

II. Submittals:**Pre-job Submittals** (as designated):

<input checked="" type="checkbox"/>	SCAQMD Notification (10 working days in advance);
<input checked="" type="checkbox"/>	Cal/OSHA Notification per 8 CCR 1529 AND 8 CCR 1532.1 (24-hours in advance);
	CDPH Notification Form CDPH 8551 (12/97) for Abatement of Lead Hazards
<input checked="" type="checkbox"/>	Copy of current Contractors' State Licensing Board (CSLB) License;
<input checked="" type="checkbox"/>	Copy of Cal/OSHA Asbestos Registration Certificate;
<input checked="" type="checkbox"/>	Proof of all required permits or variances;
<input checked="" type="checkbox"/>	Abatement work schedule;
<input checked="" type="checkbox"/>	Abatement work plan(s);
<input checked="" type="checkbox"/>	Copies of workers' asbestos training certificates, including the Competent Person;
<input checked="" type="checkbox"/>	Copies of CDPH Certified Lead Workers' and Supervisor's training certificates, as applicable;
<input checked="" type="checkbox"/>	Copies of workers' lead awareness training certificates;
<input checked="" type="checkbox"/>	Copies of workers' annual medical exam and respirator approval;
<input checked="" type="checkbox"/>	Copies of workers' 12-month respirator fit testing records;
<input checked="" type="checkbox"/>	Copies of workers' blood lead test within past 90 days;
<input checked="" type="checkbox"/>	Material Safety Data Sheets (MSDS) for chemicals used;
<input checked="" type="checkbox"/>	Emergency phone listing;
<input checked="" type="checkbox"/>	SCAQMD annual registration of all negative pressure units and vacuums;
<input checked="" type="checkbox"/>	Proposed location of locked dumpster; and
<input checked="" type="checkbox"/>	Rotameter calibrations within past 6 months.

Periodic Submittals (as designated):

<input checked="" type="checkbox"/>	Personal air monitoring (daily);
<input checked="" type="checkbox"/>	Updated worker documentation (as needed);
<input checked="" type="checkbox"/>	Boundary access logs (daily);
<input checked="" type="checkbox"/>	Negative pressure records for applicable containments (daily); and
<input checked="" type="checkbox"/>	Copies of updated notification to regulatory agencies (as needed).

Project Close-out Submittals (as designated within 2 weeks of completion):

<input checked="" type="checkbox"/>	Certificate of Completion;
<input checked="" type="checkbox"/>	Receipt and weight tickets from landfill operator or recycler (as applicable);
<input checked="" type="checkbox"/>	Copies of completed uniform waste manifests, including hazardous and non-hazardous waste;
<input checked="" type="checkbox"/>	Waste profiling data (TCLP, WET and SW846, as applicable);
<input checked="" type="checkbox"/>	Filter change logs for all filtration units, water filtration units (as applicable) and respirators;
<input checked="" type="checkbox"/>	Foreman's daily job reports;
<input checked="" type="checkbox"/>	Employee and visitor entry/exit logs for all containments;
<input checked="" type="checkbox"/>	Manometer printouts for all applicable containments; and
<input checked="" type="checkbox"/>	Air sample results for all personnel, work areas and air filtration units.

III. Schedule

Start Date:	<i>To be determined.</i>
End Date:	<i>To be determined.</i>
Maximum Abatement Shifts:	(10) concurrent asbestos and lead hazard/abatement shifts.
Time frame:	7:00 a.m. to 3:30 p.m., Monday thru Friday, unless otherwise indicated in the Contract Documents.

IV. Contacts:

Contact	Individual	Phone #	e-mail	Mobile #
MRCA Project Manager:	Leslie Chan	323/221-9944 ext. 183	leslie.chan@ mrca.gov	323/829-3503
SCA Environmental Project Manager	Mark Osborn	310/258-0460	mosborn@ sca-enviro.com	310/701-4044
Abatement Contractor's Project Manager	<i>To be determined.</i>			
Demolition Contractor's Project Manager	<i>To be determined.</i>			

Note: Contact the MRCA's Project Manager only in an emergency.

V. Security

Arrange site security with the MRCA at the beginning of the job.

Provide temporary security at building penetrations created by the demolition and abatement.

VI. Special ConditionsDesign:

- Asbestos Abatement and Lead Hazard Abatement Project Designs shall be completed by the MRCA's designated Environmental Consultant only. Designers shall be EPA-accredited Asbestos Project Designers and California Department of Public Health lead-certified only.

Air Sampling:

- PCM Analysis: Analysis of PCM samples shall follow the procedures outlined in NIOSH method 7400 and within these Contract Documents.
- TEM Analysis: The U. S. Environmental Protection Agency passed regulations for schools under the Asbestos Hazard Emergency Response Act (AHERA), which are found in 40 CFR Part 763 "Asbestos Containing Materials in Schools." This regulation states that all abatement work shall be evaluated upon completion by collecting air samples using aggressive sampling techniques and that all such samples shall be analyzed using Transmission Electron Microscopy (TEM). The TEM protocol for large projects/zones calls for the collection of a minimum of 5 inside samples, 5 outside samples, and 3 blank samples and each should be analyzed by TEM. The regulation strictly defines the criteria that must be met to determine that a building is acceptably clean after removal. TEM analysis turnaround times shall be 24 hours, unless otherwise indicated.

Revised: 12/08/10

3. The sampling and analytical criteria in the AHERA regulation for schools shall be viewed as the preferred method for determining that any asbestos abatement project in any building has achieved a satisfactory level of cleanliness. The MRCA shall clear any work areas that may need to be re-occupied prior to demolition, using aggressive sampling and TEM analysis, unless otherwise noted. The MRCA reserves the right to determine the quantity of clearance air samples to be collected for each subzone.
4. The MRCA shall pay the Environmental Consultant's costs of the final round of visual inspections, aggressive air sampling, and PCM and/or TEM analyses that will meet the asbestos abatement specification. All rounds of visual inspections, aggressive air sampling, and PCM and/or TEM analyses that fail to meet the contract criteria shall be borne by the Contractor. For the purpose of this paragraph, visual inspection includes the area isolation inspection, pre-encapsulation inspection, and final area clean-up inspection.
5. During all asbestos-related work, perimeter sample results will be collected by the MRCA and/or their Environmental Consultant (Industrial Hygienist). These samples will be analyzed by Phase Contrast Microscopy (PCM). Sample results that are in excess of the background level or 0.01 fibers per cubic centimeter (f/cc) Project Action Level may be forwarded for analysis by Transmission Electron Microscopy (TEM) with a 12-hour turnaround specified. Handling, shipping, and analysis charges (including the Environmental Consultant's time and expenses) will be paid for by the Contractor. Any sample results in excess of 70 asbestos structures per square millimeter of filter area (corrected for a 1,200 - 1,800 liter sample volume as appropriate) will require cleaning, inspection, and re-sampling of the affected area at the Contractor's expense.
6. During all lead hazard-related work, such as demolition, torching and welding activities, etc., as applicable, perimeter air sample and/or lead wipe sample results will be collected by the MRCA's Environmental Consultant (Industrial Hygienist). These samples will be analyzed by flame atomic absorption. Wipe sample results which are in excess of the construction dust control standard of 800 micrograms per square foot for adjoining construction zones on two consecutive samplings (or two consecutive days) on any occasion will require isolation and clean-up of the affected areas. Air sampling results in excess of the Cal/OSHA "Project Action Level" of 30 micrograms per cubic meter will require isolation of the work area and amendment of work procedures and/or clean-up of the affected areas. Re-sampling of the affected areas and handling, shipping, and analysis charges (including the Environmental Consultant's time and expenses) for additional sampling required to show background levels below these construction lead standards shall be borne by the Contractor.

Submittals:

1. All pre-construction submittals shall be forwarded to the MRCA's Project Manager and the MRCA's designated Environmental Consultant prior to the start of abatement as designated in the Contract Documents and herein.
2. Failure by the Contractor to fulfill the submittal requirements as specified in the Contract Documents and herein shall be the basis for withholding final payment until such submittal requirements are satisfied.

Additional Liquidated Damages:

1. The Contractor shall pay for all Environmental Consultant costs for delays in completion of work beyond the authorized schedule established by the MRCA. Such charges shall include Consultant's observations and inspections, daily air monitoring, equipment, transportation and analysis charges. Such costs are estimated at \$1,000 per day, exclusive of any costs associated with final clearance air testing. See the Liquidated Damages Section in the General Conditions for further requirements.

Waste Manifests:

1. The Contractor shall coordinate the inspection and signing of all waste manifests with the MRCA and its Environmental Consultant, while on-site. Failure to complete the manifests or callbacks after completion of the project will be backcharged to the Contractor.

VII. Summary of Sampling Results:

Non-asbestos materials identified, which may be impacted by the demolition include:

- See Document 00235 or the Contract Documents, as applicable.

Note: All ACM or ACCM identified for abatement in this work plan is in the "Factory" building, unless specifically noted otherwise.

Lead-based paints tested on-site, requiring protection from disturbances causing airborne lead dusts during the abatement phase include:

- See Document 00235 or the Contract Documents, as applicable.

Treat all similar paints and substrates in kind. Note that most building paints contain some lead content, and require demolition dust control procedures for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1.

Scrape and stabilize all loose and peeling paints on-site and characterize for possible disposal as hazardous waste. Intact painted elements may be disposed as non-hazardous waste complying with dust controls and personal protective procedures per Cal/OSHA regulation 8 CCR 1532.1 and CDPH regulation 17 CCR Sections 35001 through 36100.

VIII. Standard Procedures

Asbestos Abatement:

Abatement Material Vinyl Floor Tiles with Related Mastics Group A-1				
Method:	<input checked="" type="checkbox"/> Full Isolation or Mini-Containment	<input type="checkbox"/> Glovebag	<input type="checkbox"/> Glovebag-Cutout	
Material	Activity Class	Sample I.D.	% Asbestos	Est. Quantity*
Vinyl floor tiles with related mastics	2	FLVCT-23-01, -02 & -03	>1% CH (tiles); 2% CH (mastic).	2,400 square feet
Leveling compound with related mastics	2	MISC-024-01, -02, -03	3% CH (mastic)	10 square feet

**Quantity estimate is for project planning purposes only. All quantities are to be verified in the field by the Contractor, prior to abatement.*

Asbestos Abatement Procedures for Material Group A-1 (Applicable Indicated):

Decon System:	<input checked="" type="checkbox"/> Shower if >250 SF	<input type="checkbox"/> Central	<input type="checkbox"/> Hudson sprayer or bucket decon if <250 SF	
Floor:	<input type="checkbox"/> # Layers Poly	<input type="checkbox"/> Drop Cloths	<input type="checkbox"/> Scaffold	
Walls:	<input type="checkbox"/> # of Polyethylene Layers	<input checked="" type="checkbox"/> 6-ft. high Splash Guards		
Criticals:	<input type="checkbox"/> # of Polyethylene Layers	<input type="checkbox"/> Plywood Barriers		

Other Comments: For Vinyl Floor Tiles & Mastic Abatement:

Abate the vinyl floor tiles and mastics and leveling compounds, as applicable, using full isolation or mini-containment abatement methods per Cal/OSHA 8 CCR 1529 Work Class II procedures, minimum, with negative pressurization of all zones. Demolish interior partitions and counters to access and abate concealed materials. Remove the mastics using an approved "low odor" mastic remover with greater than 140°F flash point. *Products containing methylene chloride are specifically prohibited.* Dispose of tile waste as Category 1 non-friable asbestos waste. Characterize and dispose of rags and solvent residues as a separate, [potentially] hazardous waste stream. Coordinate with the abatement of sprayed-on acoustical materials.

For Disposal & Cleanup: Double gooseneck bag all asbestos floor tiles as dispose as Category 1 non-friable asbestos waste. Dispose of mastics, rags and associated waste as specified by the mastic remover manufacturer, potentially as hazardous waste. HEPA vacuum the surrounding area, prior to visual inspection and clearance by the Environmental Consultant.

If a mobile containment is used, clean-up and reseal the phone booth-type containment and airlock entry between uses.

