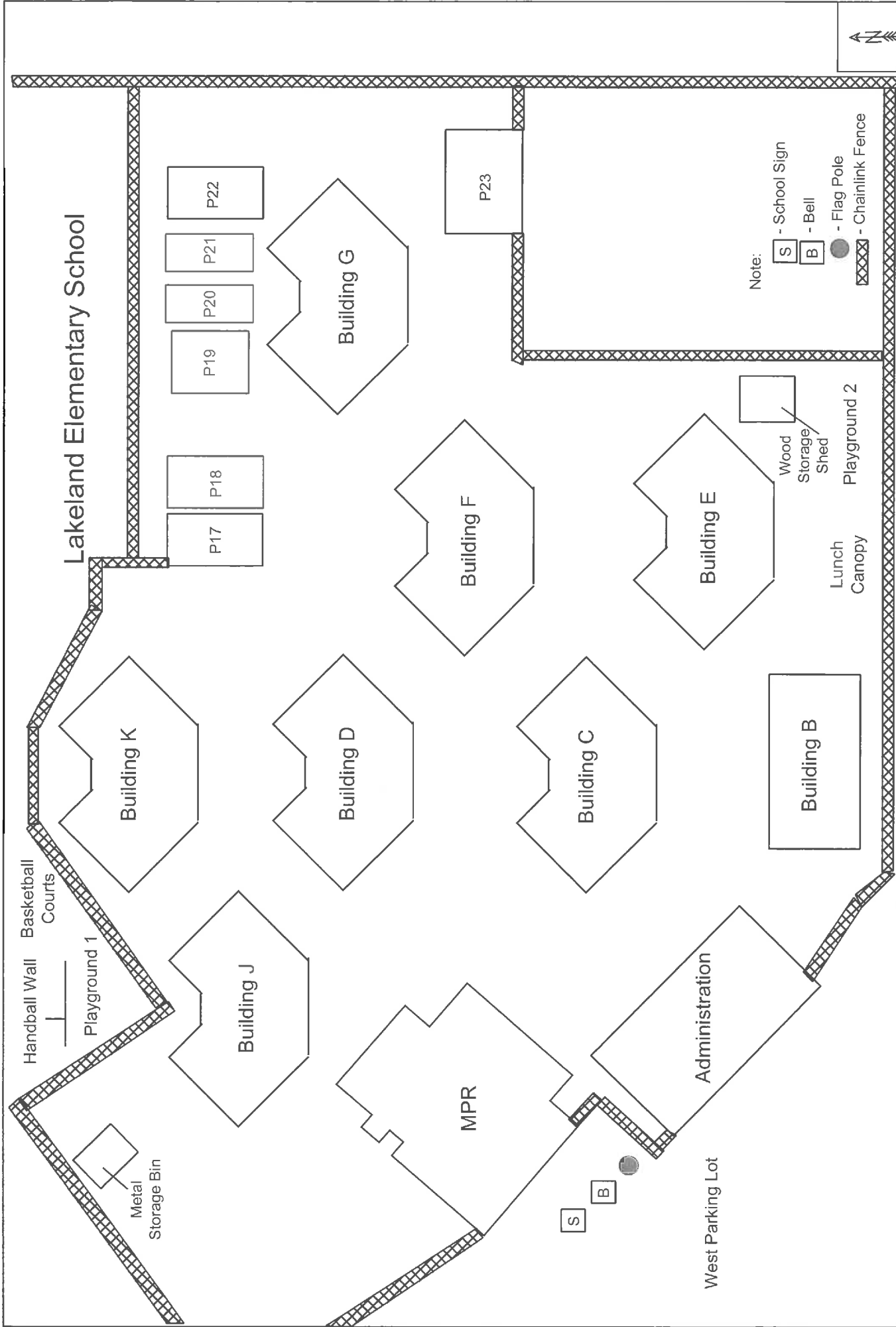
^H NOTE: Paint on the wood fascia was identified as being in poor condition (peeling). District should consider stabilization of peeling paint and clean-up of visible debris as soon as possible.

VI. DISCLAIMER/REPORT LIMITATIONS

All reports and recommendations are based on conditions and practices observed and information made available to Executive Environmental (EE) by the client and the designated sites/facilities on the days sampling was conducted. This report does not purport to set forth all hazards, nor to indicate that other hazards do not exist. No responsibility is assumed by EE for the control or correction of conditions or practices existing at the facilities, or at any other premises surveyed by EE, for and on the behalf of the client. Services provided by EE shall be governed by the standard of practice for professional services measured at the time those services are rendered.

All information contained in this report is proprietary and limited to the scope of services, parameters of the analytical methods used and the conditions present at the time of this inspection. Any references to quantities are considered estimates and are not to be construed as actual.

APPENDIX A – SITE DRAWINGS



Lakeland Elementary School

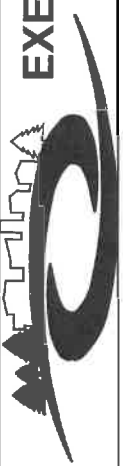
Project #: 18-Z0187-0028

Info: Campus Map

Client: Little Lake City SD

Site: Lakeland ES - Roofing and Painting Project
 Address: 11224 Bombardier Avenue
 Norwalk, CA 90650

EXECUTIVE ENVIRONMENTAL
 HEALTH & SAFETY SIMPLIFIED

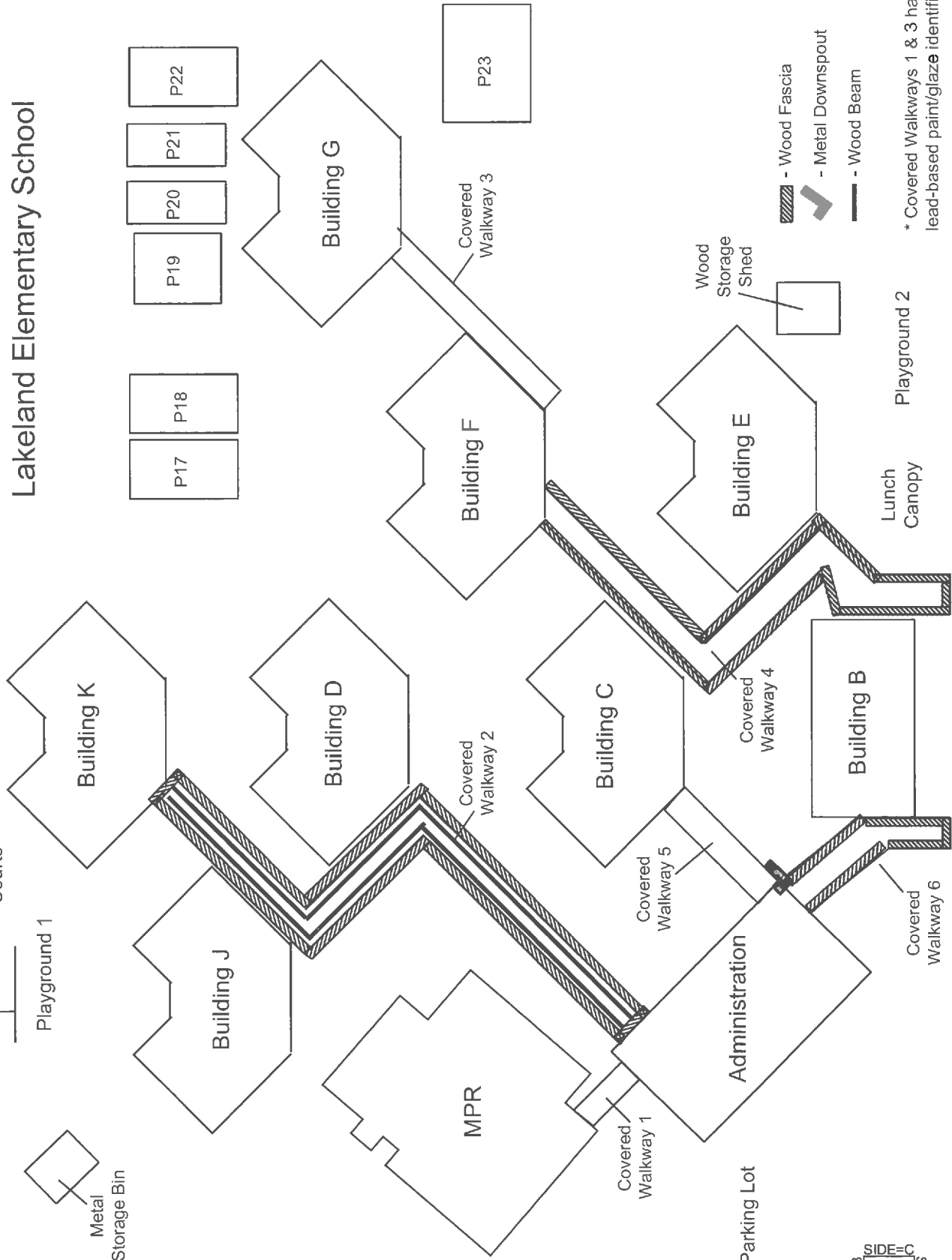


Drawing Not to Scale - © 2012

Lakeland Elementary School

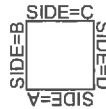
Handball Wall
Basketball Courts
Playground 1

Metal Storage Bin



- Wood Fascia
- Metal Downspout
- Wood Beam

* Covered Walkways 1 & 3 have no lead-based paint/glaze identified*



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: Lead-Based Paint/Glaze Identified

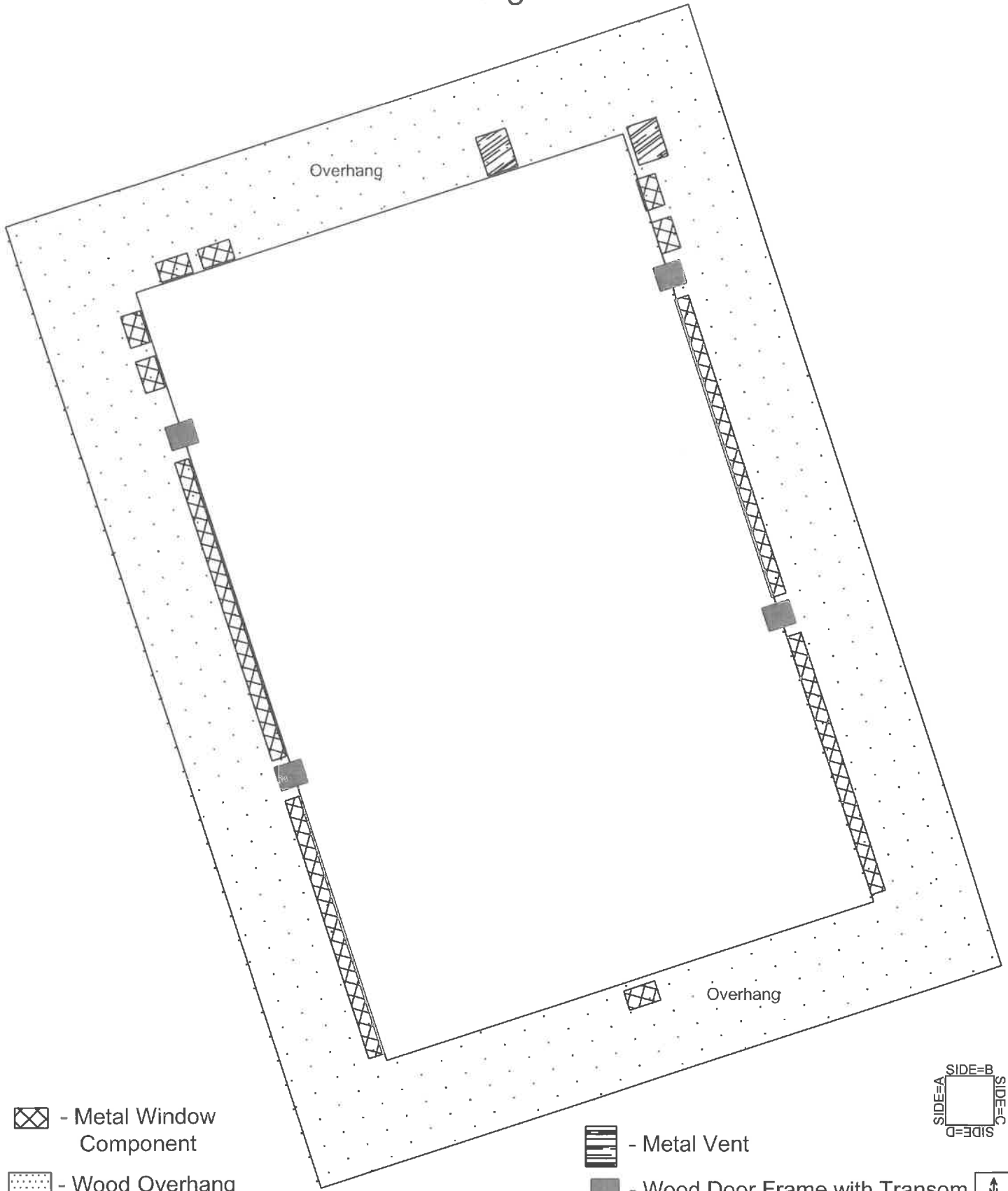




EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED



Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

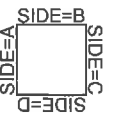
Drawing Not to Scale - © 2012

Administration Building



-  - Metal Window Component
-  - Wood Overhang

-  - Metal Vent
-  - Wood Door Frame with Transom



Client: Little Lake City SD

Project#: 18-Z0187-0028

Info: Lead-Based Paint/Glaze Identified

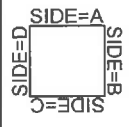
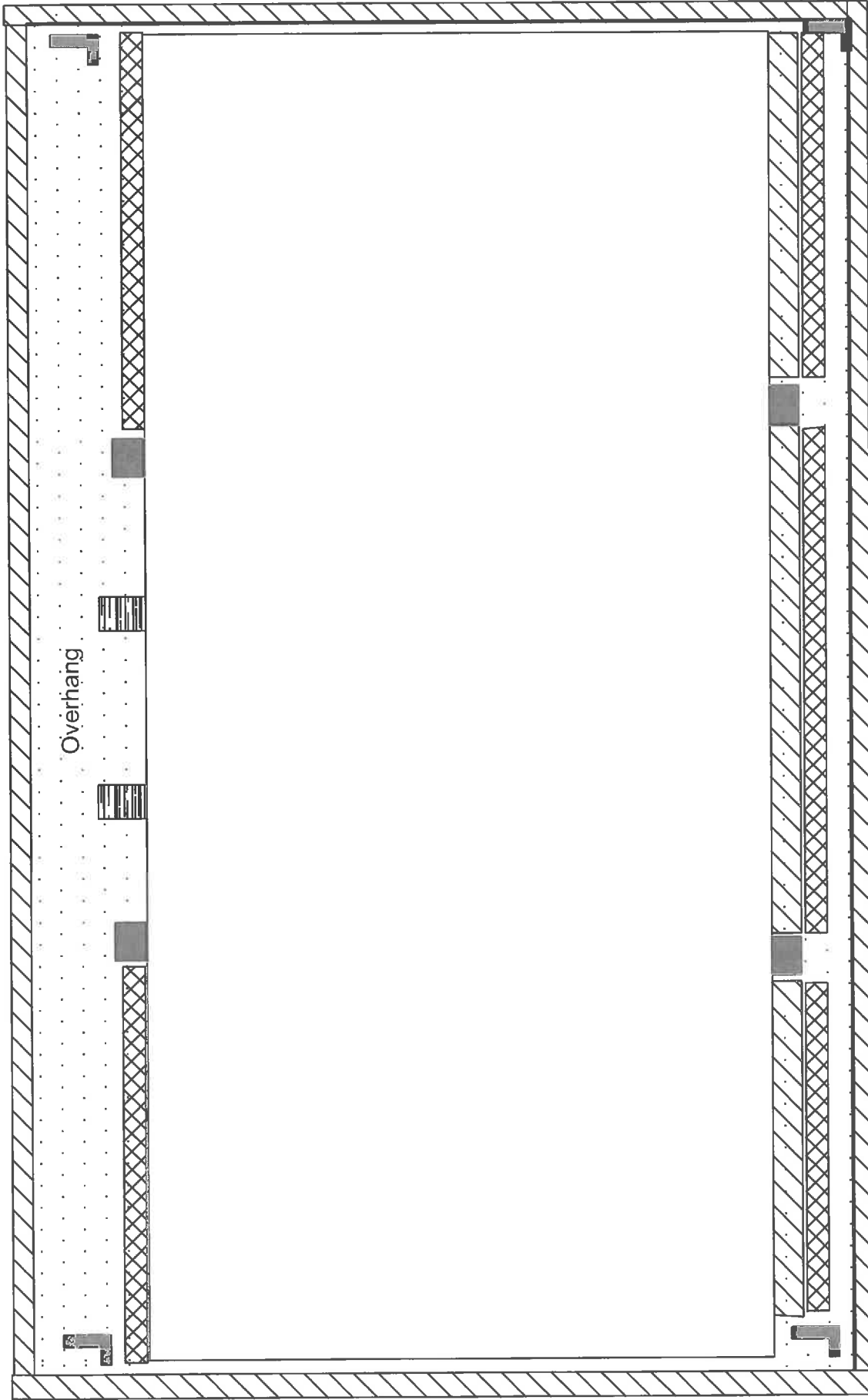








EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Door Replacement Project
Address: 11224 Bombardier Avenue
Norwalk, California 90650

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Building B

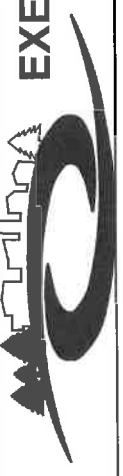


-  - Wood Overhang
-  - Wood Door Trim includes Transom
-  - Wood Fascia
-  - Metal Window Components
-  - Metal Downspout
-  - Metal Vent

Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: Lead-Based Paint/Glaze Identified