Abatement Material Roofing Materials (and HVAC Materials on the Roof)				
Group A-2:				
Method:	<input checked="" type="checkbox"/> Cordon Area	<input type="checkbox"/> Glovebag	<input type="checkbox"/> Glovebag-Cutout	
Material	Activity Class	Sample I.D.	% Asbestos	Est. Quantity*
Black roof patching & penetration mastic	2	RFMAS-05-01, -02, -03	4% CH	50 square feet (on "Factory" roof)
		RFMAS-AAA	<i>Assumed ACM >1% CH</i>	3 square feet (on Warehouse roof)
Sliver/gray roof penetration mastic	2	RFMAS-06-01, -02, -03	3% CH	100 square feet
HVAC duct tape and mastic	2	HDUTP-07-01, -02, -03	5% CH	75 square feet
HVAC black mastic on joints & seams	2	HMAS-09-01, -02, -03	2% CH	20 square feet
Black tarry wrap and coating on 1" and 2" pipes	2	MISC-10-01, -02, -03	3% CH	30 square feet
Silver textured coating on round HVAC ducts	2	MISC-11-01, -02, -03	3% CH	400 square feet

**Quantity estimate is for project planning purposes only. All quantities are to be verified in the field by the Contractor, prior to abatement.*

Asbestos Abatement Procedures for Material Group A-2 (Applicable Indicated):

Decon System:	<input checked="" type="checkbox"/> Shower if >2,500 SF	<input type="checkbox"/> Central	<input checked="" type="checkbox"/> Hudson sprayer or bucket decon if <2,500 SF
Floor:	<input type="checkbox"/> # Layers Poly	<input checked="" type="checkbox"/> Drop Cloths	<input type="checkbox"/> Scaffold
Walls:	<input type="checkbox"/> # of Polyethylene Layers	<input type="checkbox"/> Splash Guards	
Criticals:	<input type="checkbox"/> # of Polyethylene Layers	<input type="checkbox"/> Plywood Barriers	

Other Comments: For Roofing Abatement:

Set-up drop cloths on the ground under roofing removal area and abate the roof patching and penetration compounds, and HVAC mastics, as applicable, using wet methods. Seal all rooftop vents, windows, etc. with one layer of 6-mil polyethylene sheeting, as a critical barrier. Bag or wrap waste in 2 layers of 6-mil polyethylene sheeting and gently lowered to ground. (*Bags shall not be thrown off the roof under any circumstances.*) Debris chutes must be pre-authorized by MRCA before use. If used, they shall be sealed and negatively pressurized.

Coordinate abatement work with stabilization of loose and peeling exterior lead-based/lead containing paints.

For Disposal & Cleanup: HEPA vacuum the surrounding area following the abatement for final visual clearance. Dispose of all roofing debris as Category 1 non-friable asbestos waste.

Allow for a 20 ft. minimum buffer zone between the roof removal activities and other demolition work.

Abatement Material Group A-3: Wall and Ceiling Mastics				
Method:	<input checked="" type="checkbox"/> Full Isolation or Mini-Containments	<input type="checkbox"/> Glovebag	<input type="checkbox"/> Glovebag-Cutout	
Material	Activity Class	Sample I.D.	% Asbestos	Est. Quantity*
Black mirror mastic on restroom wall	2	MASTIC-19-01	10% CH	1 square foot
Residual brown wall mastic	2	MASTIC-27-01, -02, -03	1-2% CH	25 square feet
Mastic assumed present behind wood wall panels and cork walls	2	MASTIC-AAA	<i>Assumed ACM >1% CH</i>	500 square feet

**Quantity estimate is for project planning purposes only. All quantities are to be verified in the field by the Contractor, prior to abatement.*

Asbestos Abatement Procedures for Material Group A-3 (Applicable Indicated):

Decon System:	<input type="checkbox"/> Shower	<input type="checkbox"/> Central	<input checked="" type="checkbox"/> Hudson sprayer or bucket decon
Floor:	<input checked="" type="checkbox"/> # Layers Poly	<input type="checkbox"/> Drop Cloths	<input type="checkbox"/> Scaffold
Walls:	<input checked="" type="checkbox"/> # of Polyethylene Layers	<input checked="" type="checkbox"/> Splash Guards	
Criticals:	<input checked="" type="checkbox"/> # of Polyethylene Layers	<input type="checkbox"/> Plywood Barriers	
Other Comments: For Mastics on non-Asbestos Substrates:			
Remove mastic intact with the substrate and double bag for disposal as Category 1 non-friable asbestos waste. Where substrate removal is not required, remove the cork or wood wall panels and scrape any 3-dimensional mastic (also including mirror and other wall mastics) using a razor blade or sharp knife. Dispose of mastic as Category 1 non-friable asbestos waste.			

Abatement Material Interior Sprayed-On Acoustical Plasters and HVAC Duct Seam Tape Group A-4:				
Method:	<input checked="" type="checkbox"/> Full Isolation or Mini-Containments	<input type="checkbox"/> Glovebag	<input type="checkbox"/> Glovebag-Cutout	
Material	Activity Class	Sample I.D.	% Asbestos	Est. Quantity*
Sprayed-on acoustical plaster ceilings and plaster substrate	1	CLTX-17-01, -02, -03	5% CH	1,000 square feet
White, painted interior HVAC duct seam tape	2	HDUCTP-16-01	70% CH	3 square feet

*Quantity estimate is for project planning purposes only. All quantities are to be verified in the field by the Contractor, prior to abatement.

Asbestos Abatement Procedures for Material Group A-4 (Applicable Indicated):

Decon System:	<input checked="" type="checkbox"/> Shower if >25 SF	<input type="checkbox"/> Central	<input type="checkbox"/> Hudson sprayer or bucket decon if <25 SF
Floor:	<input type="checkbox"/> # Layers Poly	<input type="checkbox"/> Drop Cloths	<input type="checkbox"/> Scaffold
Walls:	<u>1</u> # of Polyethylene Layers	<input checked="" type="checkbox"/> Splash Guards	
Criticals:	<u>2</u> # of Polyethylene Layers	<input type="checkbox"/> Plywood Barriers	

Other Comments:

For ACM Sprayed-On Acoustical Materials and Friable Duct Seam Tape:

Remove materials (including overspray) with hand tools, using full isolation or mini-containment procedures, satisfying the requirements of Cal/OSHA 8 CCR 1529 Work Class 1 procedures. Use wet methods for dust controls. Dispose of materials as friable asbestos waste. Remove substrates as required to access materials and overspray. Treat all enclosing substrates or materials, such as laid-in ceiling tiles, as potentially asbestos-contaminated and dispose of in double goosenecked, labeled bags, as friable asbestos waste.

Removal of larger wall or ceiling segments, particularly demolition of elements that may impact friable plaster finishes, shall be completed under full isolation or mini/mobile-containment procedures, by a licensed Abatement Contractor. The Asbestos Contractor, using glovebag and mobile mini-containment methods or full isolation methods (depending on the quantities impacted) shall complete corings greater than 2" in diameter, which cannot be properly controlled using a wetted sponge.

Remove the interior HVAC duct seam tape in conjunction with the acoustical plaster abatement, within a contiguous negative pressure containment set up for that purpose. Dispose of material as in double goosenecked, labeled bags, as friable asbestos waste.

If a mobile containment is used, clean up and re-seal the phone booth-type containment and airlock entry between uses.

Lead Hazards Construction and Demolition Work:

Zone L-1: Interior & Exterior Paints				
<i>Sample I.D.</i>	<i>Color</i>	<i>Area</i>	<i>Lead Content</i>	<i>Activity Class</i>
HUD-defined Lead-Based Paints or Glazing	Varies	Varies	≥5,000 ppm	1
Majority of painted substrates	Varies	Varies	>600 ppm	1

Lead Hazard Procedures for Zone L-1 (Applicable Indicated):

Decon System:	<input type="checkbox"/> Shower	<input type="checkbox"/> Central	<input checked="" type="checkbox"/> Hudson sprayer
Required Methods:	<input type="checkbox"/> Full Containment	<input checked="" type="checkbox"/> Manual Methods w/Drop Cloths	<input checked="" type="checkbox"/> Loose & Peeling Paints Only

Other Comments:**For Stabilization of Loose & Peeling Paints:**

Manually scrape and stabilize loose and peeling paints prior to demolition of painted substrates using drop cloths, wet methods, and HEPA vacuums for dust control, in compliance with Cal/OSHA regulation 8 CCR 1532.1. Avoid dry sweeping. Coordinate exterior paint stabilization with the asbestos abatement activities.

For Mechanical Sanding: Work areas requiring mechanical sanding or stripping of painted surfaces with any lead content shall be fully contained with polyethylene dust barriers, establishing negative pressure of the zone, and using HEPA-filtered tools and other dust control procedures as outlined under 8 CCR 1532.1.

For Demolition of Painted Substrates & Ceramic Tile Glazing: Demolition of painted concrete or plaster substrates or glazed ceramic tiles shall be completed under full isolation containments with negative air pressurization. Loose paints, HEPA vacuum canister wastes, and fine dust shall be characterized and disposed as [potentially] hazardous waste. Respiratory protection shall be upgraded per 8 CCR 1532.1 requirements for mechanical sanding or mechanical equipment without HEPA vacuum or water misting attachments.

For Disposal & Cleanup: Demolish and dispose of intact painted substrates as [potentially] non-hazardous waste, pending characterization of the waste. Characterize and dispose of loose and peeling paint debris, chemical strippers, rags, etc. as [potentially] hazardous waste. Clean-up drop cloths and HEPA vacuum loose and peeling chips and debris daily for all work areas, before leaving the site. Metallic lead flashing may be recycled.

Complete abatement work exceeding the permissible exposure limit using CDPH Certified Lead Workers and Supervisors, including but not necessarily limited to demolition of lead-glazed ceramic tiles, extensive manual or mechanical scraping or sanding of loose and peeling paints, demolition of concrete-encased primed steel, and spot abatement of primed structural steel prior to torching or cutting, as applicable.


IX. Monitoring and Clearance

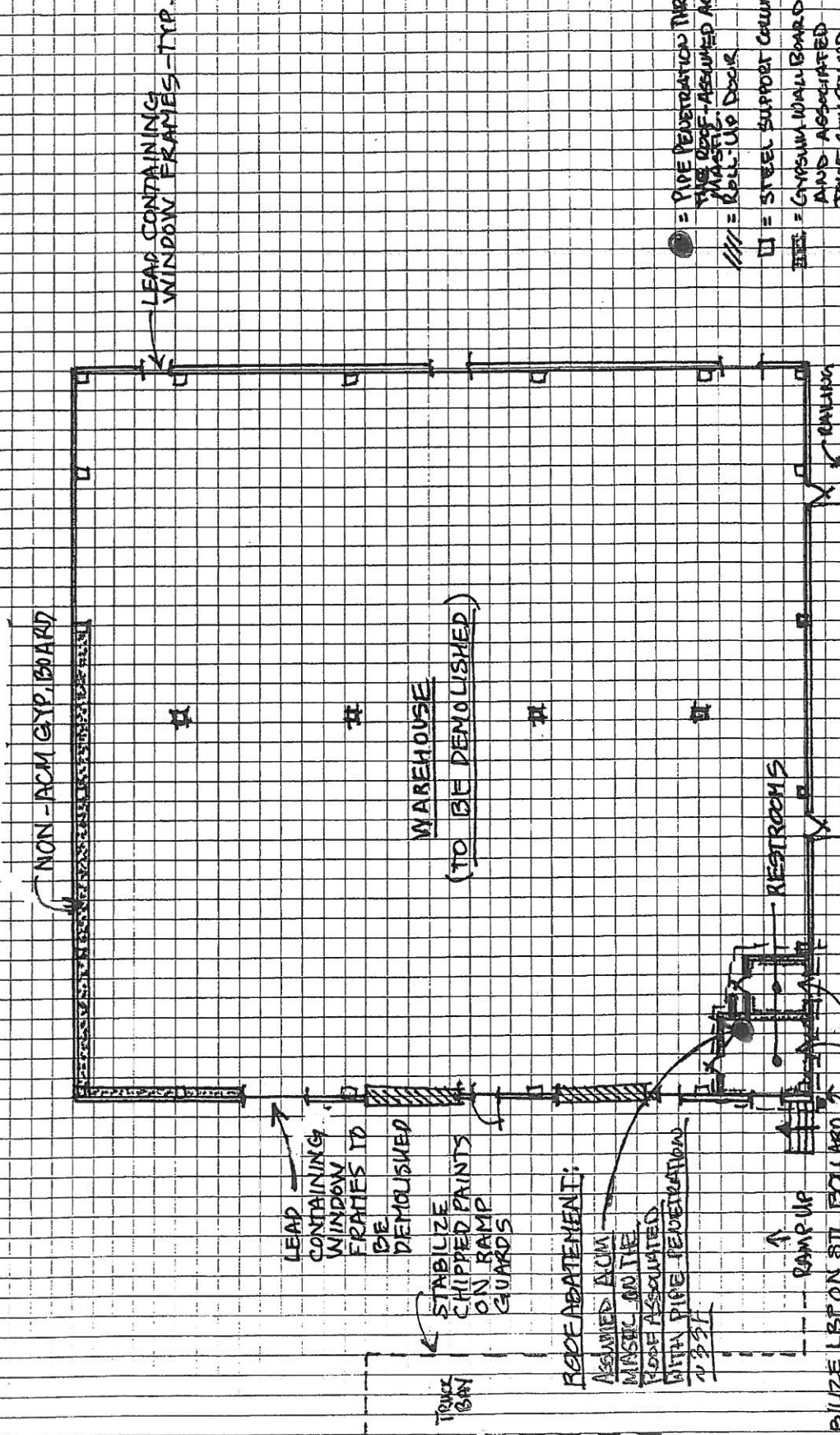
Asbestos Clearance Requirements (includes budgeted # of samples):

VAT & Mastic Abatement	Visual Only	___ PCM/zone	<u>1-2</u> TEM/500 SF (typ.)
Roofing and Exterior HVAC Mastic Abatement	<u>X</u> Visual Only	___ PCM/zone	TEM/subzone
Sprayed-On Acoustical Plaster Abatement	Visual Only	___ PCM/zone (if <100 SF or <260 LF)	<u>5</u> TEM/subzone (if ≥160 SF or ≥260 LF)

X. Diagrams

See the attached plans for areas of impact.

Consultant's Signature:  Mark Osborn, AIA, CAC, CHMM Project Consultant	Date: December 8, 2010
Contractor's Signature	Date:



**WAREHOUSE
ABATEMENT DIAGRAM**

SCA

ENVIRONMENTAL, INC.
5777 W. Century Blvd., Ste 1055
Los Angeles, CA 90046
Tel: (310) 256-0400
Fax: (415) 652-0735

Title: "Panama Moving & Storage" Material Locations
Project: MRCA Asbestos and LBP Survey of "Glenneden" Property
Project No: L-9985
Drawn By: L. Kennington / J. Schmidt
Checked By: *Timo*
Date: 9/21/2010
Scale: NTS

STABILIZE LBP ON STEEL BEAM
DEMOLISH GLAZED CERAMIC TILES IN
ACCORDANCE WITH L-1 PROCEDURES.

1. ABATE ALL ACM ROOF MASTIC (GROUP A-2)
2. STABILIZE ALL LOOSE & PEELING PAINTS (LEAD HAZARD PROCEDURE L-1)
3. DEMOLISH ALL LEAD GLAZED CERAMIC TILES (L-1)

ROOF ABATEMENT:
ASSUMED ACM
MASTIC ON THE
ROOF ASSOCIATED
WITH PIPE PENETRATION
4' x 3' x 1'

LEAD CONTAINING WINDOW FRAMES TO BE DEMOLISHED

WAREHOUSE
(TO BE DEMOLISHED)

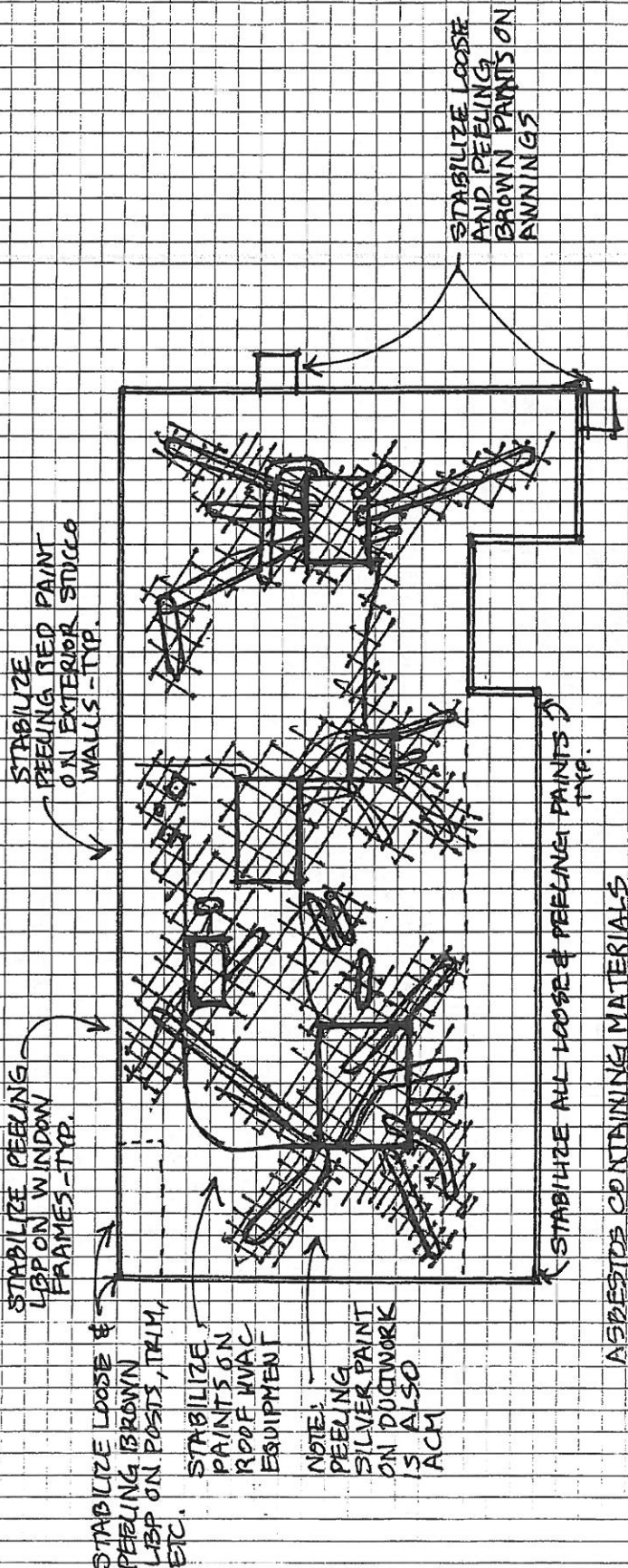
NON-ACM GYP BOARD

LEAD CONTAINING WINDOW FRAMES - TYP.

- = PIPE PENETRATION THROUGH DEEF-ASSUMED ACM MASTIC ASSOCIATED ROLL-UP DOOR
- ▬▬▬ = STEEL SUPPORT COLUMN
- = GYPSUM WALL BOARD AND ASSOCIATED JOINT COMPOUND (WASH-OUT)



ROOF



ASBESTOS CONTAINING MATERIALS

- ACM ROOFING MATERIALS ASSOCIATED WITH HVAC DUCTS, JOINTS, SEAMS & PENETRATIONS:
 - REMKS-05: BLACK MASTIC ASSOCIATED WITH ROOF PENETRATIONS
 - REMS-06: SILVER/GRAY MASTIC ASSOCIATED WITH ROOF PENETRATIONS
 - HDMTP-07: HVAC DUCT TAPE AND MASTIC (CANNES TYPE WITH GELAY CONTAINERS)
 - HMRS-09: BLACK MASTIC ON HVAC SEAMS AND SEAMS
 - MISC-10: BLACK TARRY WELD/COATING ON 1" AND 2" PIPES ON THE ROOF
 - MISC-11: SILVER THERMAL COATING ON "ROUND" HVAC DUCTWORK (ABATEMENT GROUP A-2)

LEAD

- STABILIZE ALL LOOSE, PEELING AND/OR FLAKING PAINTS THROUGHOUT (L-1)

"FACTORY" BUILDING
ROOF & EXTERIOR
ABATEMENT DIAGRAM

Title: "Factory" 2944 Gleneden Street Material Locations
 Project: MFCA Asbestos and LBP Survey of "Gleneden" Property
 Project No: L-9985
 Drawn By: L. Kennington / J. Schmidt
 Checked By: *MM*
 Date: 9/21/2010 Scale: NTS

SCA
 ENVIRONMENTAL, INC.
 5777 W. Century Blvd., Ste 1065
 Los Angeles, CA 90045
 Tel: (310) 255-0460
 Fax: (415) 862-0736

SECTION 01110

HAZARDOUS MATERIALS PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general requirements and procedures for hazardous materials related work activities, as applicable, to the Work and the existing conditions at the project site.
 - 1. Work includes Hazardous Materials Precautions and Handling Procedures for non-abatement trades.
- B. Related Documents:
 - 1. Document 00235 - Existing Conditions: Hazardous Materials.
- C. Related Sections:
 - 1. Section 01300 - Submittals.
 - 2. Section 02060 - Building Demolition.
 - 3. Section 02090 - Hazardous Materials Abatement and Control.
 - 4. Section 01010 - Abatement Work Plan/Related Sections Drawing/Plans.

1.2 DEFINITIONS

- A. Abatement: Primary work involving the removal, containment, control or treatment of hazardous materials.
- B. Asbestos: A generic name given to a number of naturally occurring hydrated mineral silicates that possess a unique crystalline structure, are incombustible in air, and are separate into fibers. Asbestos includes any material that contains greater than 0.1 percent by weight in the asbestiform varieties of chrysotile (serpentine); crocidolite (riebecklite); amosite (cummingtonite-grunerite); anthophyllite; tremolite; and actinolite. For the purposes of determining respiratory protection and worker protection both the asbestiform and non-asbestiform varieties of the above materials and any of these materials that have been chemically treated or altered shall be considered asbestos.
- C. Asbestos-Containing Material (ACM): Any material which contains more than one percent (>1%) asbestos by weight for the purposes of abatement, waste disposal and fiber controls specified under this Contract.
- D. Asbestos Containing Construction Material (ACCM): Any material which contains more than one tenth of one percent (>0.1%) asbestos by weight requiring personal protection, dust controls, Contractor registration, and worker training in compliance with Cal/OSHA regulation 8 CCR 1529. For waste disposal purposes, ACCM greater than 0.1% by weight and less than 1% by weight is classified as non-hazardous waste, although it is a regulated material under Cal/OSHA.

- E. Hazardous Materials Control: Incidental work procedures for control of releases of project-related hazardous materials, including containment, enclosure, wetting, controlled demolition procedures, and removal and disposal.
- F. Hazardous Waste:
 - 1. Waste material, including asbestos, loose and peeling lead-based paints, PCB ballasts, and any other material which requires management, handling transport, treatment, storage or disposal according to the requirements of the Federal Resource, Conservation and Recovery Act (RCRA) and associated regulation 42 U.S.C. 6901 et seq. and 40 CFR Part 260 et seq.) or the California Hazardous Waste Control Law and associated regulations (Health and Safety Code 25000 et seq. and 22 CCR 66260 et seq.).
 - 2. References to hazardous material or contaminated material incorporate definitions of hazardous pollutants, hazardous contaminants, hazardous material, hazardous substance, hazardous waste, toxic pollutants and toxic substance applicable in accordance with Federal, State, regional and local statutes, laws, regulations and policies.
- G. Lead: Metallic lead, all inorganic lead compounds and organic lead soaps, and excluding all other organic lead compounds.
- H. Lead-Based Paints: Paints or coated surfaces that contain an amount of lead equal to, or in excess of, one milligram per square centimeter or more than half of one percent (0.5%) lead by weight.
- I. Lead-Containing: Any material, coating, substrate or product that contains metallic lead, all inorganic lead compounds and organic lead soaps, and excluding all other organic lead compounds.
- J. Lead-Contaminated Dust: Dusts that contain an amount of lead equal to, or in excess of, forty micrograms per square foot for floor surfaces and two hundred and fifty micrograms per square foot for horizontal window surfaces.
- K. Lead-Contaminated Soil: Bare soil that contains lead equal to, or in excess of, four hundred parts per million (400 ppm) in children's play areas and one thousand parts per million (1,000 ppm) in all other areas.
- L. Lead-Related Construction Work: Means any construction, alteration, painting, demolition, salvage, renovation, repair or maintenance of any residential or public building, including preparation and clean-up, that, by using or disturbing lead-containing material or soil, may result in significant exposure of adults or children to lead.
- M. Presumed Lead-Based Paint: Means paint or surface coating affixed to a component in or on a structure, excluding paint or surface coating affixed to a component in or on a residential dwelling constructed on or after January 1, 1978.

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01300 - Submittals.
 - 1. Site-Specific Hazardous Materials Management Plan (HMMP): Submit Contractor's HMMP for the Mountains Recreation and Conservation Authority's (MRCA's) approval within ten (10) days after the Notice to Proceed, including the following items.

- a) Overall scope and schedule of all hazardous materials management including but not limited to:
 - (1) Description of all hazardous materials work to be performed or managed, and intended control procedures.
 - (2) Schedule of all hazardous materials work.
 - (3) Description of personal protective equipment and methods as well as intended compliance monitoring.
 - b) Name, phone number, pager number of Contractor's designated Hazardous Materials Supervisor as required in this section's "Quality Control."
 - c) Name, address and phone number of the Contractor's landfill;
2. Excavated Material Disposal Method: Submit for the MRCA's acceptance prior to removing excavated material from the Project Site the Contractor's lawful, safe, and cost effective methods for transportation and disposal of excavated materials meeting the acceptance criteria of the Contractor's off-site disposal facility.
 3. Imported Material: Prior to hauling imported material to the Project Site, submit environmental analytical data as required by the MRCA. Provide as a minimum, one 4-point composite test for each 500 cubic yards analyzed for RCI, TRPH, and CAM 17 metals.
 4. Close-out Submittals: Provide copy of final trucking log for all imported fills deposited at the Project Site. Logs shall include information on the origin of the import (street address and city), location of the deposit (coordinates and elevation), quantity (cubic yards), a description of the material environmental analytical results, and trucking invoices.
- B. Submit Worker Documentation in accordance with the requirements outlined in the Contractor's HMMP, including but not limited to:
1. Certification of the worker's awareness or hazards training by a Certified trainer or as stated on the Contractor's letterhead by the Contractor's Health & Safety Officer or Superintendent.
 2. Medical examination and approval for use of respiratory protection, as applicable, including current respirator fit test records.