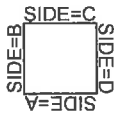
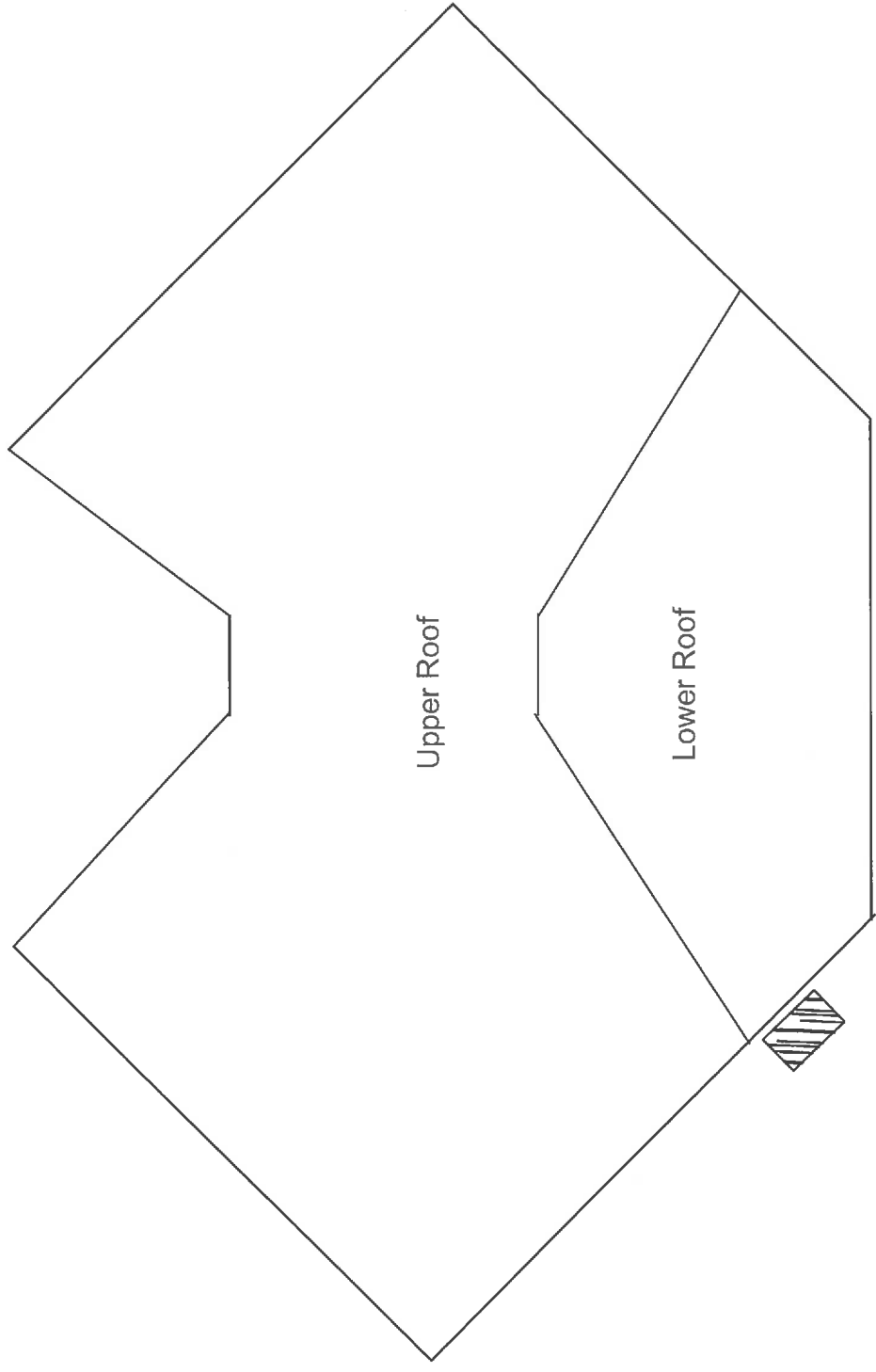


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

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Building C



- Metal Vent



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: Lead-Based Paint/Glaze Identified

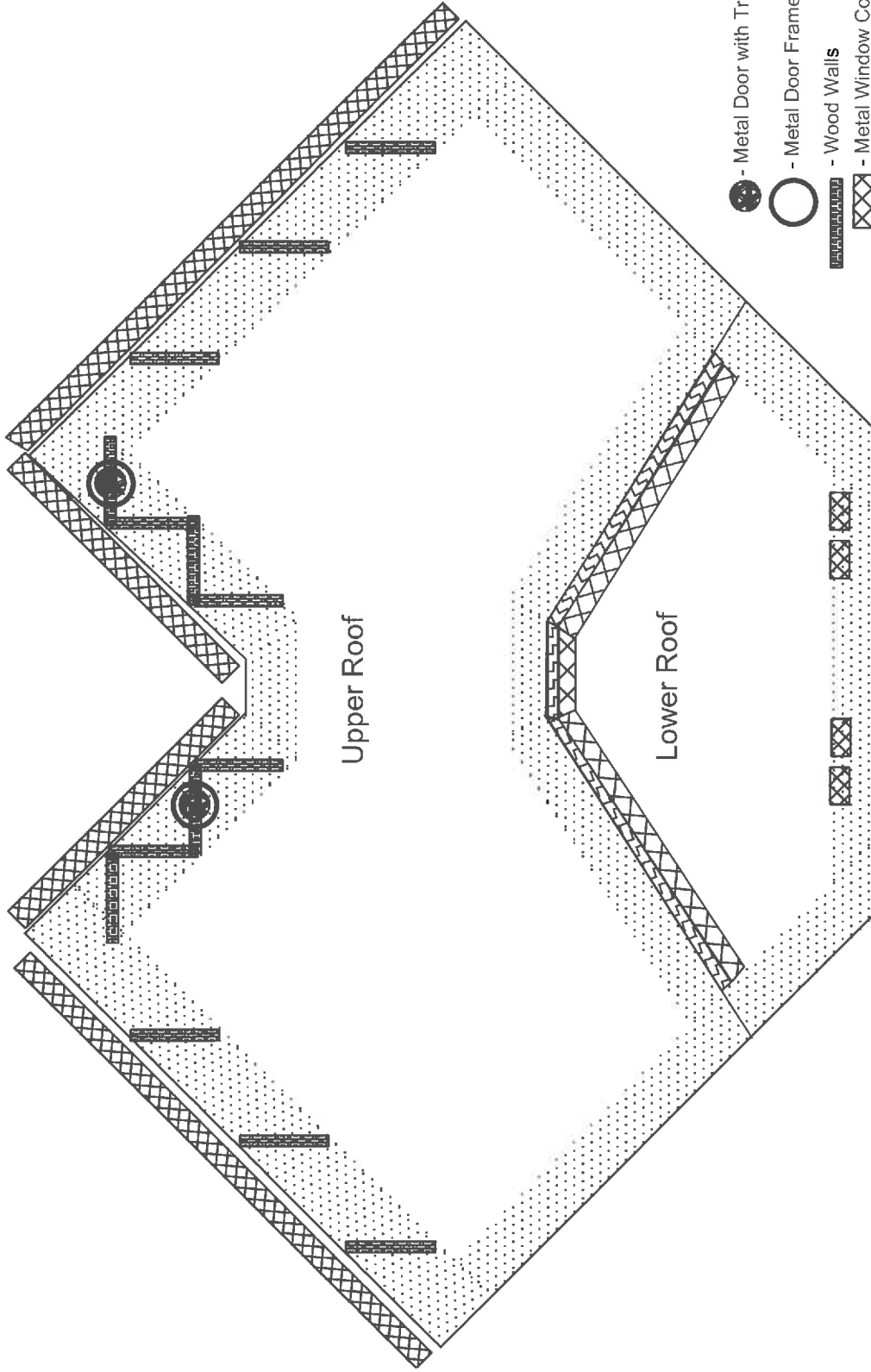


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

Building D



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: Lead-Based Paint/Glaze Identified

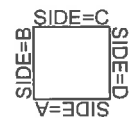
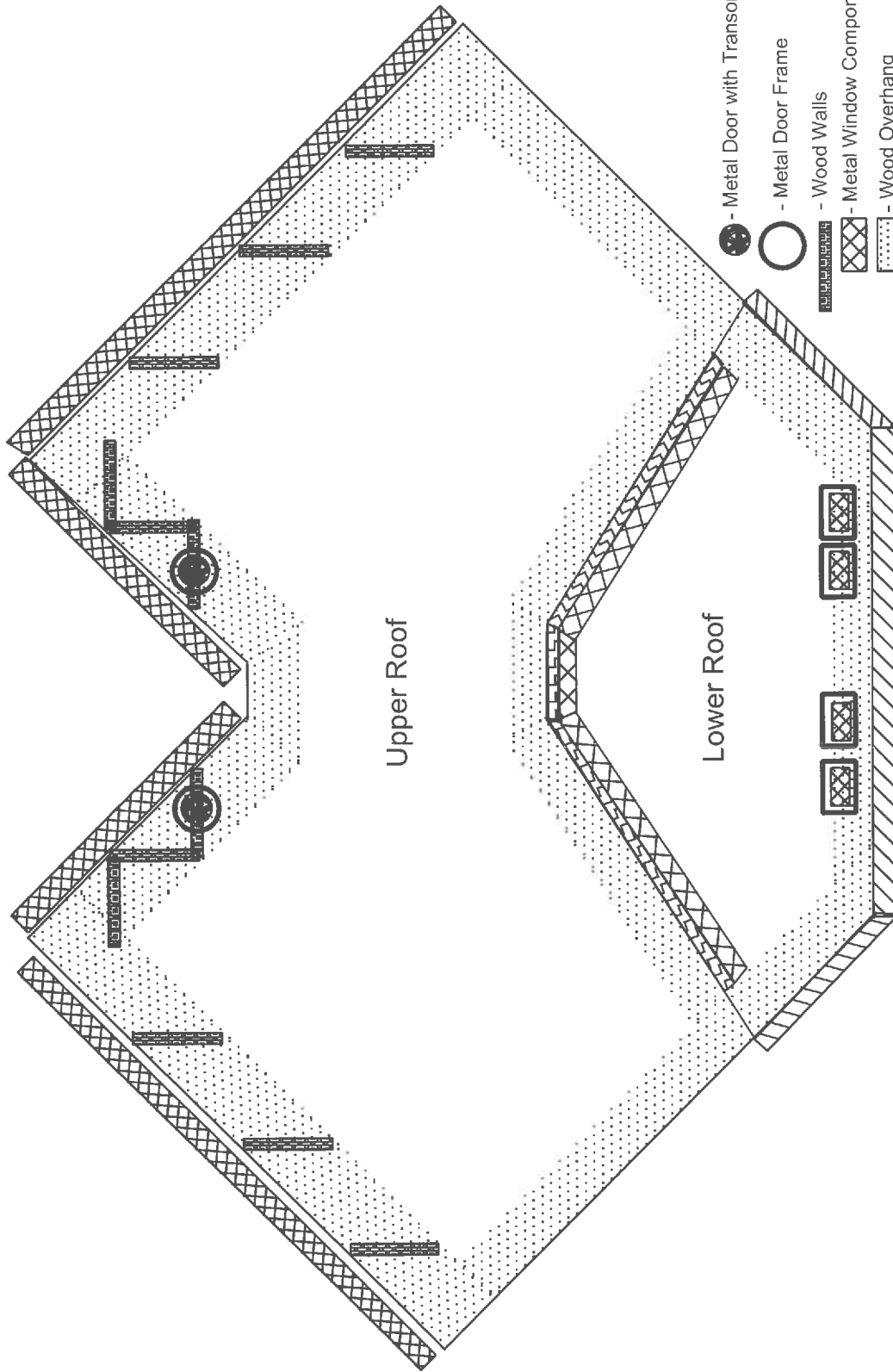


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

Building E



Client: Little Lake City SD

Project #: 18-Z0187-0028

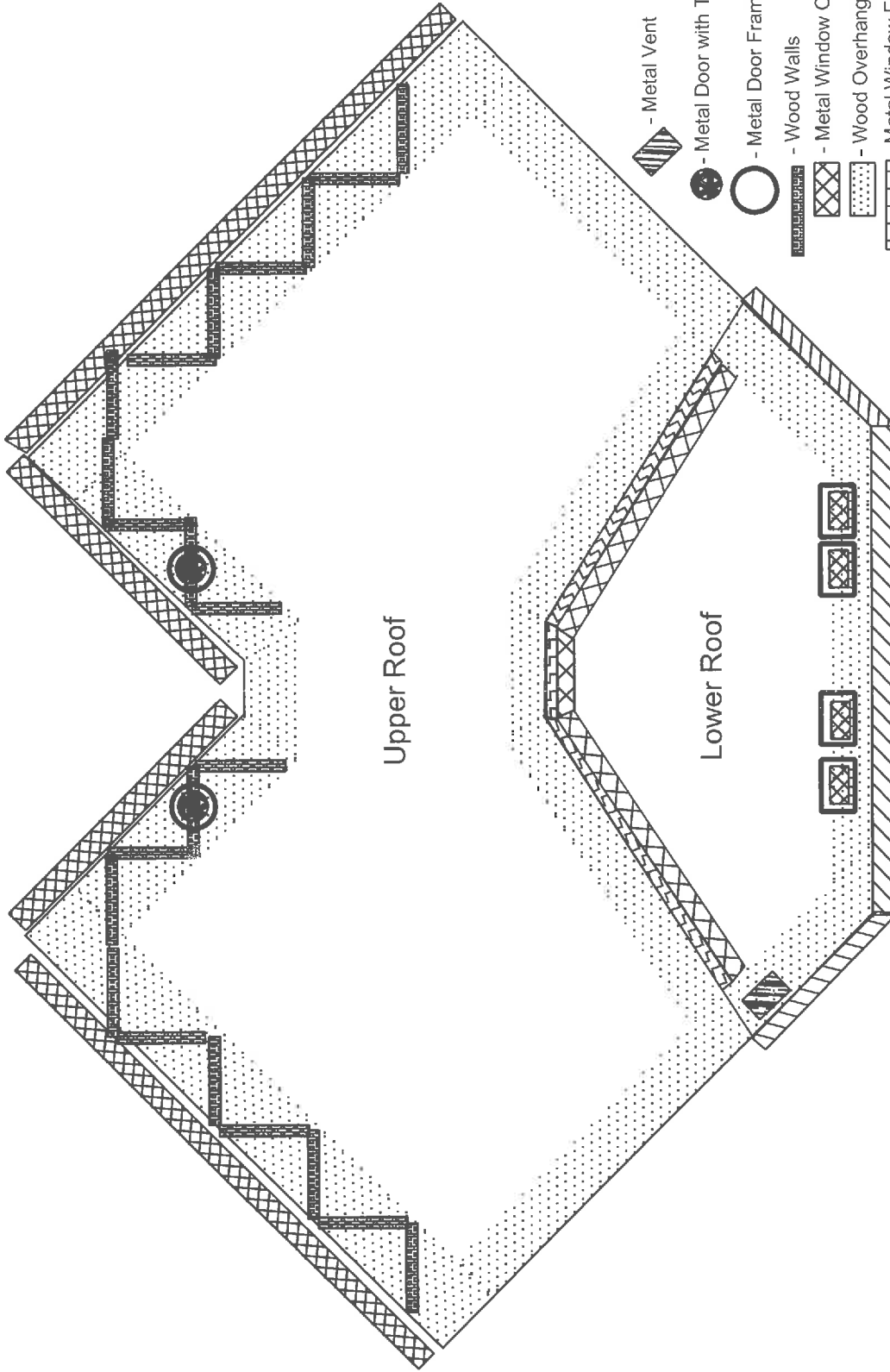
Info: Lead-Based Paint/Glaze Identified



Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Drawing Not to Scale - © 2012

Building F



SIDE=B
SIDE=C
SIDE=D
SIDE=A

- Metal Vent
- Metal Door with Transom
- Metal Door Frame
- Wood Walls
- Metal Window Components
- Wood Overhang
- Metal Window Flashing
- Metal Mesh Window Cover
- Wood Fascia



Client: Little Lake City SD

Project #: 18-Z0187-0028

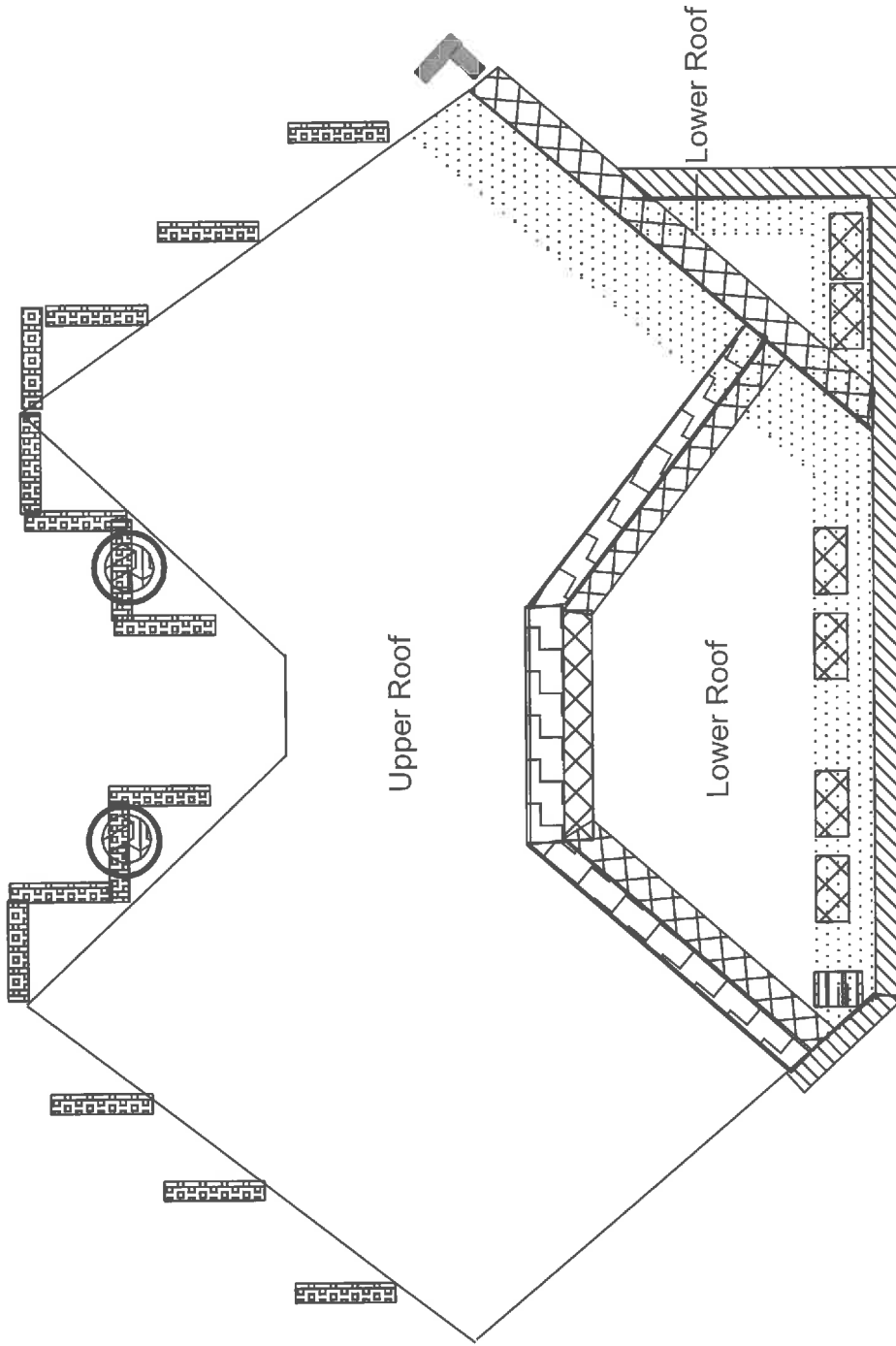
Info: Lead-Based Paint/Glaze Identified



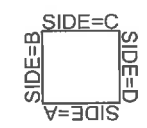
EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

Building G



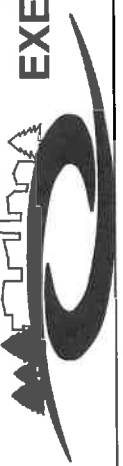
- Wood Walls
- Metal Flashing
- Metal Window Components
- Metal Door with Transom
- Metal Door Frame
- Metal Vent
- Metal Downspout
- Wood Overhang
- Wood Fascia



Client: Little Lake City SD

Project #: 18-Z0187-0028

Info: Lead-Based Paint/Glaze Identified

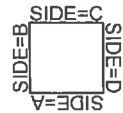
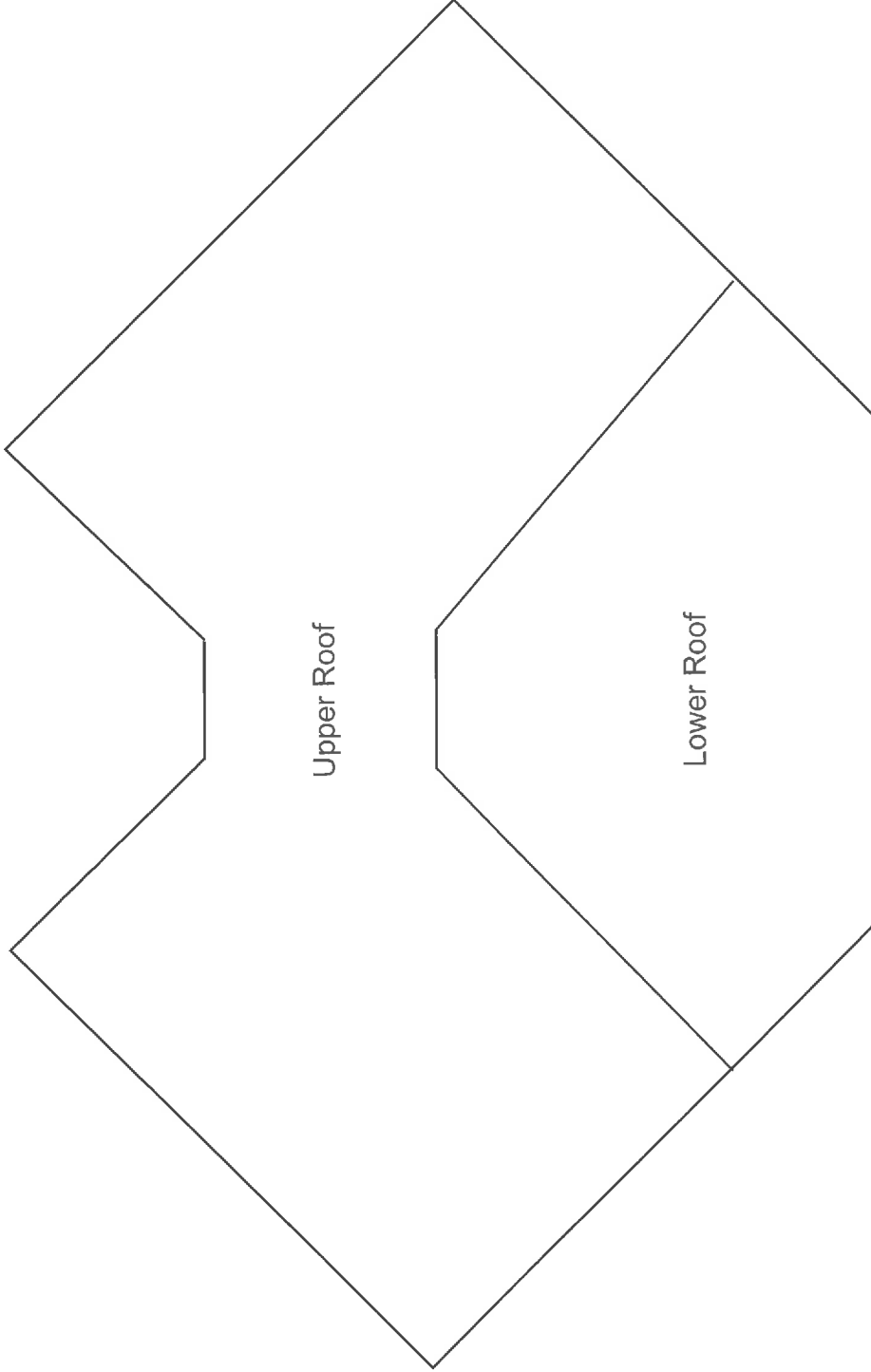


EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
11224 Bombardier Avenue
Address: Norwalk, CA 90650

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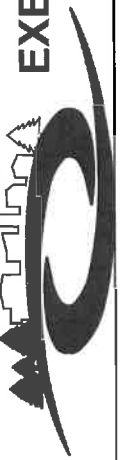
Building J



Client: Little Lake City SD

Project #: 18-Z0187-0028

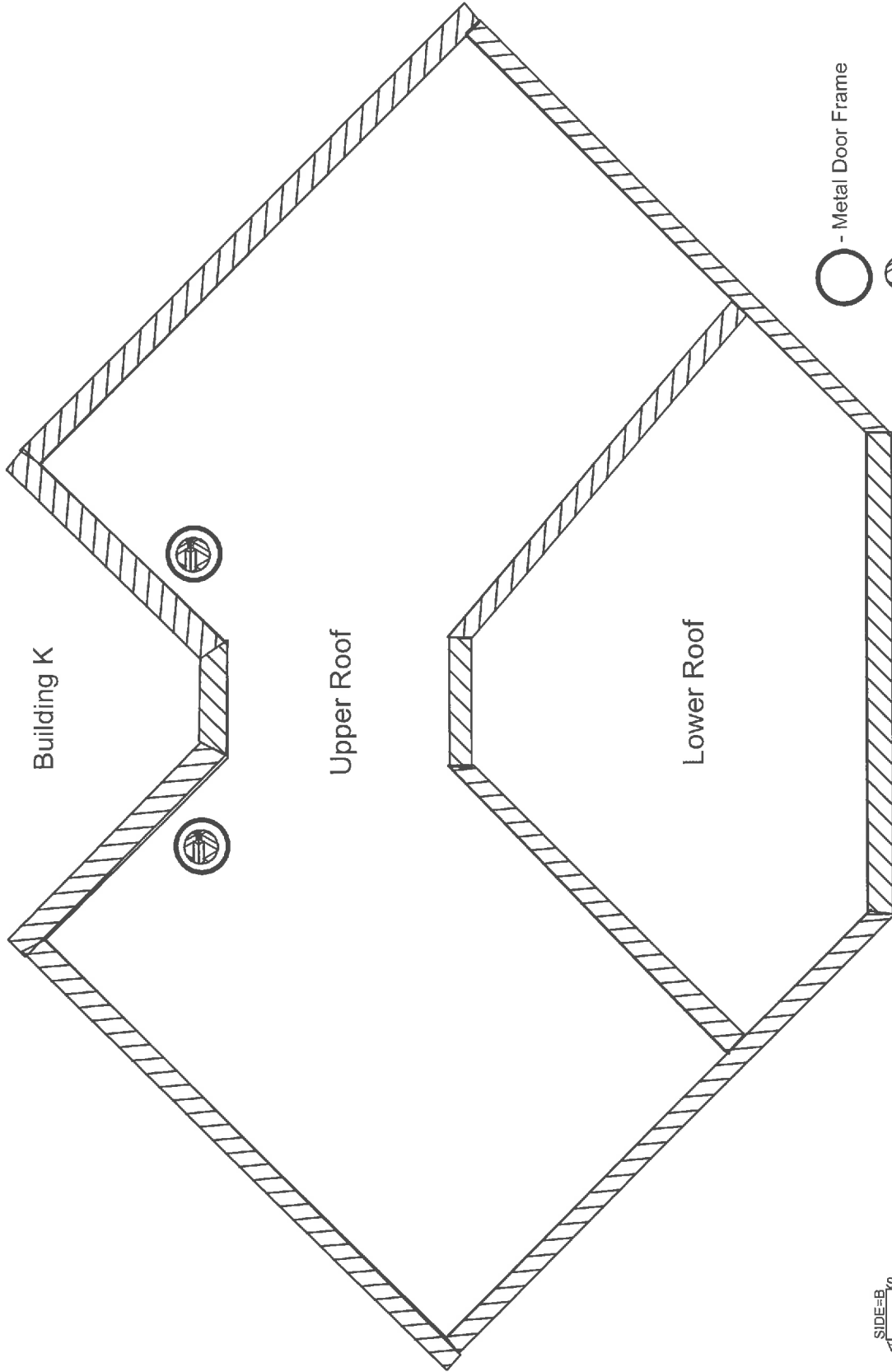
Info: No Lead-Based Paint/Glaze Identified



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, CA 90650

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Info: Lead-Based Paint/Glaze Identified

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
 Norwalk, CA 90650

Drawing Not to Scale - © 2012

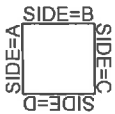
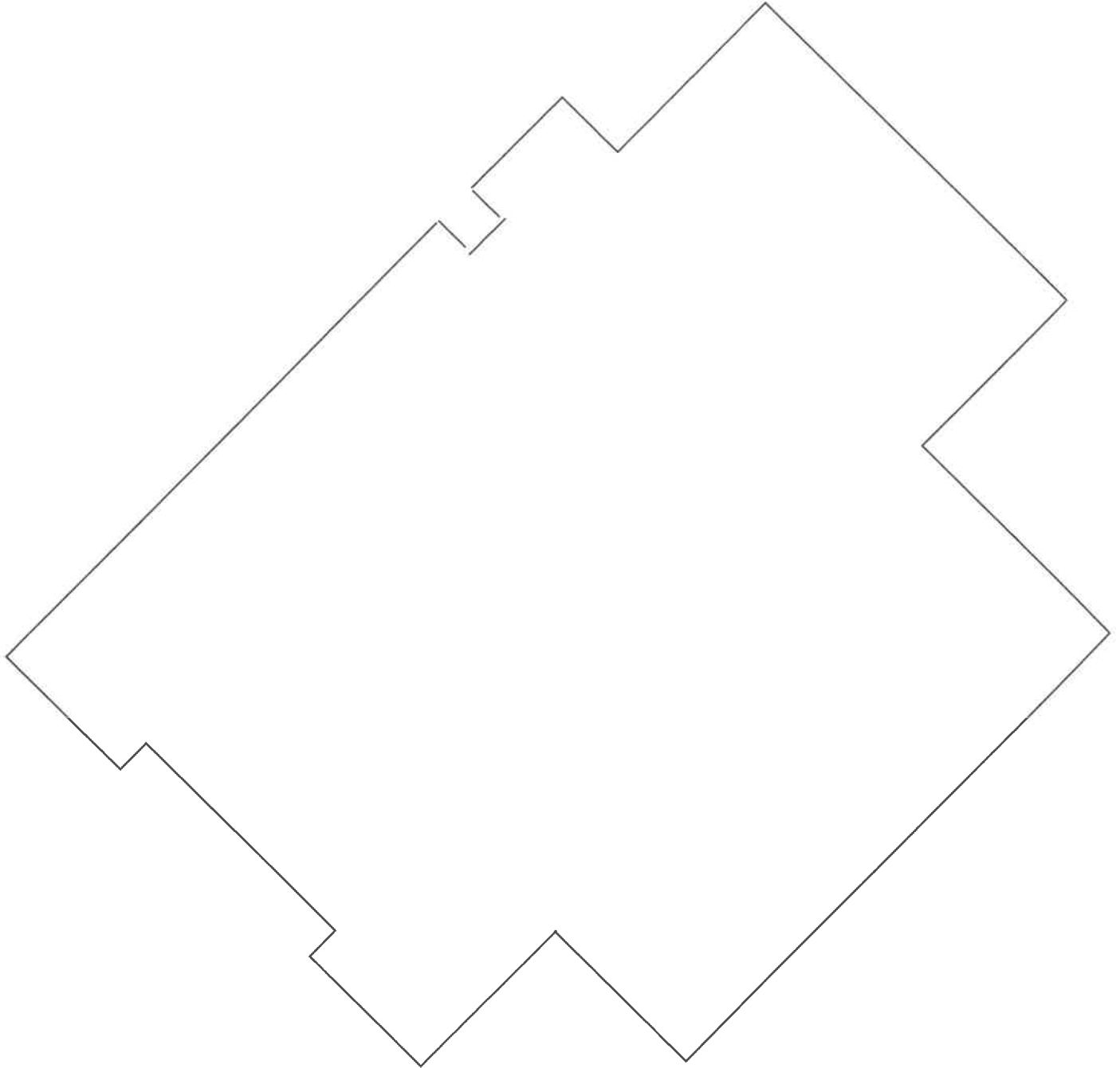
Project #: 18-Z0187-0028

EXECUTIVE ENVIRONMENTAL
 HEALTH & SAFETY SIMPLIFIED



Client: Little Lake City SD

Multi-Purpose Building



Client: Little Lake City SD

Project#: 18-Z0187-0028

Info: No Lead-Based Paint/Glaze Identified



EXECUTIVE ENVIRONMENTAL
HEALTH & SAFETY SIMPLIFIED

Site: Lakeland ES - Roofing and Painting Project
Address: 11224 Bombardier Avenue
Norwalk, California 90650

Drawing Not to Scale - © 2012

APPENDIX B – XRF SUMMARY RESULTS

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
1	2/21/18	Paint			Shutter calibrate					1.56	0	0.24	0	0	0
2	2/21/18	Paint			Calibrate				Positive	1.7	0.6	1.7	0.6	1.1	2.6
3	2/21/18	Paint			Calibrate				Positive	1.4	0.3	1.4	0.3	1.3	1.8
4	2/21/18	Paint			Calibrate				Positive	1.6	0.4	1.6	0.4	1	2.4
5	2/21/18	Paint	Covered Walkway No. 1	Exterior	Ceiling	Wood		Fair	Negative	0.2	0.26	0.2	0.26	0.4	1.7
6	2/21/18	Paint	Covered Walkway No. 1	Exterior	Beam	Wood		Intact	Negative	0.5	0.2	0.5	0.2	0.7	0.6
7	2/21/18	Paint	Covered Walkway No. 1	Exterior	Conduit	Metal		Intact	Negative	0	0.02	0	0.02	1	2.6
8	2/21/18	Paint	Covered Walkway No. 1	Exterior	Pole	Metal		Intact	Negative	0.15	0.13	0.15	0.13	-0.34	1.06
9	2/21/18	Paint	Covered Walkway No. 1	Exterior	Fascia	Wood		Poor	Null	0.7	0.2	0.7	0.2	0.4	0.6
10	2/21/18	Paint	Covered Walkway No. 1	Exterior	Fascia	Wood		Poor	Negative	0.6	0.1	0.6	0.1	0.7	0.3
11	2/21/18	Paint	Covered Walkway No. 1	Exterior	Flashing	Metal		Intact	Negative	0	0.02	0	0.02	0.8	1.9
12	2/21/18	Paint	Covered Walkway No. 2	Exterior	Ceiling	Wood		Poor	Positive	0.7	0.2	0.6	0.1	0.7	0.2
13	2/21/18	Paint	Covered Walkway No. 2	Exterior	Beam	Wood		Poor	Positive	5.4	3.3	3.2	2.2	5.4	3.3
14	2/21/18	Paint	Covered Walkway No. 2	Exterior	Conduit	Metal		Intact	Negative	0	0.02	0	0.02	0.6	2.4
15	2/21/18	Paint	Covered Walkway No. 2	Exterior	Pole	Metal		Intact	Negative	0.29	0.36	0.29	0.36	0.8	2.2

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
16	2/21/18	Paint	Covered Walkway No. 2	Exterior	Gutter	Metal		Intact	Negative	0.02	0.06	0.02	0.06	-0.37	2.07
17	2/21/18	Paint	Covered Walkway No. 2	Exterior	Downspout	Metal		Intact	Negative	0.07	0.13	0.07	0.13	0.02	1.8
18	2/21/18	Paint	Covered Walkway No. 2	Exterior	Rail guard	Metal		Intact	Negative	0.14	0.24	0.14	0.24	0.4	2.5
19	2/21/18	Paint	Covered Walkway No. 2	Exterior	Fascia	Wood		Poor	Positive	1.5	0.8	1.9	0.6	1.5	0.8
20	2/21/18	Paint	Covered Walkway No. 2	Exterior	Flashing	Metal		Intact	Negative	0	0.02	0	0.02	-0.64	1.57
21	2/21/18	Paint	Covered Walkway No. 3	Exterior	Ceiling	Wood		Fair	Negative	0.01	0.08	0.01	0.08	0.15	1.43
22	2/21/18	Paint	Covered Walkway No. 3	Exterior	Conduit	Metal		Intact	Negative	0.08	0.2	0.08	0.2	-0.22	2.68
23	2/21/18	Paint	Covered Walkway No. 3	Exterior	Beam	Wood		Fair	Null	0.8	0.7	0.8	0.7	0.7	1.8
24	2/21/18	Paint	Covered Walkway No. 3	Exterior	Beam	Wood		Fair	Negative	0.17	0.24	0.17	0.24	0.15	1.64
25	2/21/18	Paint	Covered Walkway No. 3	Exterior	Fascia	Wood		Poor	Negative	0.04	0.12	0.04	0.12	0.23	1.36
26	2/21/18	Paint	Covered Walkway No. 3	Exterior	Flashing	Metal		Intact	Negative	0	0.02	0	0.02	0.17	1.07
27	2/21/18	Paint	Covered Walkway No. 3	Exterior	Pole	Metal		Intact	Negative	0.4	0.2	0.4	0.2	0.3	1.34
28	2/21/18	Paint	Covered Walkway No. 4	Exterior	Ceiling	Wood		Poor	Negative	0.02	0.08	0.02	0.08	0.3	1.67
29	2/21/18	Paint	Covered Walkway No. 4	Exterior	Conduit	Metal		Intact	Negative	0.1	0.26	0.1	0.26	0.6	2.6