1.4 PROJECT CONDITIONS

- A. Contractor shall pay all costs associated with the compliance with applicable hazardous materials regulations or requirements incurred by the Contractor or its subcontractors for this Project.
- B. Take precautions necessary to protect the health and safety of construction workers, site visitors, MRCA personnel, outside consultants, public and others from exposure to hazardous materials.
- C. Take precautions necessary to insure all surrounding properties or adjacent occupied areas are protected from any contamination from all hazardous materials from this Project Site.

- D. Review the information in the environmental and hazardous material investigation reports and make such information available to appropriate subcontractors and building occupants.
- E. Obtain and pay for all sampling and profiling analyses required for waste disposal. California CDPH-accredited laboratories shall perform analyses.
- F. Minimize generation and migration of hazardous and contaminated materials, waste, dust, fumes and debris.
- G. Prevent contamination or further contamination of any material or area by hazardous or contaminated material, waste, dust, fumes or debris.
- H. Avoid mixing or concentrating removed, or demolished materials so as to increase the cost of disposing of such materials required to be disposed as hazardous or contaminated wastes.
- I. Contractor shall retain, and the MRCA will not indemnify against, any liability of Contractor resulting from the activities or duties which are the responsibility of Contractor under the terms of the Contract, including but not limited to present or future liability arising from the arrangement of transportation or disposal of any hazardous or contaminated material, whether on or off-site.
- K. Pursuant to 29 CFR 1926.1101, the Contractor shall be deemed to exercise general supervisory authority over the work covered by the standard, even though the General Contractor is not qualified to serve as the asbestos "Competent Person," as defined by the standard. As supervisor of the entire Project, the General Contractor shall ascertain whether any subcontractor is in compliance with the standard and shall require such contractor to come into compliance with the standard when necessary.
- L. Contractors shall schedule and coordinate abatement activities to time limitations indicated in the Contract Documents, allowing 10 work shifts for asbestos, lead-based paint, PCB ballast, and other abatement.

1.5 QUALIFICATIONS

- A. Hazardous Materials Supervisor: Assign a qualified person directly responsible under the Contractor's Superintendent having the necessary training to be knowledgeable in the identification, control, and management of the hazardous materials on-site. The Hazardous Materials Supervisor is responsible for the following:
 - 1. Enforcing safe work and hygiene practices in compliance with the Site-Specific Hazardous Materials Management Plan (HMMP).
 - 2. Advising subcontractors of potential hazards and minimum general requirements of the HMMP.
 - 3. Coordinating subcontractor's work regarding hazardous material procedures and controls.
 - 4. Establishing and maintaining restricted work areas.
 - 5. Requiring proper use of personal protective equipment.
 - 6. Communicating approved modified safety requirements to site personnel.

7. Notification and coordinating signing of waste manifests with the MRCA.

B. Hazardous Materials Handlers: Only qualified persons shall engage in hazardous material- related work. Contractor and subcontractor personnel who come into contact with, are exposed to, disturb, operate equipment or otherwise handle hazardous or contaminated material, or debris shall have appropriate hazard communication and required training, personal and medical monitoring, and shall be certified to wear appropriate personal protective equipment as required by the applicable laws and regulations. Special qualifications which may be required depending on the Contractor's means and methods include, but are not limited to, the following:

1. Asbestos-Related Work Involving Asbestos-Containing Materials exceeding 100 square feet:
 - a) Valid asbestos handling license issued by the California State Contractors Licensing Board and a valid current Certificate of Registration for Asbestos-Related Work as issued by the California Department of Industrial Relations - Division of Occupational Safety and Health (Cal/OSHA).
 - b) Work shall be completed under the on-site supervision of a Competent Person as defined by OSHA Regulation 29 CFR Part 1926.1101 (8 CCR 1529 in California).
 - c) All abatement workers shall have AHERA training with annual 8-hour refresher training, current medical exams for the use of respiratory protection, and current fit tests of appropriate respirators.
2. Lead-Hazard Work: All affected workers shall have lead awareness training, current medical examinations and approval for the use of respiratory protection, and current fit testing of respirators complying with Cal/OSHA regulation 8 CCR 1532.1 when affecting lead paints and lead construction hazards including, but not limited to:
 - a) Demolishing or salvaging structural items where lead or material containing lead are present.
 - b) Removing or encapsulating materials containing lead.
 - c) Constructing, altering, repairing or renovating structures, substrates, or portions thereof that contain lead or materials containing lead.
 - d) Installing of products containing lead.
 - e) Cleaning-up of lead contamination.
 - f) Transporting, disposing, storing, or containing lead or lead-containing materials on the site or other locations where construction and demolition activities are performed.
3. Lead Abatement Work: Only qualified persons with California Department of Public Health' (CDPH)-approved Lead Workers training, annual medical examinations and approval for the use of respiratory protection, and current fit testing of respirators under the direct supervision of a CDPH approved Lead Abatement Supervisor shall engage in work defined under Cal/OSHA regulation 8 CCR 1532.1 affecting lead-based paints and lead construction hazards, including but not limited to:

- a) Working in an environment where lead exposures exceed 30 micrograms/m³.
 - b) Abating lead-based paints, including but not limited to abatement of loose and peeling lead-based paints, demolition and disposal of concrete-encased primed structural steel and/or stripping of lead coatings from structural steel prior to torching or welding.
 - c) As defined under Title 17, California Code of Regulations (CCR), Division 1, Chapter 8 "Accreditation, Certification and Work Practices in Lead-Related Construction," Article 1, Sections 35001 et al, and Article 16, Section 36000 and 36100.
4. PCB Ballast-Related Work: Removal of non-leaking PCB ballasts may be completed by workers with PCB hazard awareness training as verified by the Contractor's Health and Safety Officer or Superintendent. Removal of leaking or damaged PCB ballasts from lighting fixtures shall be completed by a trained worker, wearing protective gloves and following safety procedures as outlined in the HMMP. Hazardous waste shall be handled according to the U. S. Environmental Protection Agency's Standards 40 CFR 761.60 and 761.65 (22 CCR Section 66699(b) in California).
 5. Contaminated Soils-Related Work including Underground Storage Tanks: workers shall have current 40-hour HAZWOPER training and 8-hour annual refresher training per OSHA Regulation 29 CFR 1910.120 (8 CCR 5192 in California) and shall comply with other health and safety requirements as approved in a Site-Specific Hazardous Materials Management Plan.
 6. Bio-hazard Work: Work areas contaminated with fecal matter and human excretions, along with needles and syringes and other materials potentially contaminated with infectious bloodborne pathogens or other bio-hazards shall comply with the health and safety requirements as approved in a Site-Specific Hazardous Materials Management Plan.
- C. Hazardous Materials Haulers:
1. Possess during the hauling of hazardous material, applicable federal, state, and local vehicle insurance requirements, valid driver's license, vehicle registration and licenses, and a current Class 1 Certification of Compliance from the California Highway Patrol affixed to each vehicle.
 2. Possess a Hazardous Substance Removal Certification granted by the State of California Department of Toxic Substances Control (510-540-3802) and other required certifications and insurance.
 3. Contractor shall be responsible for informing drivers of hauling vehicles about:
 - a) The nature of the material hauled.
 - b) Any recommended or required routes to and from the site.
 - c) Applicable city street use regulations and requirements, and State of California Department of Transportation (Caltrans) codes, regulations and requirements.

- d) The MRCA's requirements for proper handling and transportation of hazardous waste.
- e) The legal maximum loads for each vehicle.

1.6 REGULATORY REQUIREMENTS

- A. Hazardous and contaminated materials and hazardous waste shall be handled according to applicable laws and regulations in effect at the time of disturbance, transport or disposal of said hazardous materials or waste and requirements of the Contract Documents. In the event of conflict, the more stringent requirement shall apply.
- B. The MRCA is the generator, as defined in 22 CCR Section 66260.10 and 40 CFR Part 261, of any hazardous waste, and will be responsible for that hazardous waste to the extent required by law.
- C. Contractor is alerted to and shall familiarize itself to the following laws and regulations regarding the generation, management, characterization and disposal of hazardous waste:
 - 1. Resources Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq. and regulations 40 CFR Part 260 et seq.
 - 2. California Health and Safety Code, Division 20 and regulations, and 22 CCR Section 66000 et seq.
 - 3. For asbestos hazards: Comply with the applicable requirements of the Cal/OSHA Construction Asbestos Standard, 8 CCR Section 1529 and South Coast Air Quality Management District Rule 1403.
 - 4. For lead hazards and abatement: Comply with the applicable requirements of the Cal/OSHA Lead in Construction Standard, 8 CCR Section 1532.1; Cal/EPA Regulation 22 CCR Section 66000, et seq.; California Department of Public Health (CDPH) Regulation 17 CCR 35001, et seq.

1.7 HAZARDOUS MATERIALS USED TO PERFORM THE WORK

- A. General: Minimize the use of hazardous materials to perform the work. Where materials that contain hazardous substances or mixtures are used to perform the work, material usage shall be in strict adherence to Cal/OSHA's safety requirements and the manufacturer's warnings and application instructions listed on the Material Safety Data Sheet provided by the product manufacturer and on the product container label.
 - 1. Contractor will be responsible for coordinating the exchange of MSDS or other hazard communication information between subcontractors at the site.
 - 2. Contractor will notify the MRCA when a specific product or equipment, or their intended usage, may be unsafe prior to ordering the product or equipment or prior to the product or equipment being incorporated in the Work.
- B. Prohibited Material: The following materials and chemicals are specifically prohibited from use on this project unless otherwise accepted in writing by the MRCA.
 - 1. Material with a stated ACGIH threshold limit value of less than 25 parts per million.

2. Ethylene glycol monomethyl ether.
3. Dipropylene glycol methyl ether.
4. Ethylene glycol.
5. Formaldehyde.
6. Methylene chloride.
7. Isocyanates.
8. Chemicals with a flash point of less than 140 degrees Fahrenheit.

PART 2 - PRODUCTS

2.1 HAZARDOUS MATERIAL CONTROLS AND EQUIPMENT

- A. Protective Devices: Temporary wash stations or showers, disposable clothing, respirators, gloves, hard hats, and other required items. Respirators shall protect against appropriate dusts, fumes and mists as approved by the National Institute for Occupational Safety and Health (NIOSH) under provisions of 30 CFR Part 11.
- B. Waste Receptacles: Conform to federal and State regulations, with 6-mil minimum thickness waste bags.
- C. Polyethylene Sheeting and Dust Barriers:
 - 1. Polyethylene sheeting shall be flame-retardant and approved and listed by the State Fire Marshal in accordance with Section 13121 and/or 13144.1 of the California Health and Safety Code.
 - a) Thickness and Size: 6-mil thick minimum, unless otherwise specified, sized to minimize the frequency of joints.
 - b) Flammability: Comply with NFPA Standard 701 with a flame spread rating of no greater than 5 and a smoke development rating of no more than 70 when tested in accordance with ASTM procedures.
- D. HEPA Vacuums and Negative Pressure Units (NPU) used for clean-up of materials and detail cleaning shall be HEPA-filtered.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Notify the Contractor's Hazardous Material Supervisor of suspect conditions for testing by the MRCA.
- B. Promptly notify the MRCA of differing conditions. Please note that the Contract Documents may restrict access to some ceiling spaces and plenums where known asbestos-containing damaged, friable surfacing materials exist. Access to these restricted areas will require the use of respiratory protection, full coveralls and decontamination procedures if accessed by non-abatement trades unless a negative exposure assessment is submitted to show that lower standards of protection are acceptable.