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
30	2/21/18	Paint	Covered Walkway No. 4	Exterior	Beam	Wood		Poor	Negative	0	0	0.02	0.13	1.63
31	2/21/18	Paint	Covered Walkway No. 4	Exterior	Radiator	Metal		Intact	Negative	0.19	0.19	0.19	1	2.6
32	2/21/18	Paint	Covered Walkway No. 4	Exterior	Fascia	Wood		Poor	Positive	1.9	1.9	0.6	1.8	1
33	2/21/18	Paint	Covered Walkway No. 4	Exterior	Flashing	Metal		Intact	Negative	0	0	0.02	-0.36	1.99
34	2/21/18	Paint	Covered Walkway No. 5	Exterior	Ceiling	Wood		Intact	Negative	0	0	0.02	-0.15	1.44
35	2/21/18	Paint	Covered Walkway No. 5	Exterior	Conduit	Metal		Intact	Negative	0	0	0.02	-0.44	1.99
36	2/21/18	Paint	Covered Walkway No. 5	Exterior	Beam	Wood		Poor	Negative	0	0	0.02	-0.29	1.53
37	2/21/18	Paint	Covered Walkway No. 5	Exterior	Fascia	Wood		Poor	Negative	0	0	0.02	0.05	1.46
38	2/21/18	Paint	Covered Walkway No. 5	Exterior	Flashing	Metal		Intact	Negative	0	0	0.02	0.16	1.54
39	2/21/18	Paint	Covered Walkway No. 5	Exterior	Gutter	Metal		Intact	Negative	0.11	0.11	0.33	-0.55	1.68
40	2/21/18	Paint	Covered Walkway No. 5	Exterior	Downspout	Metal		Intact	Null	0.6	0.6	0.1	1.5	0.8
41	2/21/18	Paint	Covered Walkway No. 5	Exterior	Downspout	Metal		Intact	Positive	0.7	0.7	0.1	0.7	0.5
42	2/21/18	Paint	Covered Walkway No. 5	Exterior	Gutter	Metal		Intact	Negative	0	0	0.02	0.21	1.98
43	2/21/18	Paint	Covered Walkway No. 5	Exterior	Downspout	Metal		Intact	Negative	0	0	0.02	-0.23	1.81

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
44	2/21/18	Paint	Covered Walkway No. 5	Exterior	Pole	Metal		Intact	Negative	0.26	0.17	0.26	0.17	0.9	2.1
45	2/21/18	Paint	Covered Walkway No. 6	Exterior	Ceiling	Wood		Intact	Negative	0.02	0.07	0.02	0.07	0.01	1.53
46	2/21/18	Paint	Covered Walkway No. 6	Exterior	Conduit	Metal		Intact	Null	0	0.02	0	0.02	0.5	5
47	2/21/18	Paint	Covered Walkway No. 6	Exterior	Conduit	Metal		Intact	Negative	0	0.02	0	0.02	-0.01	1.87
48	2/21/18	Paint	Covered Walkway No. 6	Exterior	Beam	Wood		Poor	Negative	0.4	0.2	0.4	0.2	0.2	0.79
49	2/21/18	Paint	Covered Walkway No. 6	Exterior	Fascia	Wood		Poor	Positive	2.3	1.3	2.3	1.3	2.1	2.2
50	2/21/18	Paint	Covered Walkway No. 6	Exterior	Flashing	Metal		Intact	Negative	0	0.02	0	0.02	0.07	2
51	2/21/18	Paint	Covered Walkway No. 6	Exterior	Pole	Metal		Intact	Negative	0.07	0.12	0.07	0.12	0.6	2.7
52	2/21/18	Paint	Covered Walkway No. 6	Exterior	Wall	Brick		Intact	Negative	0	0.02	0	0.02	-0.82	1.87
53	2/21/18	Paint	Covered Walkway No. 6	Exterior	Wall rail	Metal		Intact	Negative	0	0.02	0	0.02	-0.53	2.97
54	2/21/18	Paint			Calibrate				Positive	1.7	0.5	1.7	0.5	1.7	3
55	2/21/18	Paint			Calibrate				Positive	1.8	0.5	1.8	0.5	0.6	2.8
56	2/21/18	Paint			Calibrate				Positive	1.9	0.5	1.9	0.5	1.2	2.8
57	2/21/18	Paint			Calibrate				Positive	1.7	0.5	1.7	0.5	1.1	2.6
58	2/21/18	Paint			Shutter calibrate					1.58	0	0.26	0	0.01	0
59	2/21/18	Paint			Calibrate				Positive	2	1	2	1	2.1	5.2

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
60	2/21/18	Paint			Calibrate				Positive	1.8	1.8	0.4	1.5	2.2
61	2/21/18	Paint			Calibrate				Positive	1.7	1.7	0.4	0.7	2
62	2/21/18	Paint	Portable 17	Exterior	Wall	Wood	A	Intact	Negative	0	0	0.02	0.16	1.71
63	2/21/18	Paint	Portable 17	Exterior	Wall	Wood	B	Intact	Negative	0	0	0.02	-0.16	1.32
64	2/21/18	Paint	Portable 17	Exterior	Wall	Wood	C	Intact	Negative	0	0	0.02	-0.09	1.18
65	2/21/18	Paint	Portable 17	Exterior	Wall	Wood	D	Intact	Negative	0	0	0.02	0.06	1.54
66	2/21/18	Paint	Portable 17	Exterior	frame	Metal	D	Intact	Negative	0	0	0.02	0.22	2.69
67	2/21/18	Paint	Portable 17	Exterior	HVAC unit	Metal	B	Intact	Negative	0	0	0.02	-0.36	2.64
68	2/21/18	Paint	Portable 17	Exterior	Conduit	Metal	B	Intact	Negative	0.02	0.02	0.07	-0.6	2.88
69	2/21/18	Paint	Portable 17	Exterior	Electrical box	Metal	B	Intact	Negative	0	0	0.02	-0.08	2.57
70	2/21/18	Paint	Portable 17	Exterior	Fascia	Metal	A	Intact	Negative	0	0	0.02	-0.18	2.31
71	2/21/18	Paint	Portable 17	Exterior	Flashing	Metal	A	Intact	Negative	0.02	0.02	0.07	-0.42	0.95
72	2/21/18	Paint	Portable 17	Exterior	Ceiling	Wood	B	Intact	Negative	0	0	0.02	-0.26	1.36
73	2/21/18	Paint	Portable 17	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	-0.15	2.16
74	2/21/18	Paint	Portable 17	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.02	-0.41	2.15

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL Error	PbK Error	PbC Error	PbL Error	PbK Error
75	2/21/18	Paint	Portable 17	Exterior	Door frame trim	Wood	D	Intact	Negative	0	0.02	0.29	0	0.02	1.16
76	2/21/18	Paint	Portable 17	Exterior	ramp	Metal	D	Intact	Negative	0	0.02	0.14	0	0.02	2.6
77	2/21/18	Paint	Portable 17	Exterior	Hand rail	Metal	D	Intact	Negative	0	0.02	-0.22	0	0.02	1.16
78	2/21/18	Paint	Portable 18	Exterior	Wall	Wood	A	Intact	Negative	0	0.02	0.4	0	0.02	1.4
79	2/21/18	Paint	Portable 18	Exterior	Wall	Wood	B	Intact	Negative	0	0.02	0.19	0	0.02	1.45
80	2/21/18	Paint	Portable 18	Exterior	Wall	Wood	C	Intact	Negative	0	0.02	-0.63	0	0.02	1.24
81	2/21/18	Paint	Portable 18	Exterior	Wall	Wood	D	Intact	Negative	0	0.02	-0.14	0	0.02	1.65
82	2/21/18	Paint	Portable 18	Exterior	HVAC unit	Metal	B	Intact	Negative	0.05	0.19	-0.38	0.05	0.19	2.49
83	2/21/18	Paint	Portable 18	Exterior	Frame	Metal	B	Intact	Negative	0	0.02	-0.31	0	0.02	2.73
84	2/21/18	Paint	Portable 18	Exterior	Conduit	Metal	B	Intact	Negative	0.04	0.14	-0.47	0.04	0.14	2.54
85	2/21/18	Paint	Portable 18	Exterior	Electrical box	Metal	B	Intact	Negative	0	0.02	-0.25	0	0.02	2.54
86	2/21/18	Paint	Portable 18	Exterior	Gutter	Metal	B	Intact	Negative	0.01	0.06	-0.17	0.01	0.06	3.04
87	2/21/18	Paint	Portable 18	Exterior	Downspout	Metal	B	Intact	Negative	0	0.02	-0.12	0	0.02	0.74
88	2/21/18	Paint	Portable 18	Exterior	Fascia	Metal	C	Intact	Negative	0	0.02	-0.23	0	0.02	2.88
89	2/21/18	Paint	Portable 18	Exterior	Flashing	Metal	C	Intact	Negative	0	0.02	0.14	0	0.02	1.47

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
90	2/21/18	Paint	Portable 18	Exterior	Overhang	Wood	D	Intact	Negative	0	0	0.02	-0.33	1.29
91	2/21/18	Paint	Portable 18	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	-0.26	2.35
92	2/21/18	Paint	Portable 18	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.02	-0.43	2.54
93	2/21/18	Paint	Portable 18	Exterior	Door frame trim	Wood	D	Intact	Negative	0	0	0.02	0.3	1.15
94	2/21/18	Paint	Portable 18	Exterior	Ramp	Metal	D	Intact	Negative	0	0	0.02	-0.3	1.06
95	2/21/18	Paint	Portable 18	Exterior	Hand rail	Metal	D	Intact	Negative	0	0	0.02	-0.31	2.05
96	2/21/18	Paint	Portable 18	Exterior	Hang rack	Wood	D	Poor	Negative	0	0	0.02	0.16	1.48
97	2/21/18	Paint	Portable 17	Exterior	Gutter	Metal	B	Intact	Negative	0	0	0.02	-0.55	2.99
98	2/21/18	Paint	Portable 17	Exterior	Downspout	Metal	B	Intact	Negative	0	0	0.02	-0.34	2.66
99	2/21/18	Paint	Portable 19	Exterior	Wall	Wood	A	Intact	Negative	0	0	0.02	-0.42	1.52
100	2/21/18	Paint	Portable 19	Exterior	Wall	Wood	B	Intact	Negative	0	0	0.02	-0.43	1.73
101	2/21/18	Paint	Portable 19	Exterior	Wall	Wood	C	Intact	Negative	0	0	0.02	-0.01	1.4
102	2/21/18	Paint	Portable 19	Exterior	Wall	Wood	D	Intact	Negative	0	0	0.02	-0.2	1.61
103	2/21/18	Paint	Portable 19	Exterior	Frame	Metal	D	Intact	Negative	0	0	0.02	0.5	2.9
104	2/21/18	Paint	Portable 19	Exterior	HVAC unit	Metal	B	Intact	Negative	0.02	0.02	0.05	0	1.81

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
105	2/21/18	Paint	Portable 19	Exterior	Conduit	Metal	B	Intact	Negative	0.05	0.12	0.12	0.05	2.23
106	2/21/18	Paint	Portable 19	Exterior	Electrical box	Metal	B	Intact	Negative	0	0.02	0.02	0	2.85
107	2/21/18	Paint	Portable 19	Exterior	Pipe	pvc	B	Intact	Negative	0	0.02	0.02	0	1.26
108	2/21/18	Paint	Portable 19	Exterior	Gutter	Metal	B	Intact	Negative	0	0.02	0.02	0	2.73
109	2/21/18	Paint	Portable 19	Exterior	Downspout	Metal	B	Intact	Negative	0	0.02	0.02	0	1.79
110	2/21/18	Paint	Portable 19	Exterior	Downspout	Metal	B	Intact	Negative	0	0.02	0.02	0	1.33
111	2/21/18	Paint	Portable 19	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0.02	0	2.42
112	2/21/18	Paint	Portable 19	Exterior	Door frame	Metal	B	Intact	Negative	0	0.02	0.02	0	2.21
113	2/21/18	Paint	Portable 19	Exterior	Door frame trim	Wood	D	Intact	Null	0	0.02	0.02	0	2.4
114	2/21/18	Paint	Portable 19	Exterior	Door frame trim	Wood	D	Intact	Null	0	0.02	0.02	0	4.38
115	2/21/18	Paint	Portable 19	Exterior	Door frame trim	Wood	D	Intact	Null	0	0.02	0.02	0	2.74
116	2/21/18	Paint	Portable 19	Exterior	Door frame trim	Wood	D	Intact	Null	0	0.02	0.02	0	2.4
117	2/21/18	Paint	Portable 19	Exterior	Door frame trim	Wood	D	Intact	Negative	0	0.02	0.02	0	1.42
118	2/21/18	Paint	Portable 19	Exterior	Ramp	Metal	D	Intact	Negative	0	0.02	0.02	0	0.69
119	2/21/18	Paint	Portable 19	Exterior	Hand rail	Metal	D	Intact	Negative	0	0.02	0.02	0	2.15

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
120	2/21/18	Paint	Portable 19	Exterior	hang rack	Wood	D	Poor	Negative	0	0	0.02	-0.34	1.39
121	2/21/18	Paint	Portable 19	Exterior	Overhang	Wood	D	Intact	Negative	0	0	0.03	-0.58	1.86
122	2/21/18	Paint	Portable 19	Exterior	Fascia	Metal	A	Intact	Negative	0.01	0.01	0.03	0.5	1.9
123	2/21/18	Paint	Portable 19	Exterior	Flashing	Metal	A	Intact	Negative	0	0	0.02	-0.26	1.9
124	2/21/18	Paint	Portable 20	Exterior	Wall	Wood	A	Intact	Negative	0	0	0.02	-1.04	1.66
125	2/21/18	Paint	Portable 20	Exterior	Wall	Wood	B	Intact	Negative	0	0	0.02	-0.57	1.68
126	2/21/18	Paint	Portable 20	Exterior	Wall	Wood	D	Intact	Negative	0	0	0.02	-0.77	1.39
127	2/21/18	Paint	Portable 20	Exterior	HVAC unit	Metal	B	Intact	Negative	0	0	0.02	-0.1	1.68
128	2/21/18	Paint	Portable 20	Exterior	Conduit	Metal	B	Intact	Negative	0	0	0.02	-0.48	2.76
129	2/21/18	Paint	Portable 20	Exterior	Electrical box	Metal	B	Intact	Negative	0	0	0.02	-0.27	2.57
130	2/21/18	Paint	Portable 20	Exterior	Pipe	Metal	B	Poor	Negative	0	0	0.02	0.03	2.3
131	2/21/18	Paint	Portable 20	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	-0.07	2.4
132	2/21/18	Paint	Portable 20	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.02	-0.3	2.27
133	2/21/18	Paint	Portable 20	Exterior	Door frame trim	Wood	D	Intact	Negative	0	0	0.02	0.02	1.37
134	2/21/18	Paint	Portable 20	Exterior	Hang rack	Wood	D	Poor	Negative	0	0	0.02	0.03	1.17

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
135	2/21/18	Paint	Portable 20	Exterior	Overhang	Metal	D	Intact	Negative	0	0	0.02	-0.35	2.52
136	2/21/18	Paint	Portable 20	Exterior	Frame	Metal	D	Intact	Negative	0	0	0.02	-0.33	2.65
137	2/21/18	Paint	Portable 20	Exterior	Overhang beam	Metal	D	Intact	Negative	0	0	0.02	0.4	3.1
138	2/21/18	Paint	Portable 20	Exterior	Fascia	Metal	A	Intact	Negative	0	0	0.02	0.13	2.58
139	2/21/18	Paint	Portable 20	Exterior	Flashing	Metal	A	Intact	Negative	0	0	0.02	-0.1	2
140	2/21/18	Paint	Portable 20	Exterior	Gutter	Metal	D	Intact	Null	0	0	0.02	-0.56	3.34
141	2/21/18	Paint	Portable 20	Exterior	Gutter	Metal	D	Intact	Negative	0	0	0.02	-0.31	1.49
142	2/21/18	Paint	Portable 20	Exterior	Downspout	Metal	D	Intact	Negative	0	0	0.02	-0.21	1.55
143	2/21/18	Paint	Portable 21	Exterior	Wall	Wood	B	Intact	Negative	0	0	0.02	-0.63	1.86
144	2/21/18	Paint	Portable 21	Exterior	Wall	Wood	C	Intact	Negative	0	0	0.02	-0.88	1.65
145	2/21/18	Paint	Portable 21	Exterior	Wall	Wood	D	Intact	Negative	0	0	0.02	-0.27	1.7
146	2/21/18	Paint	Portable 21	Exterior	HVAC unit	Metal	B	Intact	Negative	0	0	0.02	-0.41	2.14
147	2/21/18	Paint	Portable 21	Exterior	frame	Metal	B	Intact	Negative	0	0	0.02	0.25	2.65
148	2/21/18	Paint	Portable 21	Exterior	Conduit	Metal	B	Intact	Negative	0.26	0.26	0.35	-0.27	1.32
149	2/21/18	Paint	Portable 21	Exterior	Electrical box	Metal	B	Intact	Negative	0	0	0.02	0.07	2.84

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbK Error	PbK	PbL Error	PbC Error	
150	2/21/18	Paint	Portable 21	Exterior	Electrical unit	Metal	B	Intact	Negative	0	0.02	0	-0.22	0.02	0.02	2.17
151	2/21/18	Paint	Portable 21	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0	0.2	0.02	0.02	1.96
152	2/21/18	Paint	Portable 21	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	0	-0.26	0.02	0.02	2.37
153	2/21/18	Paint	Portable 21	Exterior	Door frame trim	Wood	D	Intact	Negative	0	0.02	0	-0.06	0.02	0.02	1.42
154	2/21/18	Paint	Portable 21	Exterior	Hang rack	Wood	D	Poor	Negative	0	0.02	0	-0.08	0.02	0.02	1.37
155	2/21/18	Paint	Portable 21	Exterior	Overhang	Metal	D	Intact	Negative	0	0.02	0	-0.19	0.02	0.02	2.42
156	2/21/18	Paint	Portable 21	Exterior	Overhang beam	Metal	D	Intact	Negative	0	0.02	0	0.09	0.02	0.02	2.57
157	2/21/18	Paint	Portable 21	Exterior	Fascia	Metal	C	Intact	Negative	0	0.02	0	-0.43	0.02	0.02	2.14
158	2/21/18	Paint	Portable 21	Exterior	Flashing	Metal	C	Intact	Negative	0	0.02	0	-0.22	0.02	0.02	1.85
159	2/21/18	Paint	Portable 21	Exterior	Gutter	Metal	D	Intact	Negative	0	0.02	0	-0.14	0.02	0.02	1.57
160	2/21/18	Paint	Portable 21	Exterior	Downspout	Metal	D	Intact	Negative	0	0.02	0	-0.33	0.02	0.02	1.44
161	2/21/18	Paint	Portable 22	Exterior	Wall	Wood	A	Intact	Negative	0	0.02	0	-0.76	0.02	0.02	1.49
162	2/21/18	Paint	Portable 22	Exterior	Wall	Metal	B	Intact	Negative	0	0.02	0	-0.81	0.02	0.02	1.43
163	2/21/18	Paint	Portable 22	Exterior	Wall	Wood	C	Intact	Negative	0	0.02	0	-0.39	0.02	0.02	1.43
164	2/21/18	Paint	Portable 22	Exterior	Wall	Wood	D	Intact	Negative	0	0.02	0	-0.32	0.02	0.02	1.44

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
165	2/21/18	Paint	Portable 22	Exterior	frame	Metal	B	Intact	Negative	0	0	0.02	-0.57	2.59
166	2/21/18	Paint	Portable 22	Exterior	HVAC unit	Metal	B	Intact	Negative	0.05	0.05	0.16	0.06	1.09
167	2/21/18	Paint	Portable 22	Exterior	Conduit	Metal	B	Intact	Negative	0.01	0.01	0.03	0.1	2.54
168	2/21/18	Paint	Portable 22	Exterior	Electrical box	Metal	B	Intact	Negative	0	0	0.02	-0.42	2.3
169	2/21/18	Paint	Portable 22	Exterior	Electrical unit	Metal	B	Intact	Negative	0	0	0.02	-0.59	2.68
170	2/21/18	Paint	Portable 22	Exterior	Pipe	pvc	B	Intact	Negative	0	0	0.02	-0.56	1.29
171	2/21/18	Paint	Portable 22	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	0.05	2.38
172	2/21/18	Paint	Portable 22	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.03	-0.06	2.42
173	2/21/18	Paint	Portable 22	Exterior	Door frame trim	Wood	D	Intact	Negative	0	0	0.02	0.3	1.3
174	2/21/18	Paint	Portable 22	Exterior	Overhang	Wood	D	Intact	Negative	0	0	0.02	-0.79	1.4
175	2/21/18	Paint	Portable 22	Exterior	Ramp	Metal	D	Intact	Null	0	0	0.02	-0.19	2.24
176	2/21/18	Paint	Portable 22	Exterior	Ramp	Metal	D	Intact	Negative	0	0	0.02	-0.39	1.96
177	2/21/18	Paint	Portable 22	Exterior	Hand rail	Metal	D	Intact	Negative	0	0	0.02	-0.01	2.37
178	2/21/18	Paint	Portable 22	Exterior	Fascia	Metal	A	Intact	Negative	0.01	0.01	0.04	-0.38	2.29
179	2/21/18	Paint	Portable 22	Exterior	Flashing	Metal	A	Intact	Negative	0	0	0.02	-0.09	2.05

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
180	2/21/18	Paint	Portable 22	Exterior	Gutter	Metal	D	Intact	Negative	0	0	0.02	0.06	2.71
181	2/21/18	Paint	Portable 22	Exterior	Downspout	Metal	D	Intact	Negative	0	0	0.02	-0.65	1.39
182	2/21/18	Paint	Portable 23	Exterior	Wall	Wood	A	Intact	Negative	0	0	0.02	-0.63	1.82
183	2/21/18	Paint	Portable 23	Exterior	Wall	Wood	B	Intact	Negative	0	0	0.02	-0.32	1.79
184	2/21/18	Paint	Portable 23	Exterior	Wall	Wood	C	Intact	Negative	0	0	0.02	-0.53	1.68
185	2/21/18	Paint	Portable 23	Exterior	Wall	Wood	D	Intact	Negative	0	0	0.02	-0.79	1.66
186	2/21/18	Paint	Portable 23	Exterior	HVAC unit	Metal	C	Intact	Negative	0.01	0.01	0.03	-0.17	1.72
187	2/21/18	Paint	Portable 23	Exterior	Conduit	Metal	C	Intact	Negative	0.01	0.01	0.03	0.17	2.78
188	2/21/18	Paint	Portable 23	Exterior	fame	Metal	C	Intact	Negative	0	0	0.02	-0.05	3.05
189	2/21/18	Paint	Portable 23	Exterior	Electrical box	Metal	C	Intact	Negative	0	0	0.02	-0.31	2.04
190	2/21/18	Paint	Portable 23	Exterior	Pipe	Metal	C	pvc	Negative	0	0	0.02	-0.88	1.24
191	2/21/18	Paint	Portable 23	Exterior	Door	Metal	A	Intact	Negative	0	0	0.02	0	2.41
192	2/21/18	Paint	Portable 23	Exterior	Door frame	Metal	A	Intact	Negative	0	0	0.02	-0.07	1.77
193	2/21/18	Paint	Portable 23	Exterior	Door frame trim	Wood	A	Intact	Negative	0	0	0.02	-0.07	1.29
194	2/21/18	Paint	Portable 23	Exterior	Ramp	Metal	A	Fair	Negative	0	0	0.02	-0.62	1.11

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
195	2/21/18	Paint	Portable 23	Exterior	Hand rail	Metal	A	Intact	Negative	0	0	0.02	-0.26	2
196	2/21/18	Paint	Portable 23	Exterior	Overhang	Wood	A	Intact	Negative	0	0	0.02	-0.83	1.32
197	2/21/18	Paint	Portable 23	Exterior	Fascia	Metal	B	Intact	Negative	0	0	0.02	-0.88	2.63
198	2/21/18	Paint	Portable 23	Exterior	Flashing	Metal	B	Intact	Negative	0	0	0.02	0.4	1.8
199	2/21/18	Paint	Portable 23	Exterior	Gutter	Metal	A	Intact	Negative	0	0	0.02	0.02	1.91
200	2/21/18	Paint	Portable 23	Exterior	Downspout	Metal	A	Intact	Negative	0	0	0.02	-0.52	1.5
201	2/21/18	Paint			Calibrate				Positive	1.4	1.4	0.4	1.2	2.8
202	2/21/18	Paint			Calibrate				Positive	1.6	1.6	0.5	1.5	3
203	2/21/18	Paint			Calibrate				Positive	1.5	1.5	0.4	2.4	2.6
204	2/22/18	Paint			Shutter calibrate					1.3	0.3	0	0.01	0
205	2/22/18	Paint			Calibrate				Positive	1.6	1.6	0.5	1.2	2.6
206	2/22/18	Paint			Calibrate				Positive	1.6	1.6	0.5	1	2.8
207	2/22/18	Paint			Calibrate				Positive	1.7	1.7	0.8	-0.3	4.93
208	2/22/18	Paint	Building G	Exterior	Wall	Brick	A	Intact	Negative	0	0	0.02	0.09	0.97
209	2/22/18	Paint	Building G	Exterior	Wall	Brick	B	Intact	Negative	0	0	0.02	-0.33	1.01
210	2/22/18	Paint	Building G	Exterior	Wall	Brick	C	Intact	Negative	0	0	0.02	0.25	0.85

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
211	2/22/18	Paint	Building G	Exterior	Wall	Brick	D	Intact	Negative	0	0	0.02	0.07	0.97
212	2/22/18	Paint	Building G	Exterior	Conduit	Metal	A	Intact	Negative	0.01	0.01	0.03	-0.18	2.88
213	2/22/18	Paint	Building G	Exterior	Electrical box	Metal	A	Intact	Negative	0.09	0.09	0.17	0	2.75
214	2/22/18	Paint	Building G	Exterior	Base	Stucco	B	Fair	Null	0	0	0.02	1.1	2.6
215	2/22/18	Paint	Building G	Exterior	Base	Stucco	B	Fair	Negative	0.01	0.01	0.02	0.8	0.4
216	2/22/18	Paint	Building G	Exterior	Wall	Wood	B	Poor	Positive	3.8	3.2	2.2	3.8	2.6
217	2/22/18	Paint	Building G	Exterior	Window frame	Metal	B	Intact	Negative	0.6	0.6	0.1	0.5	0.6
218	2/22/18	Paint	Building G	Exterior	Transom	Glass	B	Intact	Negative	0	0	0.02	-0.61	1.87
219	2/22/18	Paint	Building G	Exterior	Hang rack	Wood	B	Poor	Negative	0	0	0.02	0.24	1.34
220	2/22/18	Paint	Building G	Exterior	Door	Metal	B	Intact	Positive	2.2	3.8	1.1	2.2	1.3
221	2/22/18	Paint	Building G	Exterior	Door frame	Metal	B	Intact	Positive	2.5	0.6	0.5	2.5	1.2
222	2/22/18	Paint	Building G	Exterior	Window frame	Metal	B	Intact	Negative	0.5	0.5	0.2	0.8	0.8
223	2/22/18	Paint	Building G	Exterior	Transom	Metal	B	Intact	Positive	1.6	1.6	0.6	1.2	1.2
224	2/22/18	Paint	Building G	Exterior	Downspout	Metal	C	Intact	Positive	1.7	0.7	0.1	1.7	0.9
225	2/22/18	Paint	Building G	Exterior	Gutter	Metal	C	Intact	Negative	0.08	0.08	0.18	0.1	1.86

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
226	2/22/18	Paint	Building G	Exterior	Overhang	Wood	C	Poor	Positive	1	0.3	1	0.3	0.5
227	2/22/18	Paint	Building G	Exterior	Fascia	Wood	C	Intact	Positive	1.6	0.8	1.1	1.6	0.8
228	2/22/18	Paint	Building G	Exterior	Flashing	Metal	C	Intact	Negative	0	0.02	0	0.02	2.08
229	2/22/18	Paint	Building G	Exterior	Door	Metal	C	Intact	Negative	0	0.02	0	0.02	2.39
230	2/22/18	Paint	Building G	Exterior	Door frame	Metal	C	Intact	Negative	0	0.02	0	0.02	2.51
231	2/22/18	Paint	Building G	Exterior	Window frame	Metal	C	Intact	Positive	1.6	0.7	1.6	1.6	2.5
232	2/22/18	Paint	Building G	Exterior	Window sash	Metal	C	Intact	Negative	0.5	0.2	0.5	0.2	0.86
233	2/22/18	Paint	Building G	Exterior	Fountain wall	Stucco	D	Intact	Negative	0	0.02	0	0.02	0.8
234	2/22/18	Paint	Building G	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0.02	0	0.02	1.04
235	2/22/18	Paint	Building G	Exterior	Door	Metal	D	Intact	Negative	0.01	0.04	0.01	0.04	2.42
236	2/22/18	Paint	Building G	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	0	0.02	2.66
237	2/22/18	Paint	Building G	Exterior	Panel	Wood	D	Fair	Negative	0.03	0.06	0.03	0.4	1.6
238	2/22/18	Paint	Building G	Exterior	Mesh window cover	Metal	D	Intact	Negative	0	0.02	0	0.02	2.25
239	2/22/18	Paint	Building G	Exterior	Electrical box	Metal	D	Intact	Null	0.11	0.29	0.11	0.18	0.91
240	2/22/18	Paint	Building G	Exterior	Electrical box	Metal	D	Intact	Negative	0	0.02	0	0.02	1.89

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL Error	PbK Error	PbK	PbL	PbC Error	PbC	PbL Error	PbK Error	
241	2/22/18	Paint	Building G	Exterior	Pipe	Metal	D	Intact	Negative	0	0.02	0	0.1	0	0.02	0	0.02	0.1	2.17
242	2/22/18	Paint	Building G	Exterior	Vent	Metal	D	Intact	Positive	2.2	1.3	2.2	0.7	2.2	1.3	2.2	1.3	0.7	2.2
243	2/22/18	Paint	Building G	Exterior	HVAC unit	Metal	Upper	Intact	Negative	0	0.02	0	-0.17	0	0.02	0	0.02	-0.17	2
244	2/22/18	Paint	Building G	Exterior	Fascia	Wood	D	Poor	Negative	0.02	0.08	0.02	0.07	0.02	0.08	0.02	0.08	0.07	1.55
245	2/22/18	Paint	Building G	Exterior	Flashing	Metal	D	Intact	Negative	0	0.02	0	0.14	0	0.02	0	0.02	0.14	1.86
246	2/22/18	Paint	Building G	Exterior	Window flashing	Metal	D	Intact	Positive	1.1	0.3	1.1	1.3	1.1	0.3	1.1	0.3	1.3	0.8
247	2/22/18	Paint	Building G	Exterior	Window frame	Metal	D	Intact	Null	0.9	0.4	0.9	0.29	0.9	0.4	0.9	0.4	0.29	1.35
248	2/22/18	Paint	Building G	Exterior	Window frame	Metal	D	Intact	Null	1.2	0.4	1.2	1.4	1.2	0.4	1.2	0.4	1.4	1
249	2/22/18	Paint	Building G	Exterior	Window frame	Metal	D	Intact	Null	0.8	0.2	0.8	0.6	0.8	0.2	0.8	0.2	0.6	0.7
250	2/22/18	Paint	Building G	Exterior	Window frame	Metal	D	Intact	Positive	0.8	0.1	0.8	0.6	0.8	0.1	0.8	0.1	0.6	0.5
251	2/22/18	Paint	Building G	Exterior	Window sash	Metal	D	Intact	Negative	0.04	0.12	0.04	0.06	0.04	0.12	0.04	0.12	0.06	2.03
252	2/22/18	Paint	Building G	Exterior	Overhang	Wood	D	Poor	Null	0.8	0.2	0.8	0.8	0.8	0.2	0.8	0.2	0.8	0.3
253	2/22/18	Paint	Building G	Exterior	Overhang	Wood	D	Poor	Negative	0.5	0.2	0.5	0.5	0.5	0.2	0.5	0.2	0.5	0.6
254	2/22/18	Paint	Building F	Exterior	Wall	Brick	A	Intact	Negative	0.01	0.02	0.01	-0.4	0.01	0.02	0.01	0.02	-0.4	1.09
255	2/22/18	Paint	Building F	Exterior	Wall	Brick	B	Intact	Negative	0.01	0.02	0.01	-0.25	0.01	0.02	0.01	0.02	-0.25	1.09

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
256	2/22/18	Paint	Building F	Exterior	Wall	Brick	C	Intact	Negative	0.01	0.02	0.01	0.05	0.81
257	2/22/18	Paint	Building F	Exterior	Wall	Brick	D	Intact	Negative	0.02	0.04	0.02	0.09	0.74
258	2/22/18	Paint	Building F	Exterior	Hang rack	Wood	B	Fair	Negative	0	0.02	0	-0.22	1.75
259	2/22/18	Paint	Building F	Exterior	Wall	Wood	B	Poor	Positive	2.4	1.1	2.9	2.4	1.1
260	2/22/18	Paint	Building F	Exterior	Transom	Glass	B	Intact	Negative	0	0.02	0	-0.37	2.02
261	2/22/18	Paint	Building F	Exterior	Window frame	Metal	B	Intact	Positive	1.2	0.5	1.2	2	1.2
262	2/22/18	Paint	Building F	Exterior	Door	Metal	B	Intact	Positive	2.6	1.6	2.6	2	3.3
263	2/22/18	Paint	Building F	Exterior	Door frame	Metal	B	Intact	Positive	1.8	0.9	1.8	2.7	2.8
264	2/22/18	Paint	Building F	Exterior	Transom	Metal	B	Intact	Positive	1.5	0.8	1.5	1.5	1.5
265	2/22/18	Paint	Building F	Exterior	Floor stripe	Concrete	B	Fair	Negative	0	0.02	0	-0.73	1.13
266	2/22/18	Paint			Calibrate				Positive	2.1	1	2.1	2.2	5.1
267	2/22/18	Paint			Calibrate				Positive	1.4	0.4	1.4	1	3.2
268	2/22/18	Paint			Calibrate				Positive	1.4	0.4	1.4	2.1	2.9
269	2/22/18	Paint	Building F	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0	-0.09	2.67
270	2/22/18	Paint	Building F	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	0	-0.1	2.68

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL Error	PbK Error	PbK Error
271	2/22/18	Paint	Building F	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0.02	0	0.22
272	2/22/18	Paint	Building F	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0	-0.28
273	2/22/18	Paint	Building F	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	0	-0.36
274	2/22/18	Paint	Building F	Exterior	Pipe	Metal	D	Intact	Null	0.04	0.19	0.04	0.12
275	2/22/18	Paint	Building F	Exterior	Pipe	Metal	D	Intact	Negative	0	0.02	0	0.06
276	2/22/18	Paint	Building F	Exterior	Electrical box	Metal	D	Intact	Negative	0.03	0.09	0.03	0.09
277	2/22/18	Paint	Building F	Exterior	Mesh window mesh cover	Metal	D	Intact	Positive	1.4	0.6	0.8	1.4
278	2/22/18	Paint	Building F	Exterior	Vent	Metal	D	Intact	Positive	1.4	0.6	1.4	0.8
279	2/22/18	Paint	Building F	Exterior	Overhang	Wood	D	Poor	Positive	2.7	1.9	2.8	2.7
280	2/22/18	Paint	Building F	Exterior	Conduit	Metal	D	Intact	Negative	0.07	0.14	0.07	-0.58
281	2/22/18	Paint	Building F	Exterior	Fascia	Wood	D	Poor	Positive	0.9	0.2	0.9	0.8
282	2/22/18	Paint	Building F	Exterior	Flashing	Metal	D	Intact	Negative	0	0.03	0	-0.23
283	2/22/18	Paint	Building F	Exterior	Gutter	Metal	D	Intact	Negative	0	0.02	0	-0.09
284	2/22/18	Paint	Building F	Exterior	HVAC unit	Metal		Intact	Negative	0	0.02	0	0
285	2/22/18	Paint	Building F	Exterior	Electrical box	Metal		Intact	Negative	0	0.02	0	-0.11

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286	2/22/18	Paint	Building F	Exterior	Flashing	Metal	D	Intact	Negative	0.01	0.04	0.01	0.04	2.02
287	2/22/18	Paint	Building F	Exterior	Fascia	Wood	D	Poor	Negative	0.02	0.1	0.02	-0.01	1.58
288	2/22/18	Paint	Building F	Exterior	Overhang	Wood	D	Poor	Positive	1.2	0.5	1.6	1.2	0.5
289	2/22/18	Paint	Building F	Exterior	Window flashing	Plaster	D	Intact	Positive	1.1	0.4	1.1	0.4	0.9
290	2/22/18	Paint	Building F	Exterior	Window frame	Metal	D	Intact	Positive	1.1	0.2	1.1	0.2	1.2
291	2/22/18	Paint	Building F	Exterior	Window sash	Metal	D	Intact	Negative	0	0.02	0	0.02	2.17
292	2/22/18	Paint	Building E	Exterior	Wall	Brick	A	Intact	Negative	0	0.02	0	-0.66	1.16
293	2/22/18	Paint	Building E	Exterior	Wall	Brick	B	Intact	Negative	0	0.02	0	-0.55	1.13
294	2/22/18	Paint	Building E	Exterior	Wall	Brick	C	Intact	Negative	0.01	0.02	0.01	-0.51	1.13
295	2/22/18	Paint	Building E	Exterior	Wall	Brick	D	Intact	Negative	0.01	0.02	0.01	0.02	0.87
296	2/22/18	Paint	Building E	Exterior	Base	Stucco	B	Intact	Null	0	0.02	0	0.3	2.14
297	2/22/18	Paint	Building E	Exterior	Base	Stucco	B	Intact	Negative	0	0.02	0	0	0.92
298	2/22/18	Paint	Building E	Exterior	Wall	Wood	B	Poor	Positive	1.8	1	1.3	1.8	1
299	2/22/18	Paint	Building E	Exterior	Window frame	Metal	B	Intact	Positive	1.2	0.3	1.2	1.2	1.3
300	2/22/18	Paint	Building E	Exterior	Transom	Glass	B	Intact	Negative	0	0.02	0	-0.97	1.89