3.2 ASBESTOS HAZARD CONTROL PROCEDURES

- A. Prohibited Activities Not Specified in this Section:
 - 1. A qualified Asbestos Abatement Contractor per Cal/OSHA regulation 8 CCR 1529 shall complete Work exceeding 100 sq. ft. or 100 linear feet of asbestos-containing materials. All work affecting friable asbestos-containing materials shall be completed in compliance with Cal/OSHA Work Class I or III procedures, as applicable. Class III work may be completed by workers with EPA Asbestos Operations and Maintenance training and annual refresher training, minimum. Refer to Section 02090 - Hazardous Materials Abatement and Control.
- B. Demolition of non-ACM obstructing known intact ACM.
 - 1. Remove non-contaminated and non-asbestos materials for access using standard dust control procedures as required for painted assemblies, etc.
 - 2. Minimize disturbances to substrates concealing friable or damaged asbestos-containing materials, such as laid-in ceiling tiles concealing asbestos-containing acoustical plasters, demolition of non-ACM partitions which may destabilize sprayed-on asbestos-containing acoustical finishes, etc. Work impacting asbestos-containing materials shall be completed by qualified workers only.
 - 3. Remove and dispose of non-contaminated waste, where feasible. Alert the Contractor's Hazardous Material Supervisor of contaminated conditions for proper removal and disposal and cordon off the affected areas where contamination is encountered. Do not dry sweep affected wastes and debris.
- C. Unexpected exposure to known or suspect intact ACM.
 - 1. Where asbestos materials are intact, such as intact ceiling plasters, proceed to remove the affected substrate and immediately label the asbestos material with a "caution" sign to prevent unintentional disturbances.
 - 2. Where asbestos materials uncovered are damaged or unknown asbestos contaminated conditions are encountered, discontinue work in the immediate contaminated area, shutdown the areas HVAC system, if not already disengaged, and alert the Contractor's Hazardous Materials Supervisor of the conditions for proper removal and disposal.

- D. Unexpected release of asbestos into the environment.
1. Cordon off the immediate area (10 to 20 ft. radius average minimum), and shutdown the area's HVAC system (if applicable). Stop work and immediately notify the MRCA of the disturbance. (Abatement work and clean-up may need to be performed under "Procedure 5" of SCAQMD's Rule 1403.)
 2. Notify the Contractor's Hazardous Materials Supervisor for proper removal and disposal using wet methods and HEPA-filtered vacuums. Clean-up work shall be completed under the directions of a Competent Person with 16-hour minimum EPA Operations and Maintenance asbestos training and by workers with 2-hours asbestos awareness training minimum unless exposures exceed the permissible exposure limit of 0.1 fibers/cc.
 3. Decontaminate or dispose of friable waste in double 6-mil thick goosenecked labeled waste bags for manifesting and disposal.
- E. Procedures for reporting Suspect Asbestos Containing Materials.
1. Advise the Contractor's Hazardous Materials Supervisor (HMS) of suspect conditions for testing by the MRCA. Do not remove or disturb suspect materials until tested and approved.
- F. Perimeter Action Level: Failure of the Contractor to follow wet methods, immediate clean up, and fiber control procedures as outlined herein resulting in exceedances to the Perimeter Action Level of 0.01 fibers/cc by Phase Contrast Microscopy at the perimeter of the regulated area, or within adjoining occupied zones (as measured by the MRCA or its consultants) shall result in clean-up and analysis of the samples by Transmission Electron Microscopy (TEM) at the Contractor's expense.

3.3 LEAD HAZARD CONTROL PROCEDURES

- A. Prohibited Activities Not Specified in this Section.
- Lead-related construction work affecting lead-based paints or lead-contaminated soils as defined under CDPH. Refer to Section 02090 - Hazardous Materials Abatement and Control.
- B. Prohibited Activities:
1. Open flame burning or torching of lead-based paints or presumed lead-based paints, including use of propane-fueled heat grids.
 2. Scraping, sanding, or grinding of lead-based paints or presumed lead-based paints without proper containment or a HEPA local vacuum exhaust tool.
 3. Uncontained hydro-blasting or high pressure washing of lead-based paints or presumed lead-based paints.
 4. Abrasive blasting or sandblasting or lead-based paints or presumed lead-based paints without proper containment or a HEPA local vacuum exhaust or dust collector.
 5. Heat guns operating above 1,100 degrees Fahrenheit.

6. Dry sweeping of debris and removal of surface coatings by torch or flame.
7. Disturbance of lead-painted or lead-coated surfaces scheduled to remain within the structure(s) by cutting, sawing, grinding, or other construction operations without adequate dust controls.
8. Eating, smoking and drinking in or in the proximity of lead hazard operations.
9. Removal of lead-containing coatings with a torch or flame, except as a result of unavoidable welding or torching of back-to-back structural elements that cannot be adequately previously abated without affecting the integrity of the structure.
10. Steam cleaning and compressed air removal for lead-based paints or presumed lead-based paints.
11. Lead hazard contamination beyond the containment barriers.

C. Handling:

1. For existing lead-painted or lead-coated surfaces that are indicated to remain, advise workers of the potential hazards.
2. For areas where handling or disturbance of loose or peeling paints are required, verify that the paint that remains on interior walls, ceilings, and other surfaces in areas of active work, as applicable, is adhered to the substrate sufficiently to support eventual repainting. Paints that peel or loosen during wetting shall be handled and removed as specified in this Section.
3. Clean debris and surfaces with HEPA-filtered vacuums and wet methods. Dry sweeping is not permitted.
4. Show where existing lead-painted or lead-coated surfaces are scheduled to remain, workers shall be advised of the potential hazard of these materials with all work completed by qualified workers.
5. Shoveling, wet sweeping, and brushing may be used only where vacuuming or other equally effective methods have been tried and are found to be ineffective.
6. Loose debris and scraped materials with a lead content greater than 1.0 mg/m³ or 0.5% by weight shall be treated as hazardous waste. Construction waste coated with intact lead paints or glazing may be disposed as construction debris in accordance with Cal/EPA requirements.
7. Workers shall decontaminate themselves and appropriate equipment prior to eating, drinking and smoking.

D. Recycling: Items to be recycled, such as but not limited to lead roof flashings or lead sheeting, shall be accompanied with a bill of lading and a memorandum from the recycler acknowledging that lead may be present and work activities and disposal will comply with applicable regulations. Submit in accordance with procedures of Section 01300 - Submittals.

E. Cleaning: Provide daily "housekeeping" on the project site including, but limited to:

1. Clean-up of loose debris and contamination daily prior to leaving the job site, or covering with tarpaulins to prevent unwanted disturbances.
 2. Daily clean-up of traffic areas, using a HEPA vacuum or wet methods.
 3. Repair of torn or damaged protective barriers.
- F. Field Quality Control:
1. Maintain airborne dust levels within the regulated construction zone and throughout the construction site below the Cal/OSHA Project Action Level of 30 micrograms per cubic meter. Levels above the Project Action Level may require an upgrade in respiratory protection for all affected workers, as well as amended work practices and clean-up of affected areas at no additional cost to the MRCA.
 2. Maintain airborne lead dust levels at the site's property line or adjoining occupied non-construction areas below the National Ambient Air Quality Standard (NAAQS) of 1.5 micrograms per cubic meter. Exceeding this level may require further isolation of the work areas, amended work practices, and clean-up of affected areas at no additional cost to the MRCA.
 3. All costs for additional sampling of contaminated areas, including the MRCA's time and expenses for handling, shipping, and analysis charges, required to show background levels below the lead standards in Subparagraphs F.1 and F.2 shall be at the Contractor's expense.
 4. Failure by the Contractor to contain construction dust and debris and exceedances of the NAAQS standard of 1.5 micrograms/cubic meter outside the construction boundaries within adjoining occupied areas of the school as measured by MRCA will require detailed clean-up and additional clearance wipe sampling at the Contractor's expense.
- G. Project Hygiene Facilities: Provide project hygiene wash-up facilities including:
1. A 2-stage decontamination assembly, minimum, including an equipment and contiguous clean room with a bucket wash-up facility positioned outside all regulated work areas. The Equipment Room shall contain labeled bags for storing contaminated protective clothing and equipment. The Clean Room shall contain lockers and containers for storing employee street clothes and personal items, including a suitable supply of potable water to permit each employee to wash their hair, hands, forearms, face and neck. Provide 1 wash station minimum for every 10 workers.
 2. Sufficient sets of protective full-body clothing to be worn in the designated work areas and whenever a potential airborne lead hazard exists. Clothing shall include, but not be limited to, full-body coveralls, headgear, eye protection, and gloves. Disposable-type protective clothing is acceptable.
- H. General Dust Controls: Provide general dust control including:
1. Hudson or airless sprayers for wetting-down construction materials and debris throughout demolition or scraping phases.
 2. Fire-retardant polyethylene dust barriers.

3. HEPA-filtered vacuum for clean-up of loose debris and suspect contamination.
 4. Polyethylene drop cloths for protection of floors, furnishings, landscaping, etc., as applicable, to prevent contamination or damage to building surfaces, equipment or finishes.
- I. Warnings and Signs: Provide the following minimum signs and posting requirements:
1. Cordon off the proximity (within approximately 20 ft.) of regulated work areas using "Caution" tape, polyethylene dust barriers, or other appropriate means. Persons entering the regulated "cordoned" work areas shall wear appropriate respiratory protection and full-body coveralls.
 2. Affix warning signs at the entry and approaches to the regulated areas.
 3. Lockout electrical and HVAC equipment within the regulated area, as necessary.
- 3.4 PCB BALLAST PROCEDURES
- A. Identifying PCB ballasts: All ballasts not specifically labeled "non-PCB" or "PCB free" shall be considered PCB-containing.
- B. Prohibited Activities Not Specified in this Section: Removal of ballasts from fixtures with hazard awareness training as indicated by the Contractor's Hazardous Materials Supervisor.
- C. Procedures for Removal of Non-Leaking Ballasts: Non-leaking ballasts shall be removed from their fixtures and packed in kitty litter-lined steel drums for hazardous waste disposal. Workers removing ballasts may require protective gloves as a precaution against unforeseen leaks or damage.
- D. Procedure for Handling Leaking PCB Ballasts:
1. Workers removing ballasts from fixtures shall wear protective clothing and nitrile or neoprene gloves.
 2. Leaking ballasts pose a health and safety hazard and shall therefore be removed by trained workers only (Cal/OSHA 40-hour Hazwoper training is recommended).
 3. Wipe down the fixture showing signs of overheated or leaking ballasts with paper towels after the unit has been cooled to room temperature.
 4. Follow with additional wiping with an organic solvent, e.g., mineral spirits or isopropyl alcohol.
 5. Place leaking ballasts and rags into a plastic bag, which is tied-off and secured.
 6. Pack the ballasts in steel drums for hazardous waste disposal.
- E. Procedure for Disposal of PCB ballasts:

1. Pack PCB ballasts and bagged leaking ballasts and rags into a steel drum, sealed, labeled, and transported to an approved incinerator following required manifest procedures as specified in this Section.
2. Absorbent material, such as kitty litter, shall be used as a cushion and absorbent within the drums.
3. Do not exceed the incinerator's drum loading requirements, typically 350 to 500 lbs. per drum.
4. Transport hazardous waste for disposal per the requirements under 22 CCR Section 66268.110.
5. Dispose as a hazardous waste per EPA Regulation 40 CFR 761.00 and 761.65 and Cal/EPA Regulation 22 CCR Section 66508.

3.5 MERCURY-CONTAINING LAMP REMOVAL PROCEDURES

- A. Prohibited Activities Not Specified in this Section: Disposal of quantities over 25 lamps per day as non-hazardous waste.
- B. Handling and Disposal of Lamps:
 1. Spent fluorescent and other mercury-containing lamps shall be considered a hazardous waste by the California Department of Public Health (CDPH; 22 CCR Section 66699(b)).
 2. Ship lamps exceeding 25 units per site per day to a commercial recycler where they are to be crushed and the mercury reclaimed.
 3. Comply with DOT requirements for manifests, with evidence of proper disposal provided to the MRCA, including a log of shipping dates and quantities.
 4. Load into secured cardboard boxes for shipment to prevent unnecessary breakage.
 5. In the event of lamp breakage, clean-up broken glass and debris immediately, using a HEPA-filtered vacuum for final clean-up.

3.6 HAZARDOUS EXCAVATED MATERIAL HANDLING PROCEDURES

- A. Properly evaluate, excavate, segregate, handle, and haul the excavated materials to an appropriate disposal site approved by the MRCA. Segregate each type of material to minimize mixing with demolished pavement, sub-base, and other hazardous materials.
- B. Place all contaminated materials and hazardous materials directly into the vehicle or container for transport to the disposal facility. Contaminated materials and hazardous materials shall be transported separately, with no mixing of the different types of materials.
- C. Enforce dust control requirements at the site as specified in the contract documents.
- D. Prevent spillage of excavated or hauled materials. Contractors shall be liable for the costs of spillage and necessary clean-up, whether on or off the site.

- E. Haul trucks carrying soils shall be loaded so that soils do not extend above the walls of the truck bed and shall be covered so as to prevent soils from spilling over the sides and back of the vehicles.
- F. Bill of Lading: Prepare a bill of lading in a form approved by the MRCA for each shipment of excavated material from the site.
 - 1. The bill of lading shall describe the contents of each truck carrying materials to the waste disposal site, including the address of the ultimate disposal site, the weight and yardage of the waste (as applicable), and an emergency phone number.
 - 2. Contractor's hauler(s) shall sign and date the bill of lading, indicating that the hauler has accepted the load described on the manifest for that particular day.
 - 3. The MRCA will sign the bill of lading and keep the appropriate number of copies and give the remaining copies to the hauler.
 - 4. Copies of bill of lading accepted by the treatment/disposal sites shall be provided to the MRCA.
- G. Weighing of Excavated Materials: Measure weights of all excavated materials produced.
 - 1. Weight measurements shall be correlated to either the vehicle's bill of lading number or the hazardous waste manifest number.
 - 2. The information shall show the date of lading, net weight of soils loaded to the appropriate vehicle, and an identification of the vehicle that has been loaded.

3.7 EXCAVATED MATERIAL DISPOSAL PROCEDURES

- A. Notify the MRCA in writing and obtain the MRCA's approval prior to sale, supply, off-site reuse, or offer to sell excavated material.
- B. Site Tests: Perform engineering and chemical testing required by the MRCA and applicable federal, state, and local laws and regulations at no additional cost to the MRCA.

3.8 IMPORTED MATERIALS

- A. Maximize the use of excavated materials for backfill.
- B. Except for contaminated soils or hazardous wastes, soils removed from the Project excavation may be used for backfill provided it conforms to the requirements of the Contract Documents.
- C. Imported materials for backfill shall conform to the requirements of the Contract Documents and shall be approved by the MRCA prior to being hauled to the site.
- D. Asphalt, crushed concrete aggregate, mud, clay, bricks, cobblestones, rocks, and debris will not be accepted as imported fill material.

3.9 UNDERGROUND STORAGE TANK HAZARD CONTROL PROCEDURES

- A. Not applicable.

3.10 OTHER HAZARDOUS MATERIALS HAZARD CONTROL PROCEDURES

- A. Not applicable.

3.11 WASTE DISPOSAL AND MANIFESTING PROCEDURES

- A. Hazardous Waste Disposal:

1. Packing, labeling, transporting, and disposing of hazardous waste shall comply with Cal/EPA regulations under 22 CCR, including completion of the Uniform Hazardous Waste Manifest Form (DTSC 8022A and EPA 8700-22).
2. A "Waste Manifest" shall be completed for disposal of hazardous waste. The transporter shall possess a valid EPA Transporter I.D. number. The Contractor's Hazardous Materials Supervisor shall notify the Project Manager at least 48 hours prior to the time that the Manifest is required to be signed by the MRCA.
3. Applicable information to be included in the "Waste Manifest" includes the following:
 - a) EPA Generator I.D. Number: Verify with MRCA Project Manager.
 - b) Generator's Name and Address:
Mountains Recreation and Conservation Authority, Los Angeles River Center and Gardens, 570 West Avenue 26, Suite 100, Los Angeles, CA 90065
 - c) Generator Tax I.D. Number: _____.

- B. Disposal of Contaminated and Other Materials:

1. Disposal of intact lead-coated architectural or structural elements may occur as non-hazardous waste in accordance with Cal/EPA's and the Department of Toxic Substances Control's (DTSC) requirements.
2. Loose and peeling lead-based paints and miscellaneous lead debris shall be treated as hazardous waste, unless otherwise indicated. Lead wastes shall be profiled by the Contractor by means of standard digestion and extraction tests (TCLP, WET and SW846), as appropriate, and shall be manifested and properly disposed.

3.12 FINAL PROJECT CLEAN-UP AND REOCCUPANCY CLEARANCE CRITERIA PROCEDURES

- A. Asbestos: Asbestos-containing materials will be abated with clearance by visual inspection and Phase Contrast Microscopy (PCM) or Transmission Electron Microscopy (TEM), as applicable, as outlined under the "Hazardous Materials Abatement and Control" Section, as applicable.

- B. Lead Hazards:

1. Visual Inspection: Final clean-up prior to re-occupancy or Substantial Completion shall include wet wiping using a mild detergent solution and HEPA vacuuming all suspect

dust and debris for final visual inspection, or wipe dust sampling as outlined under the "Hazardous Materials Abatement and Control" Section, as applicable.

2. Final Cleaning:
 - a) Final clean-up prior to demolition shall include wet wiping using a mild detergent solution and HEPA vacuuming all suspect dust and debris areas.

END OF SECTION

SECTION 02090

HAZARDOUS MATERIALS ABATEMENT AND CONTROL

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes: Minimum requirements for hazardous materials handling, control, and abatement activities, as applicable, including, but not necessarily limited to:
 - 1. Hazardous materials controls.
 - 2. Handling and disposal of asbestos-containing building materials (ACBM).
 - 3. Handling and disposal of lead-based paints and lead-containing materials.
 - 4. Removal and disposal of existing ballasts containing polychlorinated biphenyl (PCB).
 - 5. Disposal of mercury-containing lamps.
 - 6. Handling and disposal of contaminated soils.
 - 7. Demolition associated with access to hazardous materials.
 - 8. Criteria for abatement zone clearance testing.
 - 9. Criteria for re-occupancy clearance.
- B. Related Documents:
 - 1. Document 00235 - Existing Conditions: Hazardous Materials.
- C. Related Sections:
 - 1. Section 01010 - Abatement Work Plan: Summary of Work.
 - 2. Section 01110 - Hazardous Material Procedures and Controls
 - 3. Section 01300 - Submittals.
 - 4. Section 01500 - Construction Facilities and Temporary Controls
 - 5. Section 01545 - Health and Safety.
 - 6. Section 02060 - Building Demolition.
 - 7. Section 02072 - Mechanical and Electrical Selective Demolition.
- D. Related Work to be performed by the Mountains Recreation and Conservation Authority (MRCA) under Separate Contract:

1. Hazardous materials removal as specified in Section 01010 - Abatement Work Plan: Summary of Work.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. E84: "Test Method for Surface Burning Characteristics of Building Materials."
2. E119: "Standard Method for Fire Tests of Building Construction and Materials."
3. E849: "Safety and Health Requirements Relating to Occupational Exposure to Asbestos."

B. American National Standards Institute (ANSI):

1. Z9.2: "Fundamentals Governing the Design and Operation of Local Exhaust Systems."
2. Z41.1: "Men's Safety Toe Footwear."
3. Z86.1: "Commodity Specification for Air."
4. Z87.1: "Practice for Occupational and Educational Eye and Face Protection."
5. Z88.2: "Practices for Respiratory Protection."
6. Z88.6: "Respiratory Protection - Respiratory Use Physical Qualifications for Personnel."
7. Z89.1: "Requirements for Industrial Head Protection."

C. National Fire Protection Association (NFPA):

1. Standard 10: "Fire Extinguishers".
2. Standard 70: "National Electric Code."
3. Standard 90A: "Fire Rating of Sprayed-On Fireproofing."
4. Standard 701: "Small Scale Fire Test for Flame Resistant Textiles and Films."

D. California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA):

1. Title 8 California Code of Regulations (8 CCR) Section 5144 - Respiratory Protection.
2. Title 8 California Code of Regulations (8 CCR) Section 1532.1 - Construction Lead Standard.
3. Title 8 California Code of Regulations (8 CCR), Article 4, Section 1529 - Asbestos Standard for the Construction Industry.

4. Title 8 California Code of Regulations (8CCR) Sections 3203 and 1509 - Injury and Illness Prevention Program.
 5. Title 8 California Code of Regulations (8 CCR), Article 110, Section 5208 - Asbestos Standard for General Industry.
 6. Title 8 California Code of Regulations (8 CCR), Article 2.5, Section 341.6 for employer registration when disturbing more than 100 sq. ft. of ACCM.
- E. U. S. Department of Housing and Urban Development (HUD): Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing," referred to as the "HUD Guidelines."
- F. State of California Regional Water Quality Control Board (RWQCB):
1. Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Storage Tank Sites.
- G. State of California State Water Resources Control Board:
1. Leaking Underground Fuel Tank (LUFT) Manual.
- H. American Petroleum Institute (API):
1. API Recommended Practice 1604: "Removal and Disposal of Used Underground Storage Tanks."

1.3 DEFINITIONS

- A. Abatement: as defined by the Department of Public Health for lead hazards work, includes any set of measures designed to reduce or eliminate lead hazards.
- B. Activity Class/Category - Lead: Lead hazard designations assigned to work activities that involve lead-containing materials. Activities that fall into Classes I through III, including as examples the operations defined below, are required to assume the following personal airborne exposure levels, unless otherwise demonstrated.
1. Activity Class I; Exposure <500 micrograms/m³
 - a) Surface clean-up of lead-containing dust or debris <15,000 micrograms/ft²;
 - b) Spray painting with lead-based paints; Manual demolition of structures (e.g. drywall, plaster, etc.);
 - c) Manual sanding, grinding, needle gunning, chiseling, hammering, wire brushing, milling or scraping of lead-based coatings;
 - d) Heat gun removal of any surface coating; and power tool cleaning with dust collection systems.
 2. Activity Class II; Exposure >500 micrograms/m³ and <2,500 micrograms/m³
 - a) Using lead mortar;

- b) Lead burning;
 - c) Rivet busting;
 - d) Power tool cleaning without dust collection systems;
 - e) Clean-up of dry abrasive; and
 - f) Abrasive blasting enclosure movement and removal.
3. Activity Class III; Exposure $>2,500$ micrograms/m³
- a) Abrasive blasting of any coated surfaces;
 - b) Welding on any coated surfaces;
 - c) Torching or cutting on any coated surfaces; and
 - d) Torch burning of any coated surfaces.
- C. Asbestos Work Class: Activities for removing asbestos materials by categories are as follows:
- 1. Work Class I:
 - a) Activity involving removal of TSI and surfacing asbestos-containing materials (ACM) or friable presumed asbestos-containing materials (PACM).
 - 2. Work Class II:
 - a) Activity involving removal miscellaneous materials excluding TSI and surfacing asbestos-containing materials (ACM) or friable presumed asbestos-containing materials (PACM), including but not limited to wallboard, floor tiles and sheeting, roofing and siding shingles, and construction mastics.
 - 3. Work Class III:
 - a) Repair and maintenance operations where TSI or surfacing is likely to be disturbed, which fits within one standard glovebag or waste container under 60 inches.
 - 4. Work Class IV:
 - a) Maintenance and custodial activities during which employees contact but do not disturb PACM or ACM and activities to clean-up dust, waste and debris resulting from Work Class I, II, and III activities.
- D. Certified Lead Worker: includes those who do lead-related construction work activities on a work site under the directions of a Certified Lead Supervisor, including:

1. Removal, disposal or abatement of loose and peeling lead-based paints as defined by HUD, including scraping, demolition or other Cal/OSHA Activity 1 through 3 work as defined above lasting over 20 years.
 2. Removal or repair of lead plumbing.
 3. Repainting or general construction on surfaces painted with lead-based paints.
 4. Removal, enclosing or covering of lead-contaminated soils.
 5. Note that renovations, remodeling, painting, operations and maintenance work or other activities listed above that are considered to be interim controls, or lasting under 20 years, may be completed by workers satisfying Cal/OSHA's asbestos awareness training requirements only.
- E. Certified Lead Supervisor: includes those who supervise daily work activities on a lead-related construction site, as well as supervision of repainting or general construction performed on surfaces with lead-based paints where abatement is designed to permanently reduce or eliminate lead hazards for public (non-industrial) buildings or to last more than 20 years. The Certified Lead Supervisor shall oversee the Certified Lead Workers, enforce safe work practices, and schedule and coordinate work site activities with the building occupants and other contractors and consultants.
- F. Containment: as defined by the California Department of Public Health includes any system, process or barrier used to contain lead hazards in a work area, including plastic sheeting, wet scraping, and other lead-safe work practices as described in the HUD Guidelines, Chapter 8.

1.4 SUBMITTALS

- A. Asbestos:
1. Submit the following, in accordance with Section 01300 - Submittals, prior to Commencement of the Abatement Work:
 - a) Proof of current Asbestos Contractor's license (CSLB).
 - b) Proof of current California Department of Public Health (CDPH) Asbestos Contractor's registration certification.
 - c) Valid and current SCAQMD notification for the Project.
 - d) Cal/OSHA 24-hour Temporary Worksite Notification for Asbestos and Methylenedianiline-Related Work per 8 CCR 1529 for disturbances exceeding 100 sq. ft.
 - e) Worker documentation, including:
 - 1) Current AHERA training certifications - Supervisor/Competent Persons.
 - 2) Current AHERA training certifications - Workers.