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
301	2/22/18	Paint	Building E	Exterior	Hang rack	Wood	B	Fair	Negative	0	0	0.02	0.23	1.36
302	2/22/18	Paint	Building E	Exterior	Door	Metal	B	Intact	Positive	2.7	2.7	1.6	2.2	3.6
303	2/22/18	Paint	Building E	Exterior	Door frame	Metal	B	Intact	Positive	3.7	2.7	1.7	3.7	2.8
304	2/22/18	Paint	Building E	Exterior	Transom	Metal	B	Intact	Positive	1.6	1.6	0.8	1.1	2.2
305	2/22/18	Paint	Building E	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	-0.6	2.56
306	2/22/18	Paint	Building E	Exterior	Door frame	Metal	D	Intact	Null	0	0	0.02	0.02	6.09
307	2/22/18	Paint	Building E	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.02	0.02	2.84
308	2/22/18	Paint	Building E	Exterior	Door frame	Metal	D	Intact	Null	0	0	0.02	0.4	13.1
309	2/22/18	Paint	Building E	Exterior	Door frame	Metal	D	Intact	Negative	0.01	0.01	0.04	0.1	2.9
310	2/22/18	Paint	Building E	Exterior	Panel	Wood	D	Intact	Negative	0.24	0.24	0.39	-0.06	1.78
311	2/22/18	Paint	Building E	Exterior	Pipe	Metal	D	Intact	Negative	0	0	0.02	-0.27	2.35
312	2/22/18	Paint	Building E	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0	0.02	-0.47	1.12
313	2/22/18	Paint	Building E	Exterior	Conduit	Metal	D	Intact	Negative	0	0	0.02	-0.38	2.13
314	2/22/18	Paint	Building E	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	-0.25	2.46
315	2/22/18	Paint	Building E	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.02	-0.3	2.23

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error	
316	2/22/18	Paint	Building E	Exterior	Window mesh cover	Metal	D	Intact	Negative	0.01	0.02	0.01	0.02	-0.01	2.05
317	2/22/18	Paint	Building E	Exterior	Vent	Metal	D	Intact	Negative	0.06	0.08	0.06	0.09	0.09	0.99
318	2/22/18	Paint	Building E	Exterior	Overhang	Wood	D	Poor	Positive	1.4	0.6	1.1	0.4	1.4	0.6
319	2/22/18	Paint	Building E	Exterior	Conduit	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.07	2.36
320	2/22/18	Paint	Building E	Exterior	Fascia	Wood	D	Fair	Positive	1.4	0.6	1.1	0.4	1.4	0.6
321	2/22/18	Paint	Building E	Exterior	Flashing	Metal	D	Intact	Negative	0	0.02	0	0.02	0.4	1.8
322	2/22/18	Paint	Building E	Exterior	Gutter	Metal	D	Intact	Negative	0	0.02	0	0.02	0.4	1.9
323	2/22/18	Paint	Building E	Exterior	Downspout	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.15	1.78
324	2/22/18	Paint	Building E	Exterior	HVAC unit	Metal		Intact	Negative	0	0.02	0	0.02	-0.24	2.15
325	2/22/18	Paint	Building E	Exterior	Fascia	Wood	D	Poor	Null	0	0.02	0	0.02	0.3	4.87
326	2/22/18	Paint	Building E	Exterior	Fascia	Wood	D	Poor	Negative	0.13	0.13	0.13	0.13	0.17	0.52
327	2/22/18	Paint	Building E	Exterior	Flashing	Metal	D	Intact	Negative	0.01	0.02	0.01	0.02	0.4	0.8
328	2/22/18	Paint	Building E	Exterior	Electrical box	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.14	2.7
329	2/22/18	Paint	Building E	Exterior	Electrical box	Metal	A	Intact	Negative	0	0.02	0	0.02	-0.54	2.23
330	2/22/18	Paint	Building E	Exterior	Window flashing	Metal	D	Intact	Positive	1.4	0.4	1.4	0.4	1.1	1.1

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
331	2/22/18	Paint	Building E	Exterior	Overhang	Wood	D	Poor	Positive	2.1	2.1	0.7	1.7	1
332	2/22/18	Paint	Building E	Exterior	Window frame	Metal	D	Intact	Null	0.6	0.6	0.2	0.6	1.4
333	2/22/18	Paint	Building E	Exterior	Window frame	Metal	D	Intact	Positive	0.9	0.9	0.2	1	1
334	2/22/18	Paint	Building E	Exterior	Window sash	Metal	D	Intact	Negative	0.02	0.02	0.04	-0.39	2.64
335	2/22/18	Paint	Campus	Playground 2	Floor stripe	Concrete		Intact	Negative	0	0	0.02	-0.07	1.09
336	2/22/18	Paint	Campus	Playground 2	Storage shed	Wood		Intact	Negative	0	0	0.02	-0.44	1.64
337	2/22/18	Paint	Campus	Playground 2	Storage shed	Wood		Intact	Negative	0	0	0.02	0.19	1.87
338	2/22/18	Paint	Campus	Playground 2	Play equipment	Metal		Intact	Negative	0	0	0.02	-0.03	2.62
339	2/22/18	Paint	Campus	Playground 2	Play equipment	Metal		Intact	Negative	0	0	0.02	-0.48	2.81
340	2/22/18	Paint	Campus	Playground 2	Play equipment	Metal		Intact	Negative	0	0	0.02	-0.23	2.84
341	2/22/18	Paint	Campus	Playground 2	Monkey bars	Metal		Intact	Negative	0	0	0.02	-0.15	2.09
342	2/22/18	Paint	Campus	Playground 2	Stair	Metal		Intact	Negative	0	0	0.02	-1.43	1.91
343	2/22/18	Paint	Campus	Playground 2	Step bar	Metal		Intact	Negative	0	0	0.02	-0.13	2.65
344	2/22/18	Paint	Campus	Playground 2	Pole	Metal		Intact	Negative	0	0	0.02	-0.92	2.55
345	2/22/18	Paint	Campus	Playground 2	Bench	Metal		Intact	Negative	0	0	0.02	-0.27	2.38

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
346	2/22/18	Paint	Campus	Playground 2	Bench	Metal		Intact	Negative	0	0.02	0	0.02	-0.45	2.75
347	2/22/18	Paint	Campus	Playground 2	Bench	Metal		Intact	Negative	0	0.02	0	0.02	-0.32	2.56
348	2/22/18	Paint	Campus	Playground 2	Sand table	Metal		Intact	Negative	0	0.02	0	0.02	-0.1	2.35
349	2/22/18	Paint	Campus	Playground 2	Bench	fiberglass		Intact	Negative	0	0.02	0	0.02	-0.7	2.07
350	2/22/18	Paint	Campus	Playground 2	Bench	fiberglass		Intact	Negative	0.02	0.04	0.02	0.04	-0.31	2.07
351	2/22/18	Paint	Campus	Playground 2	Canopy	Metal		Intact	Negative	0	0.02	0	0.02	-0.04	2.64
352	2/22/18	Paint	Campus	Playground 2	Fire truck	Metal		Intact	Negative	0	0.02	0	0.02	0	2.48
353	2/22/18	Paint			Calibrate				Positive	1.8	0.5	1.8	0.5	0.8	2.3
354	2/22/18	Paint			Calibrate				Positive	1.7	0.5	1.7	0.5	1	2.6
355	2/22/18	Paint			Calibrate				Positive	1.9	0.6	1.9	0.6	0.9	2.6
356	2/23/18	Paint			Shutter calibrate					1.46	0	0.27	0	0	0
357	2/23/18	Paint			Calibrate				Positive	1.7	0.6	1.7	0.6	1.2	3.1
358	2/23/18	Paint			Calibrate				Positive	1.6	0.5	1.6	0.5	1.5	2.9
359	2/23/18	Paint			Calibrate				Positive	1.9	0.6	1.9	0.6	1.4	3
360	2/23/18	Paint	Building B	Exterior	Wall	Brick	A	Intact	Negative	0	0.02	0	0.02	0.12	1.05
361	2/23/18	Paint	Building B	Exterior	Wall	Brick	B	Intact	Negative	0	0.02	0	0.02	0.4	0.7

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbC Error	PbL Error	PbK	PbK Error
362	2/23/18	Paint	Building B	Exterior	Wall	Brick	C	Intact	Negative	0.01	0.02	0.02	0.01	0.4	0.7
363	2/23/18	Paint	Building B	Exterior	Wall	Brick	D	Intact	Negative	0	0.02	0.02	0	0.5	0.7
364	2/23/18	Paint	Building B	Exterior	Planter	Brick	D	Intact	Negative	0.01	0.02	0.02	0.01	0.4	0.7
365	2/23/18	Paint	Building B	Exterior	Floor stripe	Concrete	B	Intact	Negative	0	0.02	0.02	0	0.17	0.94
366	2/23/18	Paint	Building B	Exterior	Floor stripe	Concrete	B	Fair	Negative	0.01	0.02	0.02	0.01	0.4	0.7
367	2/23/18	Paint	Building B	Exterior	Door	Metal	B	Intact	Negative	0	0.02	0.02	0	-0.05	1.91
368	2/23/18	Paint	Building B	Exterior	Door frame	Metal	B	Intact	Negative	0	0.02	0.02	0	0.5	1.9
369	2/23/18	Paint	Building B	Exterior	Door frame trim	Wood	D	Intact	Positive	1.8	0.9	0.9	2.5	1.8	0.9
370	2/23/18	Paint	Building B	Exterior	Window frame	Metal	D	Intact	Positive	2	1	1	2	2.6	2.5
371	2/23/18	Paint	Building B	Exterior	Fascia	Wood	D	Intact	Positive	1.2	0.4	0.4	1.2	1.4	0.6
372	2/23/18	Paint	Building B	Exterior	Panel	Wood	B	Fair	Negative	0.03	0.12	0.12	0.03	0.5	1.5
373	2/23/18	Paint	Building B	Exterior	Pipe	Metal	B	Peeling	Negative	0	0.02	0.02	0	0.5	1.9
374	2/23/18	Paint	Building B	Exterior	Vent	Metal	B	Intact	Positive	1.7	0.9	0.9	1.7	1	1.8
375	2/23/18	Paint	Building B	Exterior	Conduit	Metal	D	Intact	Negative	0	0.02	0.02	0	0	2.24
376	2/23/18	Paint	Building B	Exterior	Electrical box	Metal	D	Intact	Negative	0	0.02	0.02	0	0.23	2.19

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
377	2/23/18	Paint	Building B	Exterior	Electrical box	Metal	D	Intact	Negative	0	0	0.02	-0.02	2
378	2/23/18	Paint	Building B	Exterior	Overhang	Wood	D	Intact	Positive	1.1	1.2	0.3	1.1	0.4
379	2/23/18	Paint	Building B	Exterior	Flashing	Metal	C	Intact	Negative	0	0	0.02	0.28	1.86
380	2/23/18	Paint	Building B	Exterior	Fascia	Wood	C	Fair	Positive	2.7	0.9	1	2.7	1.8
381	2/23/18	Paint	Building B	Exterior	Gutter	Metal	D	Intact	Negative	0	0	0.02	-0.72	1.55
382	2/23/18	Paint	Building B	Exterior	Downspout	Metal	D	Intact	Positive	1.4	1.4	0.5	1	0.9
383	2/23/18	Paint	Building B	Exterior	HVAC unit	Metal		Intact	Negative	0	0	0.02	0.5	1.8
384	2/23/18	Paint	Building B	Exterior	Downspout	Metal	B	Intact	Positive	1	1	0.2	2.2	1.3
385	2/23/18	Paint	Building C	Exterior	Wall	Metal	A	Intact	Negative	0.01	0.01	0.02	0.7	0.5
386	2/23/18	Paint	Building C	Exterior	Wall	Brick	B	Intact	Negative	0	0	0.02	0.24	0.83
387	2/23/18	Paint	Building C	Exterior	Wall	Brick	C	Intact	Negative	0	0	0.02	0.5	0.7
388	2/23/18	Paint	Building C	Exterior	Wall	Brick	C	Intact	Negative	0.01	0.01	0.02	0.1	0.87
389	2/23/18	Paint	Building C	Exterior	Wall	Brick	D	Intact	Negative	0	0	0.02	0.25	0.82
390	2/23/18	Paint	Building C	Exterior	Wall	Wood	B	Fair	Negative	0	0	0.03	0.13	1.57
391	2/23/18	Paint	Building C	Exterior	Wall	Wood	B	Fair	Negative	0	0	0.02	-0.01	1.67

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL Error	PbK Error
392	2/23/18	Paint	Building C	Exterior	Transom	Glass	B	Intact	Negative	0	0.02	-0.52
393	2/23/18	Paint	Building C	Exterior	Window frame	Metal	B	Intact	Negative	0	0.02	-0.64
394	2/23/18	Paint	Building C	Exterior	Hang rack	Wood	B	Intact	Negative	0	0.03	1.35
395	2/23/18	Paint	Building C	Exterior	Door	Metal	B	Intact	Negative	0	0.02	0.4
396	2/23/18	Paint	Building C	Exterior	Door frame	Metal	B	Intact	Negative	0	0.02	-0.07
397	2/23/18	Paint	Building C	Exterior	Transom	Metal	B	Intact	Negative	0	0.02	0.28
398	2/23/18	Paint	Building C	Exterior	Floor stripe	Concrete	B	Fair	Negative	0	0.02	-0.03
399	2/23/18	Paint	Building C	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0.02	0.4
400	2/23/18	Paint	Building C	Exterior	Door	Metal	D	Intact	Negative	0	0.02	-0.25
401	2/23/18	Paint	Building C	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	0.09
402	2/23/18	Paint	Building C	Exterior	Door	Metal	D	Intact	Negative	0	0.02	-0.07
403	2/23/18	Paint	Building C	Exterior	Door frame	Metal	B	Intact	Negative	0	0.02	-0.41
404	2/23/18	Paint	Building C	Exterior	Vent	Metal	D	Intact	Positive	1.9	0.9	1.6
405	2/23/18	Paint	Building C	Exterior	Pipe	Metal	D	Intact	Negative	0.11	0.09	-0.05
406	2/23/18	Paint	Building C	Exterior	Mesh window cover	Metal	D	Intact	Negative	0.01	0.05	0.6

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
407	2/23/18	Paint	Building C	Exterior	Conduit	Metal	D	Intact	Negative	0	0	0.02	0.9	1.1
408	2/23/18	Paint	Building C	Exterior	Overhang	Wood	D	Intact	Negative	0	0	0.02	0.4	0.8
409	2/23/18	Paint	Building C	Exterior	Fascia	Metal	D	Intact	Negative	0	0	0.02	0.2	1.77
410	2/23/18	Paint	Building C	Exterior	Flashing	Metal	D	Intact	Negative	0	0	0.02	0.04	1.72
411	2/23/18	Paint	Building C	Exterior	Gutter	Metal	D	Intact	Negative	0	0	0.02	-0.08	1.5
412	2/23/18	Paint	Building C	Exterior	Electrical box	Metal	D	Intact	Negative	0	0	0.02	-0.19	2
413	2/23/18	Paint	Building C	Exterior	HVAC unit	Metal		Intact	Negative	0	0	0.02	-0.38	1.81
414	2/23/18	Paint	Building C	Exterior	Fascia	Wood	D	Intact	Negative	0	0	0.02	-0.03	1.53
415	2/23/18	Paint	Building C	Exterior	Flashing	Metal	D	Intact	Negative	0	0	0.02	0.07	1.95
416	2/23/18	Paint	Building C	Exterior	Overhang	Wood	D	Poor	Negative	0.01	0.01	0.05	-0.05	1.2
417	2/23/18	Paint	Building C	Exterior	Window flashing	Metal	D	Intact	Negative	0	0	0.02	0.3	1.98
418	2/23/18	Paint	Building C	Exterior	Window frame	Metal	D	Intact	Null	0	0	0.14	0.5	4.8
419	2/23/18	Paint	Building C	Exterior	Window frame	Metal	D	Intact	Negative	0	0	0.02	-0.32	2.77
420	2/23/18	Paint	Building C	Exterior	Window sash	Metal	D	Intact	Negative	0	0	0.02	-0.35	2.62
421	2/23/18	Paint			Calibrate				Positive	1.5	1.5	0.1	1.2	0.7

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
422	2/23/18	Paint			Calibrate				Positive	1.7	0.2	1.7	0.2	1.4	1
423	2/23/18	Paint			Calibrate				Positive	1.8	0.8	1.8	0.8	0.7	3.3
424	2/26/18	Paint			Shutter calibrate					1.56	0	0.28	0	0	0
425	2/26/18	Paint			Calibrate				Positive	1.4	0.3	1.4	0.3	2.3	2.3
426	2/26/18	Paint			Calibrate				Positive	1.7	0.6	1.7	0.6	1.4	3.6
427	2/26/18	Paint			Calibrate				Positive	1.6	0.8	1.6	0.8	0.5	5
428	2/26/18	Paint	Building D	Exterior	Wall	Brick	A	Intact	Negative	0	0.02	0	0.02	0.14	0.98
429	2/26/18	Paint	Building D	Exterior	Wall	Brick	B	Intact	Negative	0.03	0.06	0.03	0.06	-0.48	1.09
430	2/26/18	Paint	Building D	Exterior	Wall	Brick	C	Intact	Negative	0	0.02	0	0.02	0.5	0.6
431	2/26/18	Paint	Building D	Exterior	Wall	Brick	D	Intact	Null	0.04	0.09	0.04	0.09	-0.22	1.04
432	2/26/18	Paint	Building D	Exterior	Wall	Brick	D	Intact	Negative	0	0.02	0	0.02	0.07	1.03
433	2/26/18	Paint	Building D	Exterior	Wall	Wood	B	Poor	Null	0.4	0.4	0.4	0.4	0.5	1.8
434	2/26/18	Paint	Building D	Exterior	Wall	Wood	B	Poor	Positive	2	1.1	1.1	0.6	2	1.1
435	2/26/18	Paint	Building D	Exterior	Window frame	Metal	B	Intact	Positive	1.2	0.5	1.2	0.5	1.1	1.2
436	2/26/18	Paint	Building D	Exterior	Transom	Glass	B	Intact	Negative	0	0.02	0	0.02	-0.44	0.55
437	2/26/18	Paint	Building D	Exterior	Hang rack	Wood	B	Intact	Negative	0	0.02	0	0.02	-0.07	1.42