- 3) Respiratory fit test records in compliance with 8 CCR 5144.
 - 4) Medical examination approvals for respirator use in compliance with 8 CCR 5144.
 - f) Written asbestos abatement work plan and schedule as part of the Contractor's Hazardous Materials Management Plan (HMMP) to be submitted in accordance with Section 01110 - Hazardous Materials Procedures.
 - g) Material Safety Data Sheets (MSDS) for chemicals used.
 - h) Emergency phone number and pager listing.
 - i) SCAQMD annual registration of negative pressure units and vacuums.
 - j) Rotameter calibration data within past 6 months.
 - k) Negative Exposure Assessment, as warranted, where personal protective equipment differs from minimal requirements established by Cal/OSHA's Construction Industry Standards.
2. Submit the following, in accordance with Section 01300 - Submittals, within 5 calendar days of the request by the MRCA or within 5 calendar days of completion of the abatement or hazard control work.
- a) Contractor daily personal air-monitoring data.
 - b) Updated worker documentation, as needed.
 - c) Daily boundary access logs.
 - d) Daily negative pressure records, as applicable.
 - e) Copies of updated schedules and notices to regulatory agencies, as needed.
 - f) Receipt and weight tickets from landfill operator or incinerator, as applicable.
 - g) Copies of completed uniform waste manifests.
 - h) Certification of Completion.

B. Lead-Related Work:

1. Submittals the following, in accordance with Section 01300 - Submittals, prior to commencement of the lead-related work:
 - a) Worker documentation, including:
 - 1) Abatement Plan prepared by a Certified Lead Supervisor, Certified Lead Project Monitor, or Certified Lead Project Designer including:
 - (a) detailed lead hazards control and management measures.

- (b) a detailed description of abatement methods, locations and components where abatement is planned.
 - (c) a recommended schedule for inspection.
 - (d) instructions to maintain potential lead hazards in safe condition.
 - 2) Current CDPH Certified Lead Worker and Certified Lead Supervisor training certificates.
 - 3) Completed CDPH Form 8551 (12/97) prior to lead-based paint or lead-contaminated soils abatement work.
 - 4) Respiratory fit test records within past 12 months.
 - 5) Current Medical Examination approvals for all workers wearing half facepiece negative air respirators or greater.
 - 6) Blood lead test for Certified Lead Workers within the past 90 days.
 - b) Material safety data sheets for chemicals used.
 - c) Lead Hazard Control Plan pursuant to 8 CCR 1532.1: Procedures for minimizing and controlling the migration of lead from disturbance of lead-containing materials incidental to the contract work, including a written lead hazard or lead abatement work plan and schedule as part of the Contractor's Hazardous Materials Management Plan (HMMP) to be submitted in accordance with Section 01110 - Hazardous Materials Procedures.
2. Submit the following, in accordance with Section 01300 - Submittals, within 5 calendar days of the request by the MRCA or within 5 calendar days of completion of the abatement or hazard control work.
- a) Updated worker documentation, as needed.
 - b) Contractor periodic personal air-monitoring results.
 - c) Receipt and weight tickets from landfill operator or recycler as applicable.
 - d) Waste profiling data (TCLP, WET, and SW846, as applicable).
- C. PCB Ballast-Related Work:
- 1. Submittals the following, in accordance with Section 01300 - Submittals, prior to commencement of the work:
 - a) Hazard Control Plan: Procedures for clean-up of leaking ballasts and disposal and transportation for incineration of PCB ballasts as part of the Contractor's Hazardous Materials Management Plan (HMMP) to be submitted in accordance with Section 01110 - Hazardous Materials Procedures.

- b) Evidence of hazard awareness training of workers removing and packing PCB ballasts.
 - c) Identification of EPA approved incinerator and DOT approved transporter.
 - d) PPE to be used.
2. Submit the following, in accordance with Section 01300 - Submittals, within 30 calendar days of the request by the MRCA or within 30 calendar days of completion of the abatement or hazard control work.
- a) Completed Uniform Waste Manifest.

D. Fluorescent Light Tube-Related Work Submittals:

1. Submittals the following, in accordance with Section 01300 - Submittals, prior to commencement of the work:
- a) Identification of EPA approved recycler.
 - b) Temporary storage plan.
2. Submit the following, in accordance with Section 01300 - Submittals, within 5 calendar days of the request by the MRCA or within 5 calendar days of completion of the hazard control work.
- a) Completed manifest or evidence of shipment date, recycler and quantities shipped.

E. Contaminated Soils-Related Work Submittals:

1. Submittals the following, in accordance with Section 01300 - Submittals, prior to commencement of the work:
- a) Hazard Control Plan: Procedures for remediation of contaminated soils and schedule as part of the Contractor's Hazardous Materials Management Plan (HMMP) as outlined in the "Hazardous Materials Procedures" Section, approved and signed by a Certified Industrial Hygienist. Include the following material or sections:
 - 1) Identification of key personnel and safety responsibilities.
 - 2) A site description and background, including sampling locations and results.
 - 3) Job hazard analysis.
 - 4) Exposure monitoring and air monitoring requirements.
 - 5) Required personal protective equipment.
 - 6) Medical surveillance program.

- 7) Employee training requirements.
 - 8) Applicable general safe work practices.
 - 9) Site control work areas and decontamination procedures.
 - 10) Emergency response plan.
 - 11) Recordkeeping requirements.
 - b) Worker documentation, including:
 - 1) Current OSHA 40-hour HAZWOPER training certificate with 8-hour annual refresher.
 - 2) Current respiratory fit test records.
 - 3) Current Medical Examination approvals.
 - c) Identification of EPA approved disposal site and DOT-approved transporter.
2. Submit the following, in accordance with Section 01300 - Submittals, within 5 calendar days of the request by the MRCA or within 5 calendar days of completion of the abatement or hazard control work.
- a) Updated worker documentation, as needed.
 - b) Contractor periodic personal air-monitoring results.
 - c) Receipt and weight tickets from landfill operator.
 - d) Waste profiling data (Total Concentration, TCLP, and WET test, as applicable).
 - e) Completed Uniform Waste Manifest.
- F. Underground Storage Tanks-Related Work Submittals (Not in scope.)
1. Submit the following, in accordance with Section 01300 - Submittals, prior to commencement of the work:
 - a) Not applicable.
- G. Other Hazardous Materials-Related Work Submittals:
1. Submit the following, in accordance with Section 01300 - Submittals, prior to commencement of the work:
 - a) Not applicable.
 2. Submit the following, in accordance with Section 01300 - Submittals, within 5 calendar days of the request by the MRCA or within 5 calendar days of completion of the abatement or hazard control work.

- a) Not applicable.

1.5 QUALITY ASSURANCE

A. Qualifications

1. Asbestos Abatement Work: Only qualified persons shall engage in asbestos abatement activities. Work involving asbestos-containing materials exceeding 100 square feet (SF) or 100 linear feet (LF) shall be completed by a Contractor holding a valid asbestos handling license issued by the California State Contractors Licensing Board (CSLB) and a valid current Certificate of Registration for Asbestos-Related Work as issued by the California Department of Industrial Relations - Division of Occupational Safety and Health (Cal/OSHA). Work shall be completed under the on-site supervision of a Competent Person, as defined by OSHA Regulation 29 CFR Part 1926.1101 (8 CCR 1529 in California). All abatement workers shall have AHERA training with annual 8-hour refresher training, current medical exams for the use of respiratory protection, and current fit test of appropriate respirators.
2. Lead Hazard/Abatement Work: Only qualified persons with CDPH approved Lead Workers training, current medical examinations and approval for the use of respiratory protection, and current fit testing of respirators under the direct supervision of a CDPH approved Lead Abatement Supervisor shall engage in work defined under Cal/OSHA regulation 8 CCR 1532.1 affecting lead-based paints and lead construction hazards, including but not limited to:
 - a) Working in an environment where lead exposures exceed 30 micrograms per cubic meter.
 - b) Abating lead-based paints, including but not limited to abatement of loose and peeling lead-based paints, demolition and disposal of concrete-encased primed structural steel and/or stripping of lead coatings from structural steel prior to torching or welding.
3. PCB Hazard Work: Removal of leaking or damaged PCB ballasts from lighting fixtures shall be completed by a trained worker, wearing protective gloves and following safety procedures as outlined in the HMMP. Hazardous waste shall be handled according to the U. S. Environmental Protection Agency's Standards 40 CFR 761.60 and 761.65 (22 CCR Section 66699(b) in California).
4. Contaminated Soils-Related Work: Subcontractors will be required to have current 40-hour HAZWOPER training and 8-hour annual refresher training per OSHA Regulation 29 CFR 1910.120 (8 CCR 5192 in California) and shall comply with other health and safety requirements as approved in a Site-Specific Hazardous Materials Management Plan, approved and signed by the Contractor's Certified Industrial Hygienist.
5. Underground Storage Tank-Related Work: Subcontractors will be required to have current 40-hour HAZWOPER training and 8-hour annual refresher training per OSHA Regulation 29 CFR 1910.120 (8 CCR 5192 in California) and shall comply with other health and safety requirements as approved in a Site-Specific Hazardous Materials Management Plan, approved and signed by the Contractor's Certified Industrial Hygienist.

- B. Regulatory Requirements: The Contractor shall be alerted to and familiar with the following laws and regulations regarding the hazards, control measures, management, characterizing, transport and disposal of hazardous wastes:
1. Asbestos Abatement Work: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to perform the work required for asbestos abatement and disposal of waste shall be in accordance with these Specifications and the most current regulations, including but not limited to:
 - a) Environmental Protection Agency NESHAP and AHERA regulations (40 CFR Part 763, as applicable).
 - b) Occupational Safety and Health Administration (inclusive of OSHA 29 CFR 1926.1101)
 - c) California Department of Occupational Safety and Health (inclusive of Cal/OSHA 8 CCR 1529)
 - d) California Environmental Protection Agency (Cal/EPA).
 - e) South Coast Air Quality Management District (SCAQMD), Rule 1403.
 - f) Other applicable federal, state, and local governmental regulations pertaining to asbestos-containing materials (ACM) and asbestos waste.
 2. Lead Hazard/Abatement Work: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to perform the work required for lead abatement, demolition, decontamination, hazard control, and disposal of waste shall be in accordance with these Specifications and the most current regulations, including but not limited to:
 - a) Environmental Protection Agency National Ambient Air Quality Standards, as applicable (40 CFR 61).
 - b) Occupational Safety and Health Administration (inclusive of OSHA 29 CFR 1926.62)
 - c) California Department of Occupational Safety and Health (inclusive of Cal/OSHA 8 CCR 1532.1)
 - d) California Environmental Protection Agency (Cal/EPA), Title 22.
 - e) California Department of Public Health (17 CCR Sections 35001 -35099).
 - f) Other applicable federal, state, and local governmental regulations pertaining to lead hazards and lead waste.
 3. Polychlorinated Biphenyl Work: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to handle, containerize, secure, label, manifest, transport and either reuse, dispose, incinerate, or recycle PCB-containing ballasts shall be in accordance with these Specifications and with Cal/EPA Regulation 22 CCR Sections 6628.110 and 66508.

4. Mercury-Containing Lamp Disposal/Recycling: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to handle, containerize, secure, label, manifest, transport and either reuse, dispose, or recycle mercury-containing lamps impacted by the construction operations shall be in accordance with these Specifications and with Cal/EPA Regulation 22 CCR Section 66699(b).
5. Contaminated Soil Clean-up: All labor, materials, facilities, equipment, services, employees and training, and testing necessary to perform the work required for contaminated [soil and/or ground water] abatement, decontamination, hazard control, and disposal of waste shall be in accordance with these Specifications and the most current regulations.
6. Underground Storage Tanks (Not in scope.)
7. Underground Storage Tank-Related Work (Not in scope.)

C. Meetings:

1. Pre-Construction or Pre-Abatement Meeting:
 - a) Prior to any abatement work, the Contractor is to attend a pre-construction meeting to be attended by representatives of the MRCA, the MRCA's Consultants, the Contractor, the Hazardous Materials Abatement Subcontractor, and other Subcontractors whose work may be affected. The meeting agenda shall include the following considerations:
 - 1) Review of the Specifications and Plans in detail related to the abatement and hazards work. All conflicts and ambiguities, if any, shall be discussed.
 - 2) Review in detail the project conditions, schedule, construction sequencing, abatement application requirements, and quality of completed work.
 - 3) Review in detail the means of protecting adjoining areas, protection of Contractor's, Subcontractor's, MRCA's workers, and completed work during the abatement activities.
 - 4) Pre-job submittals requirements.
 - 5) Site security requirements.
2. Weekly Meetings: At the MRCA's option, abatement projects extending over one week in length may require attendance of the Contractor at a weekly progress meeting. The purpose of this meeting is to review abatement and project scheduling, coordination with other trades, security and site-specific requirements.

1.6 TIME LIMITATION AND DELAY CHARGES

- A. Complete all asbestos, lead, and other hazard work specified in this Section in no more than sixteen (16) calendar days.