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbC Error	PbL Error	PbK Error	PbK Error
438	2/26/18	Paint	Building D	Exterior	Door	Metal	B	Intact	Null	1.7	1.7	0.4	0.4	1.3	0.6
439	2/26/18	Paint	Building D	Exterior	Door	Metal	B	Intact	Positive	2.4	3	1.3	0.8	2.4	1.3
440	2/26/18	Paint	Building D	Exterior	Door frame	Metal	B	Intact	Null	0.09	0.09	0.34	0.34	1.4	3.6
441	2/26/18	Paint	Building D	Exterior	Door frame	Metal	B	Intact	Positive	1.9	1.3	1	0.5	1.9	1
442	2/26/18	Paint	Building D	Exterior	Transom	Metal	B	Intact	Null	0.7	0.7	0.3	0.3	0.5	1.2
443	2/26/18	Paint	Building D	Exterior	Transom	Metal	B	Intact	Null	0.7	0.7	2	2	0.4	10
444	2/26/18	Paint	Building D	Exterior	Transom	Metal	B	Intact	Positive	1.3	1.3	0.5	0.5	0.8	1.2
445	2/26/18	Paint	Building D	Exterior	Conduit	Metal	C	Intact	Negative	0.02	0.02	0.06	0.06	0.2	3.24
446	2/26/18	Paint	Building D	Exterior	Electrical box	Metal	C	Intact	Negative	0.11	0.11	0.24	0.24	0.5	3
447	2/26/18	Paint	Building D	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0	0.02	0.02	-0.18	1.06
448	2/26/18	Paint	Building D	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	0.02	-0.52	2.24
449	2/26/18	Paint	Building D	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.02	0.02	0.16	2.65
450	2/26/18	Paint	Building D	Exterior	Panel	Wood	D	Intact	Negative	0.15	0.15	0.24	0.24	-0.05	1.53
451	2/26/18	Paint	Building D	Exterior	Pipe	Metal	D	Intact	Negative	0	0	0.02	0.02	-0.43	2.17
452	2/26/18	Paint	Building D	Exterior	Window mesh cover	Metal	D	Intact	Negative	0.02	0.02	0.07	0.07	-0.08	1.98

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL Error	PbK Error	PbC Error	PbL Error	PbK Error
453	2/26/18	Paint	Building D	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0.12	0	0.02	2.47
454	2/26/18	Paint	Building D	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	-0.09	0	0.02	2.65
455	2/26/18	Paint	Building D	Exterior	Conduit	Metal	D	Intact	Null	0	0.03	1.2	0	0.03	6.9
456	2/26/18	Paint	Building D	Exterior	Conduit	Metal	D	Intact	Negative	0	0.02	0.29	0	0.02	2.42
457	2/26/18	Paint	Building D	Exterior	Overhang	Wood	D	Intact	Positive	0.9	0.2	0.7	0.9	0.2	0.4
458	2/26/18	Paint	Building D	Exterior	Flashing	Metal	D	Intact	Negative	0	0.02	0.02	0	0.02	1.89
459	2/26/18	Paint	Building D	Exterior	Fascia	Wood	D	Poor	Negative	0.02	0.09	-0.2	0.02	0.09	1.32
460	2/26/18	Paint	Building D	Exterior	Gutter	Metal	D	Poor	Negative	0	0.02	-0.34	0	0.02	1.26
461	2/26/18	Paint	Building D	Exterior	Downspout	Metal	D	Intact	Negative	0	0.02	-0.1	0	0.02	1.82
462	2/26/18	Paint	Building D	Exterior	HVAC unit	Metal	Roof	Intact	Negative	0	0.02	0.6	0	0.02	2.3
463	2/26/18	Paint	Building D	Exterior	Flashing	Metal	D	Intact	Negative	0.01	0.04	-0.22	0.01	0.04	1.6
464	2/26/18	Paint	Building D	Exterior	Fascia	Wood	D	Poor	Negative	0	0.02	0.6	0	0.02	1.3
465	2/26/18	Paint	Building D	Exterior	Window flashing	Metal	D	Intact	Null	1.5	3.1	0.6	1.5	3.1	6.5
466	2/26/18	Paint	Building D	Exterior	Window flashing	Metal	D	Intact	Positive	1.3	0.4	1.1	1.3	0.4	1
467	2/26/18	Paint	Building D	Exterior	Window frame	Metal	D	Intact	Null	0.8	0.1	0.7	0.8	0.1	0.6

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
468	2/26/18	Paint	Building D	Exterior	Window frame	Metal	D	Intact	Null	0.7	0.6	0.7	1.1	3.5
469	2/26/18	Paint	Building D	Exterior	Window frame	Metal	D	Intact	Positive	0.8	0.1	0.8	0.6	0.5
470	2/26/18	Paint	Building D	Exterior	Window sash	Metal	D	Intact	Negative	0.09	0.19	0.09	-0.33	2.57
471	2/26/18	Paint	Building D	Exterior	Overhang	Wood	D	Intact	Positive	1.3	0.4	1.3	1.3	0.6
472	2/26/18	Paint	Building K	Exterior	Wall	Brick	A	Intact	Negative	0	0.02	0	0.17	0.95
473	2/26/18	Paint	Building K	Exterior	Wall	Brick	B	Intact	Negative	0	0.02	0	-0.26	1.13
474	2/26/18	Paint	Building K	Exterior	Wall	Brick	C	Intact	Negative	0.01	0.02	0.01	-0.41	1.16
475	2/26/18	Paint	Building K	Exterior	Wall	Brick	D	Intact	Negative	0	0.02	0	-0.39	1.18
476	2/26/18	Paint	Building K	Exterior	Wall	Wood	B	Poor	Negative	0.28	0.34	0.28	-0.23	1.47
477	2/26/18	Paint	Building K	Exterior	Wall	Wood	B	Intact	Null	1	0.4	1	0.4	0.7
478	2/26/18	Paint	Building K	Exterior	Wall	Wood	B	Poor	Negative	0.23	0.15	0.23	0.08	0.72
479	2/26/18	Paint	Building K	Exterior	Transom	Glass	B	Intact	Negative	0	0.02	0	-0.59	2.05
480	2/26/18	Paint	Building K	Exterior	Window frame	Metal	B	Intact	Negative	0.4	0.2	0.4	-0.17	1.19
481	2/26/18	Paint	Building K	Exterior	Hang rack	Wood	B	Intact	Negative	0	0.02	0	-0.37	1.37
482	2/26/18	Paint	Building K	Exterior	Door	Metal	B	Intact	Positive	1	0.3	1	0.3	0.89

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
483	2/26/18	Paint	Building K	Exterior	Door frame	Metal	B	Intact	Positive	1.2	1.2	0.4	1.1	1.3
484	2/26/18	Paint	Building K	Exterior	Transom	Metal	B	Intact	Positive	0.9	0.9	0.2	1	0.8
485	2/26/18	Paint	Building K	Exterior	Conduit	Metal	C	Intact	Negative	0.12	0.12	0.2	0.7	3
486	2/26/18	Paint	Building K	Exterior	Electrical box	Metal	C	Intact	Negative	0.16	0.16	0.26	0.5	3.1
487	2/26/18	Paint	Building K	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0	0.02	-0.32	1.17
488	2/26/18	Paint	Building K	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0	0.02	-0.2	1.1
489	2/26/18	Paint	Building K	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0	0.02	-0.37	1.15
490	2/26/18	Paint	Building K	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0	0.02	0.1	1.02
491	2/26/18	Paint	Building K	Exterior	Vent	Metal	D	Intact	Negative	0.4	0.4	0.2	0.24	1.02
492	2/26/18	Paint	Building K	Exterior	Wall	Stucco	D	Intact	Negative	0	0	0.02	0.09	0.88
493	2/26/18	Paint	Building K	Exterior	Hand rail	Metal	D	Poor	Negative	0	0	0.02	-0.16	2.8
494	2/26/18	Paint	Building K	Exterior	Door	Metal	D	Intact	Negative	0	0	0.02	-0.2	2.66
495	2/26/18	Paint	Building K	Exterior	Door frame	Metal	D	Intact	Negative	0	0	0.02	-0.29	2.79
496	2/26/18	Paint	Building K	Exterior	Door	Wood	D	Intact	Negative	0.3	0.3	0.38	-0.69	1.63
497	2/26/18	Paint	Building K	Exterior	Door frame	Wood	D	Intact	Negative	0.6	0.6	0.1	0.5	0.3

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
498	2/26/18	Paint	Building K	Exterior	Pipe	Metal	D	Intact	Negative	0	0	0.02	-0.05	2.89
499	2/26/18	Paint	Building K	Exterior	Vent	Metal	D	Intact	Negative	-0.41	0.17	0.21	-0.41	0.99
500	2/26/18	Paint	Building K	Exterior	Conduit	Metal	D	Intact	Negative	0	0	0.02	0.4	2.6
501	2/26/18	Paint	Building K	Exterior	Overhang	Stucco	D	Intact	Negative	0	0	0.02	-0.08	1.04
502	2/26/18	Paint	Building K	Exterior	Fascia	Concrete	D	Intact	Negative	0	0	0.02	-0.2	1.28
503	2/26/18	Paint	Building K	Exterior	Flashing	Metal	D	Intact	Negative	0.01	0.01	0.04	0.12	2.09
504	2/26/18	Paint	Building K	Exterior	Fascia	Wood	D	Poor	Positive	1.1	1.1	0.2	1.1	0.4
505	2/26/18	Paint	Building K	Exterior	HVAC unit	Metal	Roof	Intact	Negative	0	0	0.02	-0.32	1.85
506	2/26/18	Paint	Building K	Exterior	Flashing	Metal	D	Intact	Negative	0	0	0.02	0	2.03
507	2/26/18	Paint	Building K	Exterior	Fascia	Wood	D	Poor	Positive	0.9	0.9	0.2	0.8	0.4
508	2/26/18	Paint	Building K	Exterior	Overhang	Stucco	D	Intact	Negative	0	0	0.02	-0.71	1.06
509	2/26/18	Paint	Building K	Exterior	Window frame	Metal	D	Intact	Negative	0.24	0.24	0.16	0.05	1.26
510	2/26/18	Paint	Building K	Exterior	Window sash	Metal	D	Intact	Negative	0.4	0.4	0.2	-0.14	1.14
511	2/26/18	Paint	Building K	Exterior	Window flashing	Metal		Intact	Negative	0.26	0.26	0.24	0.7	1.8
512	2/26/18	Paint			Calibrate				Positive	1.8	1.8	0.5	0.28	2.62

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
513	2/26/18	Paint			Calibrate				Positive	1.7	1.7	0.5	0.8	2.9
514	2/26/18	Paint			Calibrate				Positive	1.6	1.6	0.5	1.3	2.9
515	2/26/18	Paint	Building J	Exterior	Wall	Brick	A	Intact	Negative	0	0	0.02	-0.17	1.17
516	2/26/18	Paint	Building J	Exterior	Wall	Brick	B	Intact	Negative	0	0	0.02	-0.74	1.23
517	2/26/18	Paint	Building J	Exterior	Wall	Brick	C	Intact	Negative	0	0	0.02	-0.65	1.14
518	2/26/18	Paint	Building J	Exterior	Wall	Brick	D	Intact	Negative	0.01	0.01	0.04	-0.43	1.19
519	2/26/18	Paint	Building J	Exterior	Wall	Wood	B	Poor	Negative	0	0	0.02	-0.5	1.57
520	2/26/18	Paint	Building J	Exterior	Wall	Wood	B	Poor	Negative	0.1	0.1	0.14	-0.43	1.81
521	2/26/18	Paint	Building J	Exterior	Transom	Glass	B	Intact	Negative	0	0	0.02	-1.33	2.02
522	2/26/18	Paint	Building J	Exterior	Window frame	Metal	B	Intact	Negative	0	0	0.02	-1	2.64
523	2/26/18	Paint	Building J	Exterior	Door	Metal	B	Intact	Negative	0	0	0.02	-0.4	2.34
524	2/26/18	Paint	Building J	Exterior	Door frame	Metal	B	Intact	Negative	0	0	0.02	0.4	3
525	2/26/18	Paint	Building J	Exterior	Transom	Metal	B	Intact	Negative	0	0	0.02	-0.73	1.63
526	2/26/18	Paint	Building J	Exterior	Hang rack	Wood	B	Intact	Negative	0	0	0.02	0.16	1.6
527	2/26/18	Paint	Building J	Exterior	Floor stripe	Concrete	D	Intact	Negative	0	0	0.02	-0.5	1.23

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
528	2/26/18	Paint	Building J	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0	0.02	0.09	2.72
529	2/26/18	Paint	Building J	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.04	1.99
530	2/26/18	Paint	Building J	Exterior	Wall	Stucco	D	Intact	Negative	0	0.02	0	0.02	-0.03	1.01
531	2/26/18	Paint	Building J	Exterior	Vent	Metal	D	Intact	Negative	0.21	0.24	0.21	0.24	-0.37	2.47
532	2/26/18	Paint	Building J	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.23	2.8
533	2/26/18	Paint	Building J	Exterior	Door frame	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.29	2.33
534	2/26/18	Paint	Building J	Exterior	Conduit	Metal	D	Intact	Negative	0	0.02	0	0.02	0.14	2.73
535	2/26/18	Paint	Building J	Exterior	Overhang	Stucco	D	Intact	Negative	0	0.02	0	0.02	-0.16	1
536	2/26/18	Paint	Building J	Exterior	Flashing	Metal	D	Intact	Negative	0.01	0.03	0.01	0.03	-0.03	2.43
537	2/26/18	Paint	Building J	Exterior	Fascia	Wood	D	Fair	Negative	0.4	0.2	0.4	0.2	-0.05	0.67
538	2/26/18	Paint	Building J	Exterior	HVAC unit	Metal	Roof	Intact	Negative	0	0.02	0	0.02	-0.17	2.38
539	2/26/18	Paint	Building J	Exterior	Vent	Metal	Roof	Fair	Negative	0	0.02	0	0.02	-0.74	2.11
540	2/26/18	Paint	Building J	Exterior	Electrical box	Metal	Roof	Intact	Negative	0	0.02	0	0.02	0.8	2.5
541	2/26/18	Paint	Building J	Exterior	Flashing	Metal	D	Intact	Negative	0.01	0.05	0.01	0.05	-0.08	2.17
542	2/26/18	Paint	Building J	Exterior	Fascia	Wood	D	Poor	Negative	0.12	0.2	0.12	0.2	0.2	1.48

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
543	2/26/18	Paint	Building J	Exterior	Overhang	Stucco	D	Intact	Negative	0	0	0.02	0.11	1.02
544	2/26/18	Paint	Building J	Exterior	Window flashing	Metal	D	Intact	Negative	0.09	0.09	0.13	-0.53	2.53
545	2/26/18	Paint	Building J	Exterior	Window sash	Metal	D	Intact	Negative	0.12	0.12	0.19	-0.16	2.66
546	2/26/18	Paint	Campus	Storage bin	Wall	Metal	A	Intact	Negative	0	0	0.02	-0.49	2.83
547	2/26/18	Paint	Campus	Playground 1	Canopy	Metal		Intact	Negative	0	0	0.02	-0.55	2.99
548	2/26/18	Paint	Campus	Playground 1	Bench	Metal		Intact	Negative	0	0	0.02	-0.39	0.94
549	2/26/18	Paint	Campus	Playground 1	Bench	Metal		Intact	Negative	0	0	0.02	-0.39	2.73
550	2/26/18	Paint	Campus	Playground 1	Floor stripe	Concrete		Intact	Null	0	0	0.02	0.25	2.55
551	2/26/18	Paint	Campus	Playground 1	Floor stripe	Concrete		Intact	Null	0	0	0.02	0.1	1.93
552	2/26/18	Paint	Campus	Playground 1	Floor stripe	Concrete		Intact	Negative	0	0	0.02	-0.47	2.22
553	2/26/18	Paint	Campus	Playground 1	Pole	Metal		Intact	Negative	0	0	0.02	0.4	3.2
554	2/26/18	Paint	Campus	Playground 1	Ladder	Metal		Intact	Negative	0	0	0.02	-1.01	2.92
555	2/26/18	Paint	Campus	Basketball court	Pole	Metal		Poor	Negative	0.25	0.25	0.27	0.4	2.2
556	2/26/18	Paint	Campus	Basketball court	Floor stripe	Concrete		Poor	Negative	0.07	0.07	0.11	0	3.23
557	2/26/18	Paint	Campus	Handball court	Wall	Wood		Intact	Negative	0	0	0.02	-0.68	1.47

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
558	2/26/18	Paint	Campus	Handball court	Wall	Metal		Intact	Negative	0	0	0.02	-0.13	2.53
559	2/26/18	Paint	Campus	Field	Goal post	Metal		Intact	Negative	0	0	0.02	-1.13	1.22
560	2/26/18	Paint	Campus	West parking	Flag pole	Metal		Intact	Negative	0	0	0.02	0.4	3.2
561	2/26/18	Paint	Campus	West parking	Bell pole	Metal		Poor	Negative	0.01	0.01	0.03	-0.16	2.94
562	2/26/18	Paint	Campus	West parking	School sign	Metal		Intact	Negative	0	0	0.02	-0.2	1.3
563	2/26/18	Paint	Campus	West parking	Floor stripe	Concrete		Intact	Negative	0	0	0.02	0.26	2.43
564	2/26/18	Paint	Campus	West parking	Floor stripe	Concrete		Intact	Negative	0	0	0.02	-0.18	3.16
565	2/26/18	Paint	Campus	West parking	Curb	Concrete		Intact	Negative	0.12	0.12	0.07	-0.25	1.28
566	2/26/18	Paint	Campus	West parking	Curb	Concrete		Intact	Negative	0	0	0.02	-0.75	1.26
567	2/26/18	Paint	Campus	West parking	Planter	Stucco		Intact	Negative	0	0	0.02	-0.13	1.1
568	2/26/18	Paint	Campus	Southeast parking	Floor stripe	Concrete		Intact	Negative	0	0	0.02	-0.32	1.17
569	2/26/18	Paint	Campus	Southeast parking	Floor stripe	Concrete		Intact	Negative	0	0	0.02	-0.52	1.28
570	2/26/18	Paint	Campus	Southeast parking	Floor stripe	Concrete		Intact	Negative	0	0	0.02	-0.67	1.12
571	2/26/18	Paint			Calibrate				Positive	1.7	1.7	0.4	0.8	2
572	2/26/18	Paint			Calibrate				Positive	1.6	1.6	0.4	0.8	2