- B. In the event of failure to complete the Work of this Section within the specified time, the Contractor shall pay liquidated damages in the amount of one thousand dollar (\$1,000.00) per calendar day for each day of delay in completion of work beyond the number of days specified in Paragraph 1.6A. The specified amount of liquidated damages represents the MRCA's estimate of costs which include, but are not limited to, those of the MRCA and the MRCA's Consultants for observations and inspections, daily air monitoring, equipment, transportation, and analysis charges which would be incurred by the MRCA after the number of calendar days specified for completion of the Work of this Section.

PART 2 - PRODUCTS

2.1 ASBESTOS WORK - MATERIALS AND EQUIPMENT

A. Protective Devices:

1. Temporary wash stations or showers, disposable clothing, respirators, gloves, hard hats, and other required items.
2. Respirators shall protect against asbestos and other appropriate dusts, fumes and mists as approved by the National Institute for Occupational Safety and Health (NIOSH) under provisions of 30 CFR Part 11.

B. Waste Receptacles: Conform to federal and State regulations, with 6-mil minimum thickness or glovebags or waste bags.

C. Sealants and Polyethylene Sheeting:

1. Polyethylene sheeting shall be flame-retardant and approved and listed by the State Fire Marshal in accordance with Section 13121 and/or 13144.1 of the California Health and Safety Code.
 - a) Thickness and Size: 6-mil thick minimum, unless otherwise specified, sized to minimize the frequency of joints.
 - b) Flammability: Comply with NFPA Standard 701 with a flame spread rating of no greater than 5 and a smoke development rating of no more than 70 when tested in accordance with ASTM E84 procedures.
2. Sealing Tape shall conform to the following:
 - a) 2-inches or wider, capable of sealing joints of adjacent sheets of polyethylene and attaching polyethylene sheet to finished or unfinished surfaces or similar materials.
 - b) Tape shall be capable of adhering under dry and wet conditions, including use of amended water.
3. Preservation Sealing Tape: Type specifically designed for adhering to critical or sensitive surfaces without damage to surface; 3M or equal.
4. Spray adhesives shall not contain methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds.
5. Fire resistant sealants shall be compatible with concrete, metals, wood, cable jacketing and other materials capable of preventing fire, smoke, water and toxic fumes from penetrating through sealants.
 - a) Sealants shall be asbestos free and shall have a flame spread, smoke and fuel contribution of zero.

- b) Sealants shall be ASTM -and UL-rated for 3 hours for standard method of fire test for firestop systems.
6. Lagging sealer for enclosing and sealing raw exposed edges of piping, fitting, equipment and duct insulation (as applicable) shall meet the requirements of NFPA 90A.
- D. Surfactants and Encapsulants:
1. Wetting agents or surfactants shall be effective and compatible with the ACM and ACBM being wetted.
 2. Bridging or penetrating type encapsulants shall have the following characteristics:
 - a) Water based. Do not utilize an organic solvent in which the solid parts of the encapsulant are suspended.
 - b) Non-flammable with no methylene chloride.
 - c) U.L. listed encapsulants, in full-scale ASTM E119 fire test, compatible with W.R. Grace "Retroguard, RG-1" fireproofing with "Spatterkote Type SKII" bonding treatment for structural and decking widths exceeding 24 inches.
 - d) Compatible with replacement materials, especially mastics, fireproofing, and adhesives.
- E. Mastic Removers shall conform to the following:
1. Non-flammable solvent or gel, with a flash point above 140 degrees Fahrenheit.
 2. Solvent waste shall not result in the generation of hazardous waste as described under 22 CCR, Division 4.
 3. Removers shall not contain methylene chloride, halogenated hydrocarbons, or any of the following glycol ethers:
- | Common Name | Abbrev. | CAS# | Chemical Name |
|--------------------------------------|---------|----------|------------------------------|
| ethylene glycol methyl ether | EGME | 109-86-4 | 2-methoxyethanol |
| ethylene glycol methyl ether acetate | EGMEA | 110-49-6 | 2-methoxyethyl acetate |
| ethylene glycol ethyl ether | EGEE | 110-80-5 | 2-ethoxyethanol |
| ethylene glycol ethyl ether acetate | EGEEA | 111-15-9 | 2-ethoxyethyl acetate |
| ethylene glycol dimethyl ether | EGDME | 110-71-4 | 1,2-dimethoxyethane |
| ethylene glycol diethyl ether | EGDEE | 629-14-1 | 1,2-diethoxyethane |
| diethylene glycol | DEG | 111-46-6 | 2,2'-dihydroxyethyl ether |
| diethylene glycol methyl ether | DEGME | 111-77-3 | 2-(2-methoxyethoxy) ethanol |
| diethylene glycol ethyl ether | DEGEE | 111-90-0 | 2-(2-ethoxyethoxy) ethanol |
| diethylene glycol dimethyl ether | DEGDME | 111-90-6 | bis(2-methoxyethoxy) ether |
| triethylene glycol dimethyl ether | TEGDME | 112-49-2 | 2,5,8,11-tetraoxadodecane |
| dipropylene glycol | DPG | 110-98-5 | 2,2-dihydroxyisopropyl ether |
- F. Vacuums and Negative Pressure Units (NPU) used for clean-up of materials and detail shall be HEPA-filtered. Provide SCAQMD annual registration on-site for all units.

2.2 LEAD-RELATED WORK - MATERIALS AND EQUIPMENT

A. Protective Devices:

1. Polyethylene drop cloths and dust barriers, temporary wash stations or showers, disposable clothing, respirators, gloves, hard hats, and other required items.
2. Respirators shall protect against lead and other appropriate dusts, fumes and mists as approved by the National Institute for Occupational Safety and Health (NIOSH) under provisions of 30 CFR Part 11.

B. Sealants and Polyethylene Sheeting:

1. Polyethylene sheeting shall be flame-retardant and approved and listed by the State Fire Marshal in accordance with Section 13121 and/or 13144.1 of the California Health and Safety Code.
 - a) Thickness and Size: 6-mil thick minimum, unless otherwise specified, sized to minimize the frequency of joints.
 - b) Flammability: Comply with NFPA Standard 701 with a flame spread rating of no greater than 5 and a smoke development rating of no more than 70 when tested in accordance with ASTM E84 procedures.
2. Sealing Tape shall conform to the following:
 - a) 2-inches or wider, capable of sealing joints of adjacent sheets of polyethylene and attaching polyethylene sheet to finished or unfinished surfaces or similar materials.
 - b) Tape shall be capable of adhering under dry and wet conditions, including use of amended water.
3. Preservation Sealing Tape: Type specifically designed for adhering to critical or sensitive surfaces without damage to surface; 3M or equal.
4. Spray adhesives shall not contain methylene chloride or methyl chloroform (1,1,1-trichloroethane) compounds.
5. Fire resistant sealants shall be compatible with concrete, metals, wood, cable jacketing and other materials capable of preventing fire, smoke, water and toxic fumes from penetrating through sealants.
 - a) Sealants shall be asbestos free and shall have a flame spread, smoke and fuel contribution of zero.
 - b) Sealants shall be ASTM -and UL-rated for 3 hours for standard method of fire test for firestop systems.

C. Provide waste receptacles that meet federal and State regulations.

D. Paint Removers shall conform to the following:

1. Non-flammable removing solvents or gels, with a flash point above 140 degrees F.
2. Solvent waste shall not result in the generation of hazardous waste as described under 22 CCR, Division 4.
3. Removers shall not contain methylene chloride, halogenated hydrocarbons, or any of the following glycol ethers.

<u>Common Name</u>	<u>Abbrev.</u>	<u>CAS#</u>	<u>Chemical Name</u>
ethylene glycol methyl ether	EGME	109-86-4	2-methoxyethanol
ethylene glycol methyl ether acetate	EGMEA	110-49-6	2-methoxyethyl acetate
ethylene glycol ethyl ether	EGEE	110-80-5	2-ethoxyethanol
ethylene glycol ethyl ether acetate	EGEEA	111-15-9	2-ethoxyethyl acetate
ethylene glycol dimethyl ether	EGDME	110-71-4	1,2dimethoxyethane
ethylene glycol diethyl ether	EGDEE	629-14-1	1,2diethoxyethane
diethylene glycol	DEG	111-46-6	2,2'dihydroxyethyl ether
diethylene glycol methyl ether	DEGME	111-77-3	2-(2-methoxyethoxy) ethanol
diethylene glycol ethyl ether	DEGEE	111-90-0	2-(2-ethoxyethoxy) ethanol
diethylene glycol dimethyl ether	DEGDME	111-90-6	bis(2-methoxyethoxy) ether
triethylene glycol dimethyl ether	TEGDME	112-49-2	2,5,8,11tetraoxadodecane
dipropylene glycol	DPG	110-98-5	2,2'dihydroxyisopropyl ether

- E. Cleaning Agents: Cleaning agents, equipment, and methods employed shall not in any way damage the substrate or adjoining surfaces and finishes. Cleaning solvents shall be non-injurious to the surfaces upon which they are applied. The methods used shall cause no pitting, erosion or damages to the surfaces.
1. Do not use chemicals that may attach or leave deposits on the substrate material.
 2. Modify the process or processes to suit the finish, hardness, and condition of the surface to be cleaned.
- F. Vacuums and negative pressure units shall be HEPA-filtered for clean-up of loose debris and contaminants. Provide SCAQMD annual registration on-site for all units.

2.3 OTHER HAZARDOUS MATERIALS - MATERIAL AND EQUIPMENT

- A. Soil, Pea Gravel or Other Backfill Materials:
1. Import engineered fill in uniform layers (lifts) not exceeding twelve (12) inches loose thickness and compacted to at least ninety percent (90%) of the maximum dry unit weight of the soil, or as otherwise directed by MRCA.
 2. Fill shall be free of all excess organic material and hazardous or toxic materials, man-made or naturally occurring, including serpentine rock (serpentinite), hydrocarbon materials, metals, and construction debris of any sort.
- B. Asphalt and Concrete Surfacing Materials:
1. Provide materials that conform to all requirements of the LADPW, MRCA and DOT.

2. Materials shall closely match the existing materials in the same area. Where new materials are installed adjacent to older materials, care shall be taken to match the height, slope, color, and surface texture of the new material with the old.
- C. Waste Containers:
1. Provide sealable metal drums, 55-gallon capacity, with sealable lids. Label the drums in accordance with EPA and DTSC requirements, including the Generator I.D. or location identification and manifest number. Drums shall be air and water tight.
- D. Miscellaneous Other Materials and Equipment:
1. Use dry ice in pelletized form.
 2. Use non-recycled, fire-rated polyethylene sheeting, 20 mil or greater thickness, underneath and on top of excavated soils or materials.
 3. Provide adequately rated equipment with sufficient capacity to remove the tank and perform ancillary excavation and compacting work within the allowable time constraints identified by the MRCA.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Review the hazardous material report(s) to familiarize oneself with hazardous material locations and conditions, and previous abatement by Others, as applicable.
- B. Review site conditions to verify quantities, work zones, available utilities, security, etc.

3.2 PREPARATION

- A. Minimum Protective Procedures for Asbestos Work:
 - 1. Protection of Visitors and Other Site Personnel: Cordon off the abatement area(s) with appropriate signs, and provide temporary tunneling or scaffolding, as applicable.
 - 2. Respiratory Protection: Comply with Cal/OSHA Regulation 8 CCR Section 1529 and ANSI Standard Z88.2, "Practices for Respiratory Protection." Use respirators approved by the National Institute for Occupational Safety and Health (NIOSH).
 - 3. Provide site security to assure that no member of the public is able to gain access to the asbestos work area at any time. Maintain access and egress routes at all times.
 - 4. Provide worker training, respiratory protection, and medical examinations to meet applicable regulations.
 - 5. Provide temporary lighting and power to work areas, including installation of ground fault interrupters.
 - 6. Fully ground all equipment within the work zone and decontamination assemblies.
 - 7. Establish negative pressure in work area(s) as required under 8 CCR Section 1529. Note that where approved by the MRCA, negative pressure units *may* be removed overnight from unoccupied buildings where site security and equipment are at risk. Under such conditions, the Contractor shall be responsible for sealing all openings and the decontamination assembly before completion of the day's work and re-establishing negative pressurization of the zone before abatement commences.
 - 8. Construct enclosure system(s) for worker and equipment decontamination.
 - 9. Provide workers with sufficient sets of protective full-body clothing to be worn in the designated work area and whenever a potential exposure to airborne asbestos or potential safety hazards exist. Such clothing shall include but not be limited to: full-body coveralls, headgear, eye protection, and gloves. Disposable-type protective clothing, headgear, and footwear may be provided.
 - a) Full-Body Clothing: Assure that workers wear hoods covering their hair in the designated work areas at all times. Do not wear protective clothing in lieu of street clothing outside the work area. Leave non-disposable-type protective clothing and footwear in the wash room until the end of the asbestos abatement work. An acceptable alternative to disposal is proper storage in a sealed and