Little Lake CSD
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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error	
573	2/26/18	Paint			Calibrate				Positive	1.5	0.3	1.5	0.3	0.9	2
574	2/27/18	Paint			Shutter calibrate					1.6	0	0.31	0	0.01	0
575	2/27/18	Paint			Calibrate				Positive	1.4	0.4	1.4	0.4	1.3	2.7
576	2/27/18	Paint			Calibrate				Positive	1.4	0.4	1.4	0.4	1.3	2.4
577	2/27/18	Paint			Calibrate				Positive	1.6	0.5	1.6	0.5	1.5	2.7
578	2/27/18	Paint	Multi-Purpose Building	Exterior	Wall	Brick	A	Intact	Null	0	0.02	0	0.02	0.18	2.89
579	2/27/18	Paint	Multi-Purpose Building	Exterior	Wall	Brick	A	Intact	Negative	0.01	0.02	0.01	0.02	0.4	0.7
580	2/27/18	Paint	Multi-Purpose Building	Exterior	Wall	Brick	B	Intact	Negative	0	0.02	0	0.02	0.21	0.84
581	2/27/18	Paint	Multi-Purpose Building	Exterior	Wall	Brick	C	Intact	Negative	0	0.02	0	0.02	0.13	0.94
582	2/27/18	Paint	Multi-Purpose Building	Exterior	Wall	Brick	D	Intact	Negative	0	0.02	0	0.02	0.21	0.87
583	2/27/18	Paint	Multi-Purpose Building	Exterior	Old furnace	Metal	B	Poor	Negative	0.02	0.03	0.02	0.03	0.5	2.5
584	2/27/18	Paint	Multi-Purpose Building	Exterior	Chimney door	Metal	B	Intact	Negative	0.14	0.13	0.14	0.13	0.25	2.55
585	2/27/18	Paint	Multi-Purpose Building	Exterior	Conduit	Metal	B	Intact	Negative	0	0.02	0	0.02	-0.17	0.69
586	2/27/18	Paint	Multi-Purpose Building	Exterior	Electrical box	Metal	B	Intact	Negative	0	0.02	0	0.02	-0.2	0.78
587	2/27/18	Paint	Multi-Purpose Building	Exterior	Door	Metal	B	Intact	Negative	0	0.02	0	0.02	0.27	2.56
588	2/27/18	Paint	Multi-Purpose Building	Exterior	Door frame	Metal	B	Intact	Negative	0.1	0.17	0.1	0.17	0.2	2.99

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
589	2/27/18	Paint	Multi-Purpose Building	Exterior	Vent	Metal	B	Intact	Negative	0.19	0.23	0.19	0.23	-0.42	2.52
590	2/27/18	Paint	Multi-Purpose Building	Exterior	Panel	Wood	B	Intact	Negative	0	0.02	0	0.02	0.22	1.46
591	2/27/18	Paint	Multi-Purpose Building	Exterior	Gas meter	Metal	B	Intact	Negative	0.02	0.04	0.02	0.04	0.8	2.9
592	2/27/18	Paint	Multi-Purpose Building	Exterior	HVAC unit	Metal	C	Intact	Negative	0	0.02	0	0.02	-0.06	2.6
593	2/27/18	Paint	Multi-Purpose Building	Exterior	Mesh vent cover	Metal	D	Intact	Negative	0.27	0.28	0.27	0.28	0.19	2.12
594	2/27/18	Paint	Multi-Purpose Building	Exterior	HVAC unit	Metal	D	Poor	Negative	0.12	0.23	0.12	0.23	0.2	2.4
595	2/27/18	Paint	Multi-Purpose Building	Exterior	Window frame	Metal	C	Intact	Negative	0	0.02	0	0.02	0.4	2.5
596	2/27/18	Paint	Multi-Purpose Building	Exterior	Pipe	Metal	D	Intact	Negative	0.19	0.13	0.19	0.13	0.6	3.1
597	2/27/18	Paint	Multi-Purpose Building	Exterior	Door	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.19	1.74
598	2/27/18	Paint	Multi-Purpose Building	Exterior	Door frame	Metal	D	Intact	Negative	0.06	0.09	0.06	0.09	-0.08	2.8
599	2/27/18	Paint	Multi-Purpose Building	Exterior	Flashing	Metal	D	Intact	Negative	0	0.02	0	0.02	0.3	1.88
600	2/27/18	Paint	Multi-Purpose Building	Exterior	Fascia	Wood	D	Poor	Negative	0.01	0.04	0.01	0.04	0.3	1.26
601	2/27/18	Paint	Multi-Purpose Building	Exterior	Overhang	Stucco	A	Intact	Negative	0	0.02	0	0.02	-0.04	0.99
602	2/27/18	Paint	Multi-Purpose Building	Exterior	HVAC unit	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.19	2.37
603	2/27/18	Paint	Multi-Purpose Building	Exterior	Duct	Metal	Roof	Intact	Negative	0.04	0.05	0.04	0.05	-0.05	1.37

Little Lake CSD
Lakeland Elementary School

Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
604	2/27/18	Paint	Multi-Purpose Building	Exterior	Vent	Metal	Roof	Intact	Negative	0.03	0.03	0.05	-0.34	1.74
605	2/27/18	Paint	Multi-Purpose Building	Exterior	Flashing	Metal	D	Intact	Negative	0.19	0.19	0.18	-0.27	1.8
606	2/27/18	Paint	Multi-Purpose Building	Exterior	Flashing	Metal	D	Intact	Negative	0	0	0.02	0.09	1.74
607	2/27/18	Paint	Multi-Purpose Building	Exterior	Overhang	Stucco	D	Intact	Null	0	0	0.02	0.4	2.9
608	2/27/18	Paint	Multi-Purpose Building	Exterior	Overhang	Stucco	D	Intact	Null	0.01	0.01	0.02	0.9	0.5
609	2/27/18	Paint	Multi-Purpose Building	Exterior	Overhang	Stucco	D	Intact	Negative	0	0	0.02	0.5	0.6
610	2/27/18	Paint	Multi-Purpose Building	Exterior	Flashing	Metal	D	Intact	Negative	0	0	0.02	0.17	1.59
611	2/27/18	Paint	Multi-Purpose Building	Exterior	Fascia	Wood	D	Poor	Negative	0.18	0.18	0.27	0.3	1.21
612	2/27/18	Paint	Multi-Purpose Building	Exterior	HVAC unit	Metal		Intact	Negative	0	0	0.02	-0.44	1.82
613	2/27/18	Paint	Multi-Purpose Building	Exterior	Chimney	Brick	B	Intact	Null	0.01	0.01	0.02	0.4	0.8
614	2/27/18	Paint	Multi-Purpose Building	Exterior	Vent	Metal	Roof	Fair	Negative	0.05	0.05	0.09	0.5	2.8
615	2/27/18	Paint	Administration Building	Exterior	Wall	Brick	A	Intact	Null	0	0	0.02	0.29	1.91
616	2/27/18	Paint	Administration Building	Exterior	Wall	Brick	A	Intact	Negative	0	0	0.02	0.12	0.93
617	2/27/18	Paint	Administration Building	Exterior	Wall	Brick	B	Intact	Negative	0	0	0.02	0.3	0.72
618	2/27/18	Paint	Administration Building	Exterior	Wall	Brick	C	Intact	Negative	0	0	0.02	0.14	0.83

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
619	2/27/18	Paint	Administration Building	Exterior	Wall	Brick	D	Intact	Negative	0.02	0.05	0.02	0	1.04
620	2/27/18	Paint	Administration Building	Exterior	Planter	Terrazzo	A	Intact	Null	0	0.02	0	-0.09	14.63
621	2/27/18	Paint	Administration Building	Exterior	Planter	Stucco	A	Intact	Null	0	0.02	0	0.9	0.6
622	2/27/18	Paint	Administration Building	Exterior	Planter	Stucco	A	Intact	Null	0	0.02	0	0.28	1.75
623	2/27/18	Paint	Administration Building	Exterior	Planter	Stucco	A	Intact	Negative	0	0.02	0	0.03	2.4
624	2/27/18	Paint	Administration Building	Exterior	Floor stripe	Concrete	A	Intact	Negative	0	0.02	0	-0.01	0.95
625	2/27/18	Paint	Administration Building	Exterior	Door	Metal	A	Intact	Negative	0	0.02	0	-0.28	2.39
626	2/27/18	Paint	Administration Building	Exterior	Door frame	Metal	A	Intact	Negative	0	0.02	0	0.11	2.18
627	2/27/18	Paint	Administration Building	Exterior	Downspout	Metal	A	Intact	Negative	0.05	0.1	0.05	0.7	2.7
628	2/27/18	Paint	Administration Building	Exterior	Window frame	Metal	A	Intact	Positive	1.6	0.9	1.6	2.1	2.4
629	2/27/18	Paint	Administration Building	Exterior	HVAC unit	Metal	A	Intact	Negative	0.01	0.04	0.01	-0.27	1.89
630	2/27/18	Paint	Administration Building	Exterior	Transom	Wood	B	Intact	Null	0.04	0.88	0.04	0.12	7.37
631	2/27/18	Paint	Administration Building	Exterior	Transom	Wood	A	Intact	Negative	0	0.02	0	-0.43	1.46
632	2/27/18	Paint	Administration Building	Exterior	Door frame	Wood	A	Intact	Positive	1.9	1	1.9	1.6	1.6
633	2/27/18	Paint	Administration Building	Exterior	Transom	Wood	A	Intact	Positive	1.8	0.9	1.8	1.7	1.8

Little Lake CSD
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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC Error	PbL	PbL Error	PbK	PbK Error
634	2/27/18	Paint	Administration Building	Exterior	Sign	Wood	A	Intact	Negative	0	0	0.02	0.2	1.65
635	2/27/18	Paint	Administration Building	Exterior	Panel	Wood	B	Intact	Negative	0	0	0.02	-0.01	1.01
636	2/27/18	Paint	Administration Building	Exterior	Pipe	Metal	B	Intact	Negative	0.01	0.01	0.05	-0.01	2.75
637	2/27/18	Paint	Administration Building	Exterior	Window frame	Metal	B	Intact	Negative	0.6	0.6	0.1	0.6	0.5
638	2/27/18	Paint	Administration Building	Exterior	Window frame	Metal	B	Intact	Positive	0.8	0.8	0.1	0.8	0.5
639	2/27/18	Paint	Administration Building	Exterior	Vent	Metal	B	Intact	Positive	1.1	1.1	0.3	1	1
640	2/27/18	Paint	Administration Building	Exterior	Door	Metal	C	Intact	Negative	0	0	0.02	-0.08	2.74
641	2/27/18	Paint	Administration Building	Exterior	Door frame	Metal	C	Intact	Negative	0	0	0.02	-0.64	2.5
642	2/27/18	Paint	Administration Building	Exterior	Conduit	Metal	C	Intact	Negative	0	0	0.02	-0.37	1.29
643	2/27/18	Paint	Administration Building	Exterior	Planter	Brick	C	Intact	Negative	0.01	0.01	0.02	0.29	0.85
644	2/27/18	Paint	Administration Building	Exterior	Conduit	Metal	D	Intact	Negative	0.07	0.07	0.17	0.27	2.79
645	2/27/18	Paint	Administration Building	Exterior	Flashing	Metal	B	Intact	Negative	0	0	0.02	0.4	1.9
646	2/27/18	Paint	Administration Building	Exterior	Fascia	Wood	B	Poor	Negative	0.19	0.19	0.29	0.25	1.25
647	2/27/18	Paint	Administration Building	Exterior	Overhang	Wood	B	Poor	Positive	1.4	1.1	0.4	1.4	0.7
648	2/27/18	Paint	Administration Building	Exterior	Electrical box	Metal	C	Intact	Negative	0	0	0.02	0.21	2.18

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Reading No	Time	Type	Building	Location	Component	Substrate	Side	Condition	Results	PbC	PbC Error	PbL	PbL Error	PbK	PbK Error
649	2/27/18	Paint	Administration Building	Exterior	Gutter	Metal	D	Intact	Negative	0	0.02	0	0.02	0.03	1.68
650	2/27/18	Paint	Administration Building	Exterior	Downspout	Metal	D	Intact	Negative	0	0.02	0	0.02	-0.17	1.98
651	2/27/18	Paint			Calibrate				Positive	1.9	0.9	1.9	0.9	2.3	4.4
652	2/27/18	Paint			Calibrate				Positive	1.4	0.4	1.4	0.4	2	2.8
653	2/27/18	Paint			Calibrate				Positive	1.5	0.7	1.5	0.7	1.5	4.5

APPENDIX C – LEAD HAZARD EVALUATION REPORT

LEAD HAZARD EVALUATION REPORT

Section 1 – Date of Lead Hazard Evaluation 2/21/18 - 2/27/18

Section 2 – Type of Lead Hazard Evaluation (Check one box only)

- Lead Inspection
 Risk assessment
 Clearance Inspection
 Other (specify) _____

Section 3 – Structure Where Lead Hazard Evaluation Was Conducted

Address [number, street, apartment (if applicable)] <u>11224 BOMBARDIER AVE.</u>		City <u>NORWALK</u>	County <u>LOS ANGELES</u>	Zip Code <u>90650</u>
Construction date (year) of structure <u>UNKNOWN</u>	Type of structure <input type="checkbox"/> Multi-unit building <input checked="" type="checkbox"/> School or daycare <input type="checkbox"/> Single family dwelling <input type="checkbox"/> Other _____		Children living in structure? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Don't Know	


Section 4 – Owner of Structure (if business/agency, list contact person)

Name <u>LITTLE LACE CITY S.D. (BRENT GRIFFIN)</u>		Telephone number <u>(562) 868-8241</u>
Address [number, street, apartment (if applicable)] <u>10515 S. PIONEER BLVD.</u>		City <u>SANTA FE SPRINGS</u>
		State <u>CA</u>
		Zip Code <u>90670</u>

Section 5 – Results of Lead Hazard Evaluation (check all that apply)

- No lead-based paint detected
 Intact lead-based paint detected
 Deteriorated lead-based paint detected
 No lead hazards detected
 Lead-contaminated dust found
 Lead-contaminated soil found
 Other _____

Section 6 – Individual Conducting Lead Hazard Evaluation

Name <u>George Valverde</u>		Telephone number <u>(626) 441-7050</u>
Address [number, street, apartment (if applicable)] <u>310 E. Foothill Boulevard Suite 200</u>		City <u>Arcadia</u>
		State <u>CA</u>
		Zip Code <u>91006</u>
CDPH certification number <u>24605</u>	Signature 	Date <u>2/27/18</u>

Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)

Section 7 – Attachments

- A. A foundation diagram or sketch of the structure indicating the specific locations of each lead hazard or presence of lead-based paint;
- B. Each testing method, device, and sampling procedure used;
- C. All data collected, including quality control data, laboratory results, including laboratory name, address, and phone number.

First copy and attachments retained by inspector
 Second copy and attachments retained by owner

Third copy only (no attachments) mailed or faxed to:
 California Department of Public Health
 Childhood Lead Poisoning Prevention Branch Reports
 850 Marina Bay Parkway, Building P, Third Floor
 Richmond, CA 94804-6403
 Fax: (510) 620-5656

APPENDIX D –XRF PERFORMANCE CHARACTERISTICS SHEET

Performance Characteristic Sheet

EFFECTIVE DATE: September 24, 2004

EDITION NO.: 1

MANUFACTURER AND MODEL:

Make: *Niton LLC*

Tested Model: *XLP 300*

Source: ¹⁰⁹Cd

Note: This PCS is also applicable to the equivalent model variations indicated below, for the Lead-in-Paint K+L variable reading time mode, in the XLI and XLP series:

XLI 300A, XLI 301A, XLI 302A, and XLI 303A.
 XLP 300A, XLP 301A, XLP 302A, and XLP 303A.
 XLI 700A, XLI 701A, XLI 702A, and XLI 703A.
 XLP 700A, XLP 701A, XLP 702A, and XLP 703A.

Note: The XLI and XLP versions refer to the shape of the handle part of the instrument. The differences in the model numbers reflect other modes available, in addition to Lead-in-Paint modes. The manufacturer states that specifications for these instruments are identical for the source, detector, and detector electronics relative to the Lead-in-Paint mode.

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Lead-in-Paint K+L variable reading time mode.

XRF CALIBRATION CHECK LIMITS:

0.8 to 1.2 mg/cm² (inclusive)

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm² in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm² film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION:

For XRF results using Lead-in-Paint K+L variable reading time mode, substrate correction is not needed for:

Brick, Concrete, Drywall, Metal, Plaster, and Wood

INCONCLUSIVE RANGE OR THRESHOLD:

K+L MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm ²)
Results not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted in August 2004 on 133 testing combinations. The instruments that were used to perform the testing had new sources; one instrument's was installed in November 2003 with 40 mCi initial strength, and the other's was installed June 2004 with 40 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

SUBSTRATE CORRECTION VALUE COMPUTATION:

Substrate correction is not needed for brick, concrete, drywall, metal, plaster or wood when using Lead-in-Paint K+L variable reading time mode, the normal operating mode for these instruments. If substrate correction is desired, refer to Chapter 7 of the HUD Guidelines for guidance on correcting XRF results for substrate bias.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use the K+L variable time mode readings.

Conduct XRF retesting at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family housing a result is defined as the average of three readings. In multifamily housing, a result is a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

TESTING TIMES:

For the Lead-in-Paint K+L variable reading time mode, the instrument continues to read until it is moved away from the testing surface, terminated by the user, or the instrument software indicates the reading is complete. The following table provides testing time information for this testing mode. The times have been adjusted for source decay, normalized to the initial source strengths as noted above. Source strength and type of substrate will affect actual testing times. At the time of testing, the instruments had source strengths of 26.6 and 36.6 mCi.

Testing Times Using K+L Reading Mode (Seconds)						
Substrate	All Data			Median for laboratory-measured lead levels (mg/cm ²)		
	25 th Percentile	Median	75 th Percentile	Pb < 0.25	0.25 ≤ Pb < 1.0	1.0 ≤ Pb
Wood Drywall	4	11	19	11	15	11
Metal	4	12	18	9	12	14
Brick Concrete Plaster	8	16	22	15	18	16

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than or equal to the threshold, and negative if they are less than the threshold.

DOCUMENTATION:

A document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges of thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD.

This XRF Performance Characteristic Sheet was developed by the Midwest research Institute (MRI) and QuanTech, Inc., under a contract between MRI and the XRF manufacturer. HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*